

# Harmonized MHAS Documentation

**VERSION C (2001-2019), SEPTEMBER 2022**

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# Preface

The Mexican Health and Aging Study (MHAS) is a longitudinal household survey dataset for the study of health, economic position, and quality of life among the elderly. It was modeled after the Health and Retirement Study (HRS), a similar longitudinal survey dataset in the United States. Part of the reason for the close connection is to allow cross-country comparisons using these data.

In order to make the data more accessible to researchers and to facilitate such comparisons, we, the USC Gateway to Global Aging Data team, created the Harmonized MHAS, a user-friendly version of a subset of the MHAS Interviews. The Harmonized MHAS initiative is part of a larger set of projects. With funding and support from the National Institute on Aging, we have also created the Harmonized HRS (United States), Harmonized ELSA (England), Harmonized SHARE (Europe + Israel), Harmonized CRELES (Costa Rica), Harmonized KLoSA (South Korea), Harmonized JSTAR (Japan), Harmonized TILDA (Ireland), Harmonized CHARLS (China), Harmonized MARS (Malaysia), and Harmonized LASI (India) data. Further information about these Harmonized data files with questionnaires and other metadata is available on our searchable website, <https://g2aging.org/>.

In creating the Harmonized data files, we have followed the RAND HRS and Harmonized HRS conventions of variable naming and data structure. The RAND HRS is a user-friendly version of a subset of the HRS that the RAND Center for the Study of Aging created to increase usability. The Harmonized HRS is a supplementary dataset to the RAND HRS, which also includes a subset of the HRS data, that the Gateway to Global Aging Data team has created to increase usability of a greater number of HRS variables. The Harmonized MHAS includes variables with a similar naming convention that mimics the RAND HRS, Harmonized HRS, and other Harmonized variables. This document describes these data.

Note, however, that MHAS license agreements do not allow us to disseminate the data directly. Instead, MHAS distributes the Harmonized MHAS dataset. We also make available a Stata script ("do file") that generates these derived variables from the original MHAS data files. Additional information about MHAS can be obtained from the MHAS website at <http://www.mhasweb.org/>.

We are grateful for the continuing support of and funding from NIA. In interpreting the MHAS data, we greatly benefited from the help and insights of MHAS staff members. We have greatly benefited from the discussions with and the suggestions from our colleagues at the University of Southern California and RAND Corporation.

## Requested Acknowledgment

We ask all users of the Harmonized MHAS to please inform our team of any written analysis using data from the Harmonized MHAS or information from the Harmonized MHAS Codebook by sending an email to [papers@g2aging.org](mailto:papers@g2aging.org). We also ask users to include the following acknowledgement in their written work: “This analysis uses data or information from the Harmonized MHAS dataset and Codebook, Version C as of September 2022 developed by the Gateway to Global Aging Data in collaboration with the MHAS research team. The development of the Harmonized MHAS was funded by the National Institute on Aging (R01 AG030153). The Harmonized MHAS data files and documentation are public use and available at [www.MHASweb.org](http://www.MHASweb.org). The MHAS (Mexican Health and Aging Study) receives support from the National Institutes of Health/National Institute on Aging (R01 AG018016) in the United States and the Instituto Nacional de Estadística y Geografía (INEGI) in Mexico. For more information about the Harmonization project, please refer to [www.g2aging.org](http://www.g2aging.org).”

## MHAS Version and Acknowledgment

This document uses data from the MHAS datasets as of July 2020. The MHAS (Mexican Health and Aging Study) is partly sponsored by the National Institutes of Health/National Institute on Aging (grant number NIH R01AG018016) in the United States and the Instituto Nacional de Estadística y Geografía (INEGI) in Mexico. Data files and documentation are public use and available at [www.MHASweb.org](http://www.MHASweb.org).

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# What's New in Version C of the Harmonized MHAS?

Version C incorporates the latest released version of MHAS data, and adds several new variables. It contains 26,839 observations or rows. It is a Respondent-level file so each row represents a unique Respondent. It also makes adjustments and corrections.

We have added the following variables to the file:

## Health:

- We added new variables indicating any difficulty for existing summary measures in all available waves: **RwADLWAA**, **RwADLAA**, **RwADLAA\_M**, **RwADLFIVEA**, **RwADLTOTA\_M**, **RwIADLFOURA**, **RwMOBILAA**, **RwLGMUSAA**, **RwGROSSAA**, **RwFINEAA**, **RwMOBILSEVA**, **RwUPPERMOBA**, and **RwLOWERMIBA**.
- We added new summary measures indicating difficulty with other functional limitations originally proposed by Nagi (1976): **RwNAGI10**, **RwNAGI10M**, **RwNAGI10A**, **RwNAGI8**, **RwNAGI8M**, and **RwNAGI8A**.

## Healthcare Utilization and Insurance:

- We added individual out-of-pocket expense and flag variables for all available waves: **RwOOPHOS1Y**, **RwOOPHOSF1Y**, **RwOOPFHHO1Y**, **RwOOPFHHOF1Y**, **RwOOPDEN1Y**, **RwOOPDENF1Y**, **RwOOPOSRG1Y**, **RwOOPOSRGF1Y**, **RwOOPDOC1Y**, and **RwOOPDOCF1Y**.

## Cognition:

- We added variables indicating the proxy's rating of different aspects of the respondent's cognition, and incorporating flag variables and a summary score in all available waves: **RwIQSCORE1 – RwIQSCORE16**, **RwFIQSCORE1 – RwFIQSCORE16**, **RwJORMSCORE**, **RwPRMEM**, **RwPRCHMEM**, **RwRJUDG**, **RwRORGNZ**, **RwLOST**, **RwWANDER**, **RwALONE**, **RwHALUC**, **RwOANGRY**, **RwOSLEEP**, **RwODNGR**, **RwOPACE**, **RwOPLOT**, and **RwOALCHL**.

## Financial and Housing Wealth:

- We added **HwHOWNRNT** in all available waves, which indicates whether the respondent and their spouse own or rent their residence or have another arrangement.

## Family Structure:

- We added **RwRELGIMP** in all available waves, indicating the importance of religion to the respondent.

## Assistance and Caregiving:

- We added **RwGCARESCK** and **RwGCARESCKD\_M** in all available waves, indicating whether and the frequency with which the respondent cared for a sick or disabled adult.

## Psychosocial:

- We added **RwSATLIFE** starting in Wave 3, indicating the respondent's rating of their satisfaction with life.
- We added **RwCANTRIL** in Wave 2, indicating the respondent's rating of their position in comparison to all other people in Mexico.

We have made the following adjustments, improvements, and corrections to the data and documentation:

## Demographics:

- We corrected an error in **R4IWSTAT** in which people who had passed away during Wave 3 were assigned a value of 0 and are now assigned a value of 6.
- We corrected **RwIWY** in Waves 3 and 4 to assign plain missing (.) instead of special missing .m for those who did not participate in the given wave.

**Health:**

- We adjusted the coding for the following variables in Wave 4 to bring forward reports from previous waves, and removed overassignments of 1 values for respondents who did not participate in the given wave in Waves 2 through 4: **RwHIBPE**, **RwDIABE**, **RwCANCRE**, **RwLUNGE\_M**, and **RwARTHRE**.
- We adjusted the coding for **RwSTROKE** to remove overassignments of 1 values for respondents who did not participate in the given wave in Waves 2 through 4.
- We adjusted the coding for **RwSMOKEF** to remove the assignment of special missing value .p in Waves 1 through 4.

**Healthcare Utilization and Insurance:**

- We renamed **RwOOPMD** to **RwOOPMD1Y** to better account for the time period of the expenses, and adjusted it in Waves 2 through 4 to incorporate dental expenses, including newly available imputed values for Wave 2.
- We corrected **RwCOVR\_M** and **RwCOVS\_M** in Waves 3 and 4 to refer to Pemex/Defensa/Marina instead of Seguro Popular for some special missing .d and .r and 0 assignments.

**Cognition:**

- We changed the label for **RwFBWC20\_M** to properly indicate backwards counting instead of drawing.

**Income:**

- We adjusted the coding for **RwIFPENT** in Wave 4 to correctly indicate if the total income from total public pensions was constructed using imputed variables.

**Family Structure:**

- We replaced .n special missing values with 0 values for **RwTPANY** and **RwTPAMT** in all available waves for consistency with other Harmonized datasets.
- We replaced .k special missing values with 0 values for **HwFCANY**, **HwFCAMT**, **HwTCANY**, and **HwTCAMT** in all available waves for consistency with other Harmonized datasets.
- We adjusted **HwKCNT** in all available waves so that contact 52 times a year is counted as weekly, rather than 30 times a year.
- We corrected **RwRFCNTX** and **RwRFCNT** to use the raw variables indicating contact with friends and relatives rather than those indicating caring for sick or disabled adults, and reorganized the categories for **RwRFCNTX** to be in order of frequency.
- We adjusted **RwSOCACT\_M** and **RwSOCWK** to include the additional categories of caring for sick or disabled adults and activities with children for consistency with other Harmonized datasets. We also reorganized the categories for **RwSOCACT\_M** to be in order of frequency.
- We adjusted **R4DAU** to properly account for the number of daughters in the follow-up sample.
- We adjusted the calculation of **RwDCHILD** to account for all possible reports of deceased children.

**Employment History:**

- We have adjusted **RwJCTEN** to include a special missing .i value if the respondent's job tenure is greater than their current age in all available waves.
- We have adjusted **RwJLASTY** to include a special missing .i value if the year the respondent last worked is greater than the interview year in Waves 3 through 5.

**Assistance and Caregiving:**

- We corrected a merging error in Wave 2 that resulted in almost no occurrences for all informal and formal help variables.

- We adjusted the coding for the assignment of spouse helpers in all waves, but which particularly impacts the values of **RwRASCARE**, **RwRISCARE**, **RwRSCARE**, and their associated variables in Wave 3.

**Stress:**

- We changed the special missing .f values to special missing .n values for all friend, child, and spouse support variables in all waves for consistency with other Harmonized datasets.
- We changed RwCHDEATHE to **HwCHDEATHE** and based it off of the count of deceased children rather than questions from the fertility section of the interview.

**Psychosocial:**

- We reversed the coding for **RwSATLIFEZ** so that lower values now indicate agreement and higher values indicate disagreement based on a forthcoming user guide for the creation of Harmonized Subjective Well-Being variables.



# 1. Introduction and Overview

This report documents the Harmonized MHAS data files, a streamlined collection of variables derived from the Mexican Health and Aging Study (MHAS). The MHAS is a panel survey of people aged 50 and over and their partners, living in private dwellings in both urban and rural areas in Mexico. The study was designed to prospectively evaluate the impact of disease on the health, function and mortality of adults. The overall goal of the study is to examine the aging process, and the disease and disability burden in a large representative panel of older Mexicans, using a wide socioeconomic perspective. The study protocols and survey instruments are highly comparable to the U.S. Health and Retirement Study (HRS). The data files and documentation are available free of charge at the study website [www.MHASweb.org](http://www.MHASweb.org). For more details on the study background and design, see Wong, Michaels-Obregon, and Palloni (2017).

The initial MHAS sample was drawn from the 2000 National Survey of Employment (ENE), carried out by the INEGI (Instituto Nacional de Estadística y Geografía) in Mexico. The first wave of the MHAS was conducted in the summer of 2001. This initial sample included 15,186 respondents aged 50 and over and their spouses, regardless of age, as of the year 2001. The second wave of MHAS followed-up with the Wave 1 respondents and was conducted in the summer of 2003. The second wave of MHAS included follow-ups with 13,431 respondents from the initial sample, 273 new respondents including new spouses, and 546 next-of-kin interviews regarding deceased participants. The 2012 survey was conducted in the fall of 2012, it followed-up the original MHAS sample and included a refreshment sample. This refreshment sample included persons 50 to 60 years old, selected from the 2012 National Occupation and Employment Survey (ENOE). The third wave included 9,634 follow-up respondents and 5,912 new respondents including the refreshment sample and new spouses, and 2,742 next-of-kin interviews. The fourth wave of the MHAS, in 2015, included the follow-up of 16,983 subjects interviewed in the previous waves, 306 new spouses, and 697 new subjects selected in 2012 for the refresher sample but without an interview in Wave 3, and 1,209 next-of-kin interviews. The fifth wave of the MHAS, in 2018, included the follow-up of 12,305 subjects interviewed in the previous waves, 5,725 new respondents including the refreshment sample and new spouses, and 1,135 next-of-kin interviews. The MHAS is a collaborative effort among researchers from the University of Texas Medical Branch (UTMB), the Instituto Nacional de Estadística y Geografía (INEGI, Mexico), the University of Wisconsin, the Instituto Nacional de Geriátría (INGER, Mexico), the Instituto Nacional de Salud Pública (INSP, México), and University of California Los Angeles (UCLA).

The data include any individual interviewed at least once. This includes selected subjects, spouses regardless of their age, new spouses of selected subjects, and former spouses of the selected subject.

The MHAS data are contained in several files. The Harmonized MHAS data file incorporates data from the core interview data, the master follow-up file, household roster data, and next-of-kin data. It does not include any data which is not public release.

Documentation of the MHAS methodology can be found in Mexican Health and Aging Study 2018, Methodological Document (2018).

## 1.1 Gateway to Global Aging Data

The Health and Retirement Study (HRS) has achieved remarkable scientific success, as demonstrated by an impressive number of users, research studies, and publications using it. Its success has generated substantial interest in collecting similar data as population aging has progressed in every region of the world.

The result has been a number of surveys designed to be comparable with the HRS: the Mexican Health and Aging Survey (MHAS), the English Longitudinal Study of Ageing (ELSA), the Survey of Health, Ageing and Retirement in Europe (SHARE), the Korean Longitudinal Study of Aging (KLoSA), the Japanese Study on Aging and Retirement (JSTAR), the Irish Longitudinal Study on Ageing (TILDA), the China Health and Retirement Longitudinal Study (CHARLS), Health and Aging in Africa: A Longitudinal Study of an INDEPTH Community in South Africa (HAALSI), the Brazilian Longitudinal Study of Ageing (ELSI), Healthy Ageing in Scotland (HAGIS), the Northern Ireland Cohort Longitudinal Study of Ageing (NICOLA), the Malaysia Ageing and Retirement Survey (MARS), and the Longitudinal Aging Study in India (LASI). The overview of this family of surveys, including their research designs, samples, and key domains can be found in Lee et al. (2019).

As these surveys were partly designed with harmonization as a goal, they provide remarkable opportunities for cross-country studies. The value of comparative analyses, especially the opportunities they offer for learning lessons resulting from policies adopted elsewhere, is widely recognized. Yet there are only a limited number of empirical studies exploiting such opportunities. This is partly due to the difficulty associated with learning multiple surveys and the policies and institutions of each country.

Identifying comparable questions across surveys is the first step toward cross-country analyses. The Gateway to Global Aging Data (Gateway) helps users understand and use these large-scale population surveys on health and retirement. The Gateway includes several tools to facilitate cross-national health and retirement research. It includes a digital library of survey questions for all participating surveys. Its search engine enables users to find relevant survey questions. The Gateway also includes a concordance with information comparing measures within and across surveys over time. Using these tools, researchers can identify all questions related to particular key words or within a domain. The Gateway also includes population and sub-population estimates for key harmonized variables and presents them in graphs and tables that can be downloaded.

The Gateway can be accessed at <https://g2aging.org>. For more information about using the Gateway visit the Help page. For more information about obtaining the Harmonized MHAS from MHAS or downloading the Stata file used to create the Harmonized MHAS using the Gateway see "Chapter 4. Distribution and Technical Notes."

## 1.2 Unit of Observation

We distinguish between two units of observation: individual and household. A "household" in this sense means "single individual, or individual with his/her spouse", whatever applicable.

This is the same design as the HRS, where an age-eligible individual is sampled and then this individual and his or her spouse or partner is interviewed, but no other household members, even if they are age-eligible. Thus, in the HRS and in MHAS, there is no distinction between a "couple" and a "household".

MHAS provides a limited amount of information about household members who are not interviewed. The household respondent provides information on all household members including, age, sex, and marital or

partner status. Only individuals over 50 and their spouses or partners are selected for a subsequent interview. In our files, we do not include non-respondents, and thus in particular we do not include the information about household members who were not eligible to be interviewed.

### 1.3 Data File Structure

The Harmonized MHAS data are contained in a single file which includes the first five waves of MHAS. The data are stored in a “fat format” where each observation represents one respondent. There are three types of variables for the individual record: “R” respondent variables, “S” spouse variables, and “H” household variables. Respondent variables represent the respondent of the individual record. Spouse variables represent the spouse of the respondent of the individual record, if there is a spouse. Household variables represent the household of the individual record which is the respondent and their spouse, if there is a spouse. The value of household variables is the same for both a respondent and their spouse. If the respondent does not have a spouse the household variables represent just the respondent of the individual record.

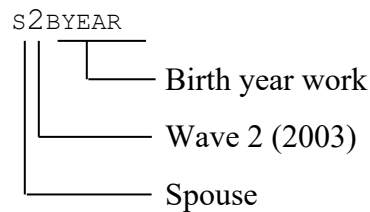
The household and person identification variables changed between different waves of the MHAS and changed in different files of the same wave of MHAS. In Wave 1, households are identified by the unique household identification *unhhid* (same as *cunicah*) and persons in the study within the household are identified by *codent01* (same as *ps3*). In Wave 2, households are uniquely identified by the combination of *unhhid* (or *cunicah*) and *acthog* – a sub-household id that indicates changes in the household between Waves 1 and 2. Also, individuals are uniquely identified by *codent03* (same as *ent2*). In Wave 3, households are uniquely identified by the combination of *unhhid* (or *cunicah*) and *subhog\_12* – a sub-household id that indicates changes in the household between Waves 2 and 3. In Wave 4, households are uniquely identified by the combination of *unhhid* (or *cunicah*) and *subhog\_15* – a sub-household id that indicates changes in the household between Waves 3 and 4. In Wave 5, households are uniquely identified by the combination of *unhhid* (or *cunicah*) and *subhog\_18* – a sub-household id that indicates changes in the household between Waves 4 and 5. Persons are uniquely identified by *np*. This file may be merged with other MHAS data using the combination of survey-specific household and person identification variables available in the MHAS Master Follow-up File, available at [www.MHASweb.org](http://www.MHASweb.org).

### 1.4 Variable Naming Convention

With few exceptions, variable names in the Harmonized MHAS Data follow a consistent pattern. The first character indicates whether the variable refers to the reference person (“r”), spouse (“s”), or household (“h”).<sup>1</sup> The second character indicates the wave to which the variable pertains: “1”, “2”, “3”, “4”, “5”, or “A”. The “A” indicates “all,” i.e., the variable is not specific to any single wave. An example is *rabyear*, the birth year of the respondent. The remaining characters describe the concept that the variable captures. For example:

---

<sup>1</sup> The reference person need not be the person who responded to the question. It is the person whose information is central to the data file observation.



Variable `s2byear` captures the birth year of the spouse of the reference person. The name of the variable does not indicate who provided the information. For example, the spouse's birth year may have been reported by the spouse himself or herself, or it may have been reported by the reference person as a proxy. The MHAS obtains many variables, particularly on financial and family matters, reported by a proxy.

In the text below, we may refer to variables such as `SwBYEAR` for example, without specifying the wave. This reference points at the group of variables `s1byear`, `s2byear`, `s3byear`, `s4byear`, `s5byear`.

Variable labels also follow a consistent pattern. The first characters denote the name of the variable, followed by a colon. Then the wave to which the variable pertains (w1, w2, w3, w4, or w5) follows. The remainder of the label describes the concept that the variable captures. For example, the variable label of `s2byear` is:

`S2BYEAR:W2 S Birth year`

It may seem duplicative to include the name of the variable and the wave in the variable label. However, statistical packages often suppress the variable name and instead use its label in the presentation of results.

Variable names in the Harmonized MHAS are generally based on the variable name used in the RAND HRS or Harmonized HRS for the same measure. Measures which are exactly or near-exactly comparable between the Harmonized MHAS and RAND HRS or Harmonized HRS use the exact same name. For instance `RABYEAR` is the variable name for the respondent birth year in both the Harmonized MHAS as well as the RAND HRS. If the Harmonized MHAS measure is deemed only somewhat comparable with the RAND HRS or Harmonized HRS version of that measure, the variable name in the Harmonized MHAS will often end in “\_M.” This variable name suffix indicates some MHAS-specific difference with the RAND HRS or Harmonized HRS version of this measure. For instance the Harmonized MHAS variable labor force status is named `RwLBRF_M` while the RAND HRS variable for respondent cohort is named `RwLBRF`. The reason for this difference in variable name is that the MHAS used a different set of labor force statuses than the HRS. Other reasons for Harmonized MHAS-specific variable names include: differences in survey questions, differences in survey routing, and whether both sets of variables use imputed values. Harmonized MHAS-specific variable names are used to notify the user that there are substantial differences between the RAND HRS or Harmonized HRS and Harmonized MHAS measure and clean harmonization between these measures is not possible.

The Harmonized MHAS includes some variables without Harmonized MHAS-specific variable names even though the Harmonized MHAS measure is significantly different from the RAND HRS or Harmonized HRS measure of the same name. In particular wealth and income measures in the Harmonized MHAS do not use Harmonized MHAS-specific variable names even though wealth and income measures in the Harmonized MHAS are expressed in nominal pesos while income and wealth measures in the RAND HRS are always

expressed in nominal dollars. Users should always check the “Differences with RAND HRS/Harmonized HRS” section of each measure before comparing any Harmonized MHAS measure to the RAND HRS or Harmonized HRS version of the same measures or any other Harmonized Dataset version of the same measure.

## 1.5 Missing Values, Nonresponse and Imputations

Variables may contain missing values for several reasons. SAS, Stata, and SPSS offer the capability to distinguish multiple types of missing values, and we have attempted to record as much information as possible. Generally, the codes adhere to the classification in Table 1.

**Table 1. Missing Codes**

| Code | Reason for missing                                      |
|------|---|
| .    | Reference person did not respond to this wave           |
| .a   | Age ineligible  |
| .d   | Don't know  |
| .i   | Invalid value   |
| .k   | No kids   |
| .m   | Other missing   |
| .r   | Refused   |
| .s   | Information not available due to skip patterns          |
| .u   | Reference person is not married (for spouse variables)  |
| .v   | Spouse did not respond this wave (for spouse variables) |

The coding scheme varies across variables. Consult the Data Codebook for details on individual variables.

Item nonresponse for many variables is handled by imputation. MHAS uses a multiple imputation technique, involving the regression sequencing method with a SAS-based software routine (IVEware) developed by researchers at the Survey Methodology Program, Survey Research Center, Institute for Social Research at the University of Michigan. Imputations were completed for economic variables such as income, assets, health care expenditures, and monetary help received. Please see the [2001](#), [2003](#), [2012](#), [2015](#), and [2018](#) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

## 1.6. Availability of Stress Measures

In 2015, Drs. Elissa Epel and Wendy Mendes partnered with the Gateway to Global Aging Data team to form the Stress Measurement Network, funded by the National Institute on Aging (NIA/NIH R24 AG048024). The goal of the Stress Network is to promote better theory and measurement of psychosocial stress in population-based studies. One of the specific aims is to facilitate the use of stress measures in population based studies, which was led by Drs. Tara Gruenewald, Alexandra Crosswell, and Jinkook Lee. It is hoped that identification of such measures will facilitate examination of the association of stressor conditions with cognitive-affective and

physiological distress experience and poor psychological and physical health states hypothesized to follow from stressor exposure.

As a result of the work of the NIA Stress Measurement Network, the Harmonized MHAS provides harmonized stress measures beginning in 2001, MHAS Wave 1, and through 2018, MHAS Wave 5. The majority of stress measures are available between MHAS Waves 2 and 3. The stress measures are collected in the core interview, both in the Social Support and Satisfaction module and in the Fertility module.

MHAS queried information on discrete events that can be categorized as major life stressors or traumatic events (e.g., death of a child). MHAS included 4 measures of social strain and relationship support quality. Common indicators of social strain include assessments of social relationship targets as having their feelings understood, the ability to confide in others, to rely on them for serious problems, and being disappointed when counting on others.

For more specific information about all stress measures included in the MHAS, as well as comparable stress measures in HRS sister studies, please refer to the Measures of Stress in the Health and Retirement Study (HRS) and the HRS Family of Studies (2020) user guide available from <https://g2aging.org/index.php?section=documentation>.

## 2. Wealth and Income Variables

### 2.1 Units of Observation and financial respondent

It is important to distinguish the unit of observation for MHAS financial measures because financial questions can be asked about the individual, the spouse, the individual and their spouse, and the full household.

For married or partnered couples, MHAS asks income and asset questions at the individual level (respondent or spouse) or at the couple level.

Pension questions are always asked to the financial respondent at the individual level.

The total consumption question is asked to the financial respondent about the full-household.

For harmonization purposes, we need to use the same unit of observation in the different harmonized data sets. For this reason, we combine the individual-level asset and income variables into couple-level variables for those variables for which the RAND HRS provides couple-level variables.

### 2.2. Currency

All MHAS financial variables are expressed in nominal pesos.

MHAS asset questions are asked about current asset values.

MHAS income questions use more than one type of timing. Some income questions ask for total income in the last 12 months and some questions ask for the average monthly income during the last 12 months. Even though MHAS uses different timings when asking income questions, for Harmonization purposes, all financial variables in the Harmonized MHAS are expressed in yearly equivalents. These income variables expressed in yearly equivalents can be compared to the RAND HRS income measures.

### 2.3. Differences between Harmonized MHAS and RAND HRS or Harmonized HRS

Harmonized MHAS is intended to be as comparable to the RAND HRS and Harmonized HRS as possible. See Bugliari et al. (2021) for the documentation of the RAND HRS and Wilkens et al. (2022) for the documentation of the Harmonized HRS. However, there inevitably remain some differences between the two data sets. In the codebook, notable differences in definition, construction, or question text between the variables in Harmonized MHAS and the corresponding variables in the RAND HRS or Harmonized HRS are indicated on a per variable basis. For a full list of those RAND HRS or Harmonized HRS measures which are not available in the Harmonized MHAS see <http://g2aging.org>.

Furthermore, the imputation flags in the Harmonized MHAS are different from the imputation flags in the RAND HRS. This is because the imputation flags in the RAND HRS categorize the imputed values by the amount of information used in the imputation procedure (e.g. whether information from an unfolding bracket

sequence, whether bracket was complete or incomplete bracket). The imputation flags in the Harmonized MHAS only identify whether the values was imputed or not



## 3. Structure of Codebook

The Data Codebook contains the codebook documenting all variables in the Harmonized MHAS Data. This section explains how to interpret the codebook entries. The figure below shows a typical codebook page; the numbers in circles correspond to comments below.

| Self-Report of Health ← 1 |          |           |             |           |       |
|---------------------------|----------|-----------|-------------|-----------|-------|
| Wave                      | Variable | Label     |             |           | Type  |
| 2                         | R1SHLT   | R1SHLT:W1 | Self-report | of health | Categ |
| 2                         | R2SHLT   | R2SHLT:W2 | Self-report | of health | Categ |
| 3                         | R3SHLT   | R3SHLT:W3 | Self-report | of health | Categ |
| 4                         | R4SHLT   | R4SHLT:W4 | Self-report | of health | Categ |
| 5                         | R5SHLT   | R5SHLT:W5 | Self-report | of health | Categ |
| 1                         | S1SHLT   | S1SHLT:W1 | Self-report | of health | Categ |
| 2                         | S2SHLT   | S2SHLT:W2 | Self-report | of health | Categ |
| 3                         | S3SHLT   | S3SHLT:W3 | Self-report | of health | Categ |
| 4                         | S4SHLT   | S4SHLT:W4 | Self-report | of health | Categ |
| 5                         | S5SHLT   | S5SHLT:W5 | Self-report | of health | Categ |

| 5 → Descriptive Statistics |       |      |         |         |         |
|----------------------------|-------|------|---------|---------|---------|
| Variable                   | N     | Mean | Std Dev | Minimum | Maximum |
| R1SHLT                     | 14147 | 3.69 | 0.85    | 1.00    | 5.00    |
| R2SHLT                     | 12521 | 3.78 | 0.82    | 1.00    | 5.00    |
| R3SHLT                     | 14445 | 3.66 | 0.85    | 1.00    | 5.00    |
| R4SHLT                     | 13847 | 3.73 | 0.83    | 1.00    | 5.00    |
| R5SHLT                     | 15783 | 3.61 | 0.83    | 1.00    | 5.00    |
| S1SHLT                     | 9983  | 3.66 | 0.85    | 1.00    | 5.00    |
| S2SHLT                     | 8739  | 3.76 | 0.81    | 1.00    | 5.00    |
| S3SHLT                     | 9864  | 3.64 | 0.84    | 1.00    | 5.00    |
| S4SHLT                     | 9181  | 3.71 | 0.83    | 1.00    | 5.00    |
| S5SHLT                     | 7073  | 3.66 | 0.81    | 1.00    | 5.00    |

| 6 → Categorical Variable Codes |        |        |        |        |        |
|--------------------------------|--------|--------|--------|--------|--------|
| Value-----                     | R1SHLT | R2SHLT | R3SHLT | R4SHLT | R5SHLT |
| .d:DK                          | 1      | 4      | 1      | 3      | 1      |
| .m:Missing                     | 4      |        |        |        |        |
| .p:Proxy interview, not asked  | 1032   | 1178   | 1275   | 929    | 1328   |
| .r:Refuse                      | 2      | 1      | 2      |        | 2      |
| 1.Excellent                    | 271    | 189    | 363    | 342    | 445    |
| 2.Very good                    | 627    | 396    | 646    | 465    | 796    |
| 3.Good                         | 4495   | 3559   | 4303   | 3710   | 4670   |
| 4.Fair                         | 6585   | 6204   | 7316   | 7347   | 8381   |
| 5.Poor                         | 2169   | 2173   | 1817   | 1983   | 1491   |
| Value-----                     | S1SHLT | S2SHLT | S3SHLT | S4SHLT | S5SHLT |
| .d:DK                          | 1      | 4      | 1      | 1      | 1      |
| .m:Missing                     | 3      |        |        |        |        |
| .p:Proxy interview, not asked  | 660    | 821    | 726    | 470    | 563    |
| .r:Refuse                      | 1      |        | 1      |        | 1      |
| .u:Unmar                       | 4205   | 4009   | 4782   | 4847   | 5227   |
| .v:SP NR                       | 333    | 131    | 349    | 280    | 501    |
| 1.Excellent                    | 195    | 122    | 251    | 232    | 179    |
| 2.Very good                    | 464    | 281    | 467    | 325    | 312    |
| 3.Good                         | 3316   | 2583   | 2987   | 2513   | 1932   |
| 4.Fair                         | 4600   | 4346   | 5017   | 4905   | 3967   |
| 5.Poor                         | 1408   | 1407   | 1142   | 1206   | 683    |

### 7 → How Constructed

RwSHLT is the respondent's self-reported general health status using the following scale: 1 for Excellent, 2 for Very good, 3 for Good, 4 for Fair, and 5 for Poor. When respondents don't know or refuse to answer, RwSHLT is assigned special missing values .d or .r, respectively. Other missing responses are assigned special missing .m. Also, RwSHLT is set to the special missing .p if the current interview was completed by proxy. RwSHLT is assigned plain missing (.) if the respondent did not participate in the current wave.

The SwSHLT variables are taken from the Wave 'w' spouse's self-reported RwSHLT variables. In addition to the special missing codes used in RwSHLT, SwSHLT employs the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

### 8 → Cross-Wave Differences in MHAS

No differences known.

### 9 → Differences with the RAND HRS/Harmonized HRS

No differences known.

### 10 → MHAS Variables Used

|         |  |
|---------|--|
| Wave 1: |  |
| C1      | quality of health                      |
| Wave 2: |  |
| C1      | health status                          |
| Wave 3: |  |
| C1_12   | Global self-reported quality of health |
| Wave 4: |  |
| C1_15   | respondent's self-reported health      |
| Wave 5: |  |
| C1_18   | R's self-reported health               |

**1** *Title:* The variables are documented in groups according to the concept that they measure. For example, there are ten variables related to self-reported health, corresponding to five waves and respondent/spouse. The title is often followed by a short description of the concept that is captured.

**2** *Variable Names:* This entry shows the waves of variables in the group. Not all waves are present for all variables.

**3** *Variable Labels:* This entry shows the Stata variable labels. As discussed above, the labels typically include the name of the variable, the file on which it is present, and a description of its contents.

**4** *Variable Type:* This entry indicates the type of variable. It may be continuous (Cont), categorical (Categ), or character (Char).

**5** *Descriptive Statistics:* This entry shows descriptive statistics on each variable. They include the number of nonmissing values, the mean, standard deviation, minimum value, and maximum value.

- 6 *Categorical Value Codes:* This entry shows the value label codes. These are only relevant for categorical variables. The first character(s) of the value labels indicate the value to which each label has been assigned. For example, value “1” is mapped into “1. Excellent” (not just “Excellent”). The entry also indicates which labels are assigned to which variables, and shows frequency tabulations for all categorical variables.
- 7 *How Constructed:* This entry provides background on the manner in which variables were constructed.
- 8 *Cross-Wave Differences in MHAS:* This entry briefly describes differences in question wording or content between interview waves.
- 9 *Differences with the RAND HRS/Harmonized HRS:* This entry describes any differences between the RAND HRS or Harmonized HRS version of the variable and the Harmonized MHAS version of the variable. It is imperative these differences are understood when using harmonized measures.
- 10 *MHAS Variables Used:* This entry provides the names and labels of raw MHAS variables that were used to construct the new variables.

## 4. Distribution and Technical Notes

The Harmonized MHAS Data file is distributed by the Mexican Health and Aging Study. The Harmonized MHAS Data file is made available free of charge but only to users who register with MHAS and agree to the standard conditions. For more information on obtaining access to the MHAS data visit:

<http://www.mhasweb.org/DataDocumentationNew.aspx> and select the Data tab on the top, and then Constructed/Harmonized on the right side of the page.

This is version **C** of the Harmonized MHAS Data.

A copy of the Stata programs used to create the Harmonized MHAS and a copy of this Harmonized MHAS Codebook can be obtained on the Gateway to Global Aging Data (<http://g2aging.org>) under the Download page or from the MHAS website (<http://www.mhasweb.org>).

## 5. Data Codebook

**Section A: Demographics, Identifiers, and Weights**

Person Specific Identifier

| Wave | Variable  | Label   | Type  |
|------|-----------|---|-------|
| 1    | CODENT01  | Person identification code 2001 (=ps3)                      | Categ |
| 1    | CODENT03  | Person identification code 2003 (=ent2)                     | Categ |
| 1    | PS3       | Person identification code 2001 (=codent01)                 | Cont  |
| 1    | ENT2      | Person identification code 2003 (=codent03)                 | Cont  |
| 1    | NP        | Person Number/ Numero de Persona                            | Cont  |
| 1    | UNHHIDNP  | UNHHIDNP: Unique Person Identifier (HH ID + Person Number)/ | Cont  |
| 1    | RAHHIDNP  | RAHHIDNP: Unique Person Identifier (HH ID + Person Number)/ | Char  |
| 1    | TIPENT_01 | Type of interview 2001                                      | Categ |
| 1    | TIPENT_03 | Type of interview 2003                                      | Categ |
| 1    | TIPENT_12 | Type of interview 2012                                      | Categ |
| 1    | TIPENT_15 | Type of interview 2015                                      | Categ |
| 1    | TIPENT_18 | Type of interview 2018                                      | Categ |

Descriptive Statistics

| Variable  | N     | Mean      | Std Dev   | Minimum | Maximum    |
|-----------|-------|-----------|-----------|---------|------------|
| CODENT01  | 15365 | 1.36      | 0.48      | 1.00    | 2.00       |
| CODENT03  | 15230 | 1.37      | 0.50      | 1.00    | 4.00       |
| PS3       | 15365 | 1.36      | 0.48      | 1.00    | 2.00       |
| ENT2      | 15230 | 1.37      | 0.50      | 1.00    | 4.00       |
| NP        | 26839 | 13.79     | 4.85      | 10.00   | 44.00      |
| UNHHIDNP  | 26839 | 945986.39 | 557672.68 | 110.00  | 2021820.00 |
| TIPENT_01 | 15186 | 12.03     | 2.62      | 11.00   | 22.00      |
| TIPENT_03 | 13704 | 12.21     | 2.92      | 11.00   | 22.00      |
| TIPENT_12 | 15723 | 1.54      | 0.70      | 1.00    | 4.00       |
| TIPENT_15 | 14779 | 1.17      | 0.53      | 1.00    | 4.00       |
| TIPENT_18 | 17114 | 1.44      | 0.67      | 1.00    | 4.00       |

Categorical Variable Codes

|                             |          |
|-----------------------------|----------|
| Value-----                  | CODENT01 |
| 1.Selected person           | 9795     |
| 2.Spouse of selected person | 5570     |
| Value-----                  | CODENT03 |
| 1.Selected person in 2001   | 9653     |

|  |  |      |
|--|--|------|
| 2.Spouse of selected person in 2001      |  | 5477 |
| 3.New spouse of selected person in 2001  |  | 93   |
| 4.New spouse-of-spouse of selected perso |  | 7    |

|                             |           |
|-----------------------------|-----------|
| Value-----                  | TIPENT_01 |
| 11.Direct, first interview  | 9424      |
| 12.Direct, second interview | 4730      |
| 21.Proxy, first interview   | 438       |
| 22.Proxy, second interview  | 594       |

|                             |           |
|-----------------------------|-----------|
| Value-----                  | TIPENT_03 |
| 11.Direct, first interview  | 8465      |
| 12.Direct, second interview | 4061      |
| 21.Proxy, first interview   | 457       |
| 22.Proxy, second interview  | 721       |

|                                |           |
|--------------------------------|-----------|
| Value-----                     | TIPENT_12 |
| 1.Direct, follow-up interview  | 8868      |
| 2.Direct, new sample interview | 5580      |
| 3.Proxy, follow-up interview   | 959       |
| 4.Proxy, new sample interview  | 316       |

|                                |           |
|--------------------------------|-----------|
| Value-----                     | TIPENT_15 |
| 1.Direct, follow-up interview  | 13254     |
| 2.Direct, new spouse interview | 596       |
| 3.Proxy, follow-up interview   | 884       |
| 4.Proxy, new spouse interview  | 45        |

|                                |           |
|--------------------------------|-----------|
| Value-----                     | TIPENT_18 |
| 1.Direct, follow-up interview  | 11183     |
| 2.Direct, new sample interview | 4603      |
| 3.Proxy, follow-up interview   | 1122      |
| 4.Proxy, new sample interview  | 206       |

## How Constructed

At baseline, the unique within-household person ID CODENT01 (also equal to PS3) is assigned to identify the selected individual and their spouses inside the household. In Wave 2, a new unique within-household person ID CODENT03 (also equal to ENT2) was created to identify the respondents inside the household. In addition to the 2 codes of CODENT01 from Wave 1, two more codes were added to CODENT03 to identify the new spouse of the selected person in Wave 1 and the new spouse of the spouse in Wave 1. Together, CUNICAH (also equal to UNHHID) and CODENT01 uniquely identify each individual at baseline, while CUNICAH and CODENT03 identify each individual at Wave 2.

Starting in 2012, a new variable NP was created to uniquely identify each person. Together, CUNICAH and NP uniquely identify each individual in the MHAS data. UNHHIDNP is the numeric value of the combination of CUNICAH and NP, and uniquely identify each respondent. The variable is set to CUNICAH\*100+NP. Also, RAHHIDNP is the 7-digit character version of the UNHHIDNP.

TIPENT\_01, TIPENT\_03, TIPENT\_12, TIPENT\_15, and TIPENT\_18 indicate the interview type for the corresponding wave and are necessary to merge certain MHAS data files in conjunction with other identifiers. TIPENT\_01 indicates the interview type for Wave 1 and is coded as follows: 11.Direct, first interview, 12.Direct, second interview, 21.Proxy, first interview, 22.Proxy, second interview. TIPENT\_03 indicates the interview type for Wave 2 and is coded as follows: 11.Direct, first interview, 12.Direct, second interview, 21.Proxy, first interview, 22.Proxy, second interview, 31.Next-of-kin interview, first interview, 32.Next-of-kin interview, second interview, 33.Next-of-kin interview, third interview, 42.Non-response, second interview. TIPENT\_12, TIPENT\_15, and TIPENT\_18 indicate the interview type for Waves 3, 4, and 5 and are coded as follows: 1.Direct, follow-up interview, 2.Direct, new sample interview, 3.Proxy, follow-up interview, 4.Proxy, new sample interview, 5.Next-of-kin. TIPENT\_15 describes options 2 and 4 as "new spouse" interviews, whereas TIPENT\_12 and TIPENT\_18 describe options 2 and 4 as "new sample" interviews.

## Cross Wave Differences in MHAS

No differences known.



Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|           |   |
|-----------|---|
| Wave 1:   |   |
| CODENT01  | Person identification code 2001 (=ps3)      |
| CUNICAH   | Clave Unica del Hogar (=unhhid)             |
| PS3       | Person identification code 2001 (=codent01) |
| TIPENT_01 | Type of interview 2001                      |
| Wave 2:   |   |
| ACTHOG    | Update household code 2003                  |
| CODENT03  | Person identification code 2003 (=ent2)     |
| CUNICAH   | Clave Unica del Hogar (=unhhid)             |
| ENT2      | Person identification code 2003 (=codent03) |
| TIPENT_03 | Type of interview 2003                      |
| Wave 3:   |   |
| CUNICAH   | Clave Unica del Hogar (=unhhid)             |
| NP        | Person Number/ Numero de Persona            |
| TIPENT_12 | Type of interview 2012                      |
| Wave 4:   |   |
| CUNICAH   | Clave Unica del Hogar (=unhhid)             |
| NP        | Person Number/ Numero de Persona            |
| TIPENT_15 | Type of interview 2015                      |
| Wave 5:   |   |
| CUNICAH   | Clave Unica del Hogar (=unhhid)             |
| NP        | Person Number/ Numero de Persona            |
| TIPENT_18 | Type of interview 2018                      |

Household Identifier

| Wave | Variable  | Label   | Type  |
|------|-----------|---|-------|
| 1    | UNHHID    | Clave Unica del Hogar (=cunicah)                              | Cont  |
| 1    | CUNICAH   | Clave Unica del Hogar (=unhhid)                               | Cont  |
| 1    | H1HHID    | h1hhid: w1 Unique Household Identifier (HH ID + SubHH) / Num  | Cont  |
| 2    | H2HHID    | h2hhid: w2 Unique Household Identifier (HH ID + SubHH) / Num  | Cont  |
| 3    | H3HHID    | h3hhid: w3 Unique Household Identifier (HH ID + SubHH) / Num  | Cont  |
| 4    | H4HHID    | h4hhid: w4 Unique Household Identifier (HH ID + SubHH) / Num  | Cont  |
| 5    | H5HHID    | h5hhid: w5 Unique Household Identifier (HH ID + SubHH) / Num  | Cont  |
| 1    | H1HHIDC   | h1hhidc: w1 Unique Household Identifier (HH ID + SubHH) / 7-C | Char  |
| 2    | H2HHIDC   | h2hhidc: w2 Unique Household Identifier (HH ID + SubHH) / 7-C | Char  |
| 3    | H3HHIDC   | h3hhidc: w3 Unique Household Identifier (HH ID + SubHH) / 7-C | Char  |
| 4    | H4HHIDC   | h4hhidc: w4 Unique Household Identifier (HH ID + SubHH) / 7-C | Char  |
| 5    | H5HHIDC   | h5hhidc: w5 Unique Household Identifier (HH ID + SubHH) / 7-C | Char  |
| 1    | ACTHOG    | Update household code 2003                                    | Char  |
| 1    | SUBHOG_01 | 2001 sub-household identifier                                 | Categ |
| 1    | SUBHOG_03 | 2003 sub-household identifier                                 | Categ |
| 1    | SUBHOG_12 | 2012 sub-household identifier                                 | Categ |
| 1    | SUBHOG_15 | 2015 sub-household identifier                                 | Categ |
| 1    | SUBHOG_18 | 2018 sub-household identifier                                 | Categ |

Descriptive Statistics

| Variable  | N     | Mean     | Std Dev  | Minimum | Maximum   |
|-----------|-------|----------|----------|---------|-----------|
| UNHHID    | 26839 | 9459.73  | 5576.73  | 1.00    | 20218.00  |
| CUNICAH   | 26839 | 9459.73  | 5576.73  | 1.00    | 20218.00  |
| H1HHID    | 26839 | 94639.56 | 55807.52 | 10.00   | 202279.00 |
| H2HHID    | 26839 | 94642.39 | 55803.53 | 11.00   | 202279.00 |
| H3HHID    | 26839 | 94629.88 | 55785.33 | 11.00   | 202279.00 |
| H4HHID    | 26839 | 94633.30 | 55781.75 | 21.00   | 202279.00 |
| H5HHID    | 26839 | 94625.62 | 55750.28 | 22.00   | 202180.00 |
| SUBHOG_01 | 26839 | 42.30    | 48.96    | 0.00    | 99.00     |
| SUBHOG_03 | 26839 | 45.13    | 47.30    | 0.00    | 99.00     |
| SUBHOG_12 | 26839 | 32.62    | 40.76    | 0.00    | 99.00     |
| SUBHOG_15 | 26839 | 36.04    | 41.19    | 0.00    | 99.00     |
| SUBHOG_18 | 26839 | 28.36    | 41.49    | 0.00    | 99.00     |

Categorical Variable Codes

|                                       |           |
|---------------------------------------|-----------|
| Value-----                            | SUBHOG_01 |
| 00.Baseline HH                        | 15365     |
| 77.HH lost to follow-up/Not contacted | 25        |
| 99.Not part of the study              | 11449     |

| Value-----                            | SUBHOG_03 |
|---------------------------------------|-----------|
| 00.Baseline HH                        | 406       |
| 01.No change, HH contains NP=010      | 13260     |
| 11.New HH contains NP=010             | 243       |
| 12.New HH contains NP=020             | 58        |
| 13.New HH contains NP=011             | 5         |
| 14.New HH contains NP=021             | 1         |
| 31.NP=010 Deceased                    | 528       |
| 32.NP=020 Deceased                    | 278       |
| 77.HH lost to follow-up/Not contacted | 1117      |
| 99.Not part of the study              | 10943     |

| Value-----                                | SUBHOG_12 |
|---|-----------|
| 00.Baseline HH                            | 5754      |
| 01.No change, HH contains NP=010          | 8222      |
| 02.No change, HH contains NP=020          | 117       |
| 11.New HH contains NP=010                 | 832       |
| 12.New HH contains NP=020                 | 766       |
| 13.New HH contains NP=011                 | 20        |
| 14.New HH contains NP=021                 | 3         |
| 31.NP=010 Deceased                        | 1938      |
| 32.NP=020 Deceased                        | 790       |
| 33.NP=011 Deceased                        | 12        |
| 70.NP=010 & NP=020 separated, reunited    | 4         |
| 71.Subsequent NP=010 HH separated, reunit | 2         |
| 77.HH lost to follow-up/Not contacted     | 2790      |
| 88.Deceased before current wave           | 542       |
| 99.Not part of the study                  | 5047      |

| Value-----                             | SUBHOG_15 |
|--|-----------|
| 00.Baseline HH                         | 586       |
| 01.No change, HH contains NP=010       | 12332     |
| 02.No change, HH contains NP=020       | 91        |
| 11.New HH contains NP=010              | 1299      |
| 12.New HH contains NP=020              | 1095      |
| 13.New HH contains NP=011              | 20        |
| 14.New HH contains NP=021              | 7         |
| 15.New HH contains NP=012              | 29        |
| 31.NP=010 Deceased                     | 793       |
| 32.NP=020 Deceased                     | 400       |
| 33.NP=011 Deceased                     | 11        |
| 34.NP=021 Deceased                     | 2         |
| 70.NP=010 & NP=020 separated, reunited | 44        |
| 77.HH lost to follow-up/Not contacted  | 5332      |
| 99.Not part of the study               | 4798      |

| Value-----                             | SUBHOG_18 |
|--|-----------|
| 00.Baseline HH                         | 4913      |
| 01.No change, HH contains NP=010       | 10902     |
| 02.No change, HH contains NP=020       | 74        |
| 11.New HH contains NP=010              | 1394      |
| 12.New HH contains NP=020              | 1266      |
| 13.New HH contains NP=011              | 32        |
| 14.New HH contains NP=021              | 6         |
| 15.New HH contains NP=012              | 19        |
| 19. New HH contains NP=014             | 14        |
| 20.New HH contains NP=024              | 4         |
| 31.NP=010 Deceased                     | 784       |
| 32.NP=020 Deceased                     | 360       |
| 33.NP=011 Deceased                     | 7         |
| 34.NP=021 Deceased                     | 2         |
| 39.NP=014 Deceased                     | 4         |
| 40.NP=024 Deceased                     | 3         |
| 70.NP=010 & NP=020 separated, reunited | 53        |
| 77.HH lost to follow-up/Not contacted  | 675       |
| 99.Not part of the study               | 6327      |

## How Constructed

HwHHID uniquely identifies a household in a given wave. HwHHID consists of the household identifier (CUNICAH=UNHHID)\*10 + the sub-household identifier (SUBHOG\_01 in Wave 1, SUBHOG\_03 in Wave 2, SUBHOG\_12

in Wave 3, SUBHOG\_15 in Wave 4, and SUBHOG\_18 in Wave 5). The household identifier (CUNICAH) is a random sequential 5-digit number that ranges from 00001 to 11000 created to identify each household at baseline. After Wave 3, CUNICAH was also assigned to the new refresher sample. The new sample was assigned a value starting from 11001 to identify each new household.

The set of sub-household variables (SUBHOG\_01, SUBHOG\_03, SUBHOG\_12, SUBHOG\_15, SUBHOG\_18) were created after the third wave and are all included in the 2012, 2015, and 2018 Master Follow-up files. The variables were created to follow the modifications of the original household and new households that result from household changes. These changes include: divorce/separation, death, or new spouse of the original subjects. The last two digits of the variable indicate the year of the respective wave. Also, the variable SUBHOG\_03 was created to replace the "updated household" ID (ACTHOG) used in 2003.

HwHHIDC is a 9-digit character version of HwHHID. HwHHIDC is created by exactly the same standards as HwHHID but is stored as a character.

Cross Wave Differences in MHAS

The household code ACTHOG was created in 2003 to capture changes in the situation of the individual or couple interviewed in 2001. This variable is referred to as "updated household" and the codes reflect the type of change experienced, including divorce/separation, death, or new spouse. The updated-household codes also capture whether the household observed in 2003 contains the baseline sampled respondent, or the baseline spouse of the selected person. In 2003, the unique household identifier CUNICAH used in 2001 must be supplemented with ACTHOG to form the unique household identifier. These two variables, in combination with the person identifier for the 2003 given by CODENT03 (also called ENT2) serve as unique identifiers for the second wave.

In 2012 a set of sub-household IDs (SUBHOG\_XX) was introduced to follow the modifications of the original household and new households that result from household changes. The last two digits of the variable indicate the year of the respective survey. One variable has been created for each wave (SUBHOG\_01, SUBHOG\_03, SUBHOG\_12, SUBHOG\_15, SUBHOG\_18), each of them reflecting the changes in the household recorded for 2001, 2003, 2012, 2015 and 2018 respectively. This new identifier was created to replace the "updated household" ID (ACTHOG) used in 2003. The unique household identifier CUNICAH must be supplemented with SUBHOG\_03, SUBHOG\_12, SUBHOG\_15, and SUBHOG\_18 to form the unique household identifier for 2003, 2012, 2015, and 2018 respectively.

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|           |                                 |
|-----------|---------------------------------|
| Wave 1:   |                                 |
| CUNICAH   | Clave Unica del Hogar (=unhhid) |
| Wave 2:   |                                 |
| ACTHOG    | Update household code 2003      |
| CUNICAH   | Clave Unica del Hogar (=unhhid) |
| Wave 3:   |                                 |
| CUNICAH   | Clave Unica del Hogar (=unhhid) |
| SUBHOG_12 | 2012 sub-household identifier   |
| Wave 4:   |                                 |
| CUNICAH   | Clave Unica del Hogar (=unhhid) |
| SUBHOG_15 | 2015 sub-household identifier   |
| Wave 5:   |                                 |
| CUNICAH   | Clave Unica del Hogar (=unhhid) |
| SUBHOG_18 | 2018 sub-household identifier   |

Spouse Identifier

| Wave | Variable | Label                                   | Type |
|------|----------|---|------|
| 1    | S1HHIDNP | s1hhidnp: w1 S Unique Person Identifier | Cont |
| 2    | S2HHIDNP | s2hhidnp: w2 S Unique Person Identifier | Cont |
| 3    | S3HHIDNP | s3hhidnp: w3 S Unique Person Identifier | Cont |
| 4    | S4HHIDNP | s4hhidnp: w4 S Unique Person Identifier | Cont |
| 5    | S5HHIDNP | s5hhidnp: w5 S Unique Person Identifier | Cont |

Descriptive Statistics

| Variable | N     | Mean      | Std Dev   | Minimum | Maximum    |
|----------|-------|-----------|-----------|---------|------------|
| S1HHIDNP | 11075 | 548360.35 | 316747.65 | 110.00  | 1100020.00 |
| S2HHIDNP | 9945  | 547336.90 | 315189.55 | 110.00  | 1100020.00 |
| S3HHIDNP | 10592 | 860869.11 | 454646.53 | 110.00  | 1513020.00 |
| S4HHIDNP | 9863  | 881061.35 | 454348.75 | 210.00  | 1513020.00 |
| S5HHIDNP | 8687  | 900574.16 | 453817.05 | 310.00  | 1513020.00 |

How Constructed

SwHHIDNP gives the UNHHIDNP of the spouse in Wave 'w'.

If there is no spouse in a given wave, SwHHIDPN is set to zero. If SwHHIDPN is unknown, and the marital status in a particular wave is either missing or married, SwHHIDPN is set to a special missing code of .m. SwHHIDPN is set to plain missing (.) for respondents who did not respond to the current wave.

Cross Wave Differences in MHAS

No differences known

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|          |   |
|----------|---|
| Wave 1:  |   |
| CODENT01 | Person identification code 2001 (=ps3)      |
| CUNICAH  | Clave Unica del Hogar (=unhhid)             |
| PS3      | Person identification code 2001 (=codent01) |
| Wave 2:  |   |
| ACTHOG   | Update household code 2003                  |
| CODENT03 | Person identification code 2003 (=ent2)     |
| CUNICAH  | Clave Unica del Hogar (=unhhid)             |
| ENT2     | Person identification code 2003 (=codent03) |
| Wave 3:  |   |
| CUNICAH  | Clave Unica del Hogar (=unhhid)             |
| NP       | Person Number/ Numero de Persona            |
| Wave 4:  |   |
| CUNICAH  | Clave Unica del Hogar (=unhhid)             |
| NP       | Person Number/ Numero de Persona            |
| Wave 5:  |   |
| CUNICAH  | Clave Unica del Hogar (=unhhid)             |
| NP       | Person Number/ Numero de Persona            |

Wave Status: Response Indicator

| Wave Variable |      | Label                       | Type  |
|---------------|------|-----------------------------|-------|
| 1             | INW1 | inw1: w1 Response Indicator | Categ |
| 2             | INW2 | inw2: w2 Response Indicator | Categ |
| 3             | INW3 | inw3: w3 Response Indicator | Categ |
| 4             | INW4 | inw4: w4 Response Indicator | Categ |
| 5             | INW5 | inw5: w5 Response Indicator | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| INW1     | 26839 | 0.57 | 0.50    | 0.00    | 1.00    |
| INW2     | 26839 | 0.51 | 0.50    | 0.00    | 1.00    |
| INW3     | 26839 | 0.59 | 0.49    | 0.00    | 1.00    |
| INW4     | 26839 | 0.55 | 0.50    | 0.00    | 1.00    |
| INW5     | 26839 | 0.64 | 0.48    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----    | INW1  | INW2  | INW3  | INW4  | INW5  |
|---------------|-------|-------|-------|-------|-------|
| 0.Non, resp   | 11653 | 13135 | 11116 | 12060 | 9725  |
| 1.Resp, alive | 15186 | 13704 | 15723 | 14779 | 17114 |

How Constructed

These variables indicate whether an individual responded to a particular wave. INWw is derived from information in the MHAS master follow-up file. Respondents identified as having either a full or partial interview either in person or through a proxy are considered to have responded, without considering the order of the interview. Interviews for the deceased are not considered to have responded.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|           |                        |
|-----------|------------------------|
| Wave 1:   |                        |
| TIPENT_01 | Type of interview 2001 |
| Wave 2:   |                        |
| TIPENT_03 | Type of interview 2003 |
| Wave 3:   |                        |
| TIPENT_12 | Type of interview 2012 |
| Wave 4:   |                        |
| TIPENT_15 | Type of interview 2015 |
| Wave 5:   |                        |
| TIPENT_18 | Type of interview 2018 |

Wave Status: Interview Status

| Wave | Variable | Label                           | Type  |
|------|----------|---------------------------------|-------|
| 1    | R1IWSTAT | r1iwstat: w1 R Interview Status | Categ |
| 2    | R2IWSTAT | r2iwstat: w2 R Interview Status | Categ |
| 3    | R3IWSTAT | r3iwstat: w3 R Interview Status | Categ |
| 4    | R4IWSTAT | r4iwstat: w4 R Interview Status | Categ |
| 5    | R5IWSTAT | r5iwstat: w5 R Interview Status | Categ |
| 1    | S1IWSTAT | s1iwstat: w1 S Interview Status | Categ |
| 2    | S2IWSTAT | s2iwstat: w2 S Interview Status | Categ |
| 3    | S3IWSTAT | s3iwstat: w3 S Interview Status | Categ |
| 4    | S4IWSTAT | s4iwstat: w4 S Interview Status | Categ |
| 5    | S5IWSTAT | s5iwstat: w5 S Interview Status | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1IWSTAT | 26839 | 0.59 | 0.57    | 0.00    | 4.00    |
| R2IWSTAT | 26839 | 0.83 | 1.35    | 0.00    | 9.00    |
| R3IWSTAT | 26839 | 1.47 | 1.83    | 0.00    | 9.00    |
| R4IWSTAT | 26839 | 1.96 | 2.37    | 0.00    | 9.00    |
| R5IWSTAT | 26839 | 2.41 | 2.42    | 0.00    | 9.00    |
| S1IWSTAT | 11075 | 1.02 | 0.45    | 0.00    | 4.00    |
| S2IWSTAT | 9945  | 1.14 | 0.71    | 0.00    | 5.00    |
| S3IWSTAT | 10592 | 1.00 | 0.00    | 1.00    | 1.00    |
| S4IWSTAT | 9863  | 1.07 | 0.48    | 1.00    | 9.00    |
| S5IWSTAT | 8687  | 1.57 | 1.75    | 1.00    | 9.00    |

Categorical Variable Codes

| Value-----                | R1IWSTAT | R2IWSTAT | R3IWSTAT | R4IWSTAT | R5IWSTAT |
|---------------------------|----------|----------|----------|----------|----------|
| 0.Inap                    | 11474    | 11609    | 6644     | 5770     | 1678     |
| 1.Resp, alive             | 15186    | 13704    | 15723    | 14779    | 17114    |
| 4.NR, alive               | 179      | 597      | 674      | 731      | 1270     |
| 5.NR, died this wave      |          | 563      | 2867     | 1219     | 1146     |
| 6.NR, died prev wave      |          |          | 563      | 3430     | 4649     |
| 9.NR, dk if alive or died |          | 366      | 368      | 910      | 982      |
| Value-----                | S1IWSTAT | S2IWSTAT | S3IWSTAT | S4IWSTAT | S5IWSTAT |
| .u:Unmar                  | 4040     | 3752     | 4782     | 4844     | 5224     |
| .v:SP NR                  | 71       | 7        | 349      | 72       | 307      |
| 0.Inap                    | 358      | 1        |          |          |          |
| 1.Resp, alive             | 10506    | 9561     | 10592    | 9652     | 7638     |
| 4.NR, alive               | 211      | 128      |          | 203      | 684      |
| 5.NR, died this wave      |          | 255      |          | 1        |          |
| 9.NR, dk if alive or died |          |          |          | 7        | 365      |

How Constructed

The R*w*IWSTAT variable gives the response and mortality status of the respondent at each wave. Respondents are identified by code 1, non-respondents are identified by codes 4-6 and 9.

Mortality status is taken from the Follow-up Master File. Known alive and presumed alive are both treated as an indication that the respondent is living. Non-response code 4 means that the respondent is alive so far as we know but did not respond. A code of 5 means that the respondent died between the last interview and the current one, and 6 means that the respondent had died before a previous wave. A code of 9 means that we don't know if the individual is alive or not.

SwIWSTAT gives the response and mortality status of the current wave's spouse. It is taken from the spouse's RwiWSTAT. Note that when a spouse dies the spouse interview status for the surviving spouse will have a code of .u, respondent unmarried, if the widow does not remarry. A .v missing code indicates that there is no information in the Master file on why the spouse did not respond. Note also that SwIWSTAT is set to plain missing (.) if an individual did not respond at a particular interview, including if they died.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|          |                                      |
|----------|--------------------------------------|
| Wave 1:  |                                      |
| TIPNE_01 | Type of household non-interview 2001 |
| Wave 2:  |                                      |
| TIPNE_03 | Type of non-interview 2003           |
| Wave 3:  |                                      |
| TIPNE_12 | Type of non-interview 2012           |
| Wave 4:  |                                      |
| TIPNE_15 | Type of non-interview 2015           |
| Wave 5:  |                                      |
| TIPNE_18 | Type of non-interview 2018           |



Sample Cohort

|               |                         |       |
|---------------|-------------------------|-------|
| Wave Variable | Label                   | Type  |
| 1 HACOHORT    | HACOHORT: Sample Cohort | Categ |

Descriptive Statistics

|          |       |      |         |         |         |
|----------|-------|------|---------|---------|---------|
| Variable | N     | Mean | Std Dev | Minimum | Maximum |
| HACOHORT | 26839 | 1.59 | 0.77    | 1.00    | 3.00    |

Categorical Variable Codes

|                       |          |
|-----------------------|----------|
| Value-----            | HACOHORT |
| Baseline sample       | 15721    |
| 2012 Refresher sample | 6382     |
| 2018 Refresher sample | 4736     |

How Constructed

HACOHORT identifies the cohort in which the household was originally sampled. HACOHORT is assigned a 1 if the household was sampled with the original cohort in Wave 1 (2001). HACOHORT is assigned a 2 if the household was added to the sample in Wave 3 (2012) and a 3 if the household was added to the sample in Wave 5 (2018).

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|               |                                       |
|---------------|---------------------------------------|
| Wave 1:       |                                       |
| TIPNE_01      | Type of household non-interview 2001  |
| Wave 2:       |                                       |
| TIPNE_03      | Type of non-interview 2003            |
| Wave 3:       |                                       |
| NEW_SAMPLE_12 | Follow-up and new sample 2012         |
| Wave 4:       |                                       |
| NEW_SAMPLE_15 | Follow-up and new sample/spouses 2015 |
| Wave 5:       |                                       |
| NEW_SAMPLE_18 | Follow-up and new sample/spouses 2018 |

Whether Proxy Interview

| Wave | Variable | Label                                 | Type  |
|------|----------|---------------------------------------|-------|
| 1    | R1PROXY  | r1proxy: w1 R Whether Proxy Interview | Categ |
| 2    | R2PROXY  | r2proxy: w3 R Whether Proxy Interview | Categ |
| 3    | R3PROXY  | r3proxy: w3 R Whether Proxy Interview | Categ |
| 4    | R4PROXY  | r4proxy: w4 R Whether Proxy Interview | Categ |
| 5    | R5PROXY  | r5proxy: w5 R Whether Proxy Interview | Categ |
| 1    | S1PROXY  | s1proxy: w1 S Whether Proxy Interview | Categ |
| 2    | S2PROXY  | s2proxy: w2 S Whether Proxy Interview | Categ |
| 3    | S3PROXY  | s3proxy: w3 S Whether Proxy Interview | Categ |
| 4    | S4PROXY  | s4proxy: w4 S Whether Proxy Interview | Categ |
| 5    | S5PROXY  | s5proxy: w5 S Whether Proxy Interview | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1PROXY  | 15186 | 0.07 | 0.25    | 0.00    | 1.00    |
| R2PROXY  | 13704 | 0.09 | 0.28    | 0.00    | 1.00    |
| R3PROXY  | 15723 | 0.08 | 0.27    | 0.00    | 1.00    |
| R4PROXY  | 14779 | 0.06 | 0.24    | 0.00    | 1.00    |
| R5PROXY  | 17114 | 0.08 | 0.27    | 0.00    | 1.00    |
| S1PROXY  | 10648 | 0.06 | 0.24    | 0.00    | 1.00    |
| S2PROXY  | 9564  | 0.09 | 0.28    | 0.00    | 1.00    |
| S3PROXY  | 10592 | 0.07 | 0.25    | 0.00    | 1.00    |
| S4PROXY  | 9652  | 0.05 | 0.22    | 0.00    | 1.00    |
| S5PROXY  | 7638  | 0.07 | 0.26    | 0.00    | 1.00    |

Categorical Variable Codes

|             |         |         |         |         |         |
|-------------|---------|---------|---------|---------|---------|
| Value-----  | R1PROXY | R2PROXY | R3PROXY | R4PROXY | R5PROXY |
| 0.Not proxy | 14154   | 12526   | 14448   | 13850   | 15786   |
| 1.Proxy     | 1032    | 1178    | 1275    | 929     | 1328    |
| Value-----  | S1PROXY | S2PROXY | S3PROXY | S4PROXY | S5PROXY |
| .u:Unmar    | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR    | 333     | 131     | 349     | 280     | 501     |
| 0.Not proxy | 9988    | 8743    | 9866    | 9182    | 7075    |
| 1.Proxy     | 660     | 821     | 726     | 470     | 563     |

How Constructed

RwPROXY is set to 1 if the interview is by proxy in the current wave. A code of 0 is used if the respondent was not a proxy and a code of 1 is used when the interview was completed by proxy. RwPROXY is set to plain missing (.) for respondents who did not respond to the current wave.

SwPROXY indicates whether the current wave's spouse's interview is by proxy. It is taken from the spouse's RwPROXY. Special missing value .u is used when the respondent does not report being coupled in the current wave. Special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|           |                        |
|-----------|------------------------|
| Wave 1:   |                        |
| TIPENT_01 | Type of interview 2001 |
| Wave 2:   |                        |
| TIPENT_03 | Type of interview 2003 |
| Wave 3:   |                        |
| TIPENT_12 | Type of interview 2012 |
| Wave 4:   |                        |
| TIPENT_15 | Type of interview 2015 |
| Wave 5:   |                        |
| TIPENT_18 | Type of interview 2018 |

Number of Household Respondents

| Wave | Variable | Label                                 | Type |
|------|----------|---------------------------------------|------|
| 1    | H1HHRESP | h1hhresp: w1 # Core Respondents in hh | Cont |
| 2    | H2HHRESP | h2hhresp: w2 # Core Respondents in hh | Cont |
| 3    | H3HHRESP | h3hhresp: w3 # Core Respondents in hh | Cont |
| 4    | H4HHRESP | h4hhresp: w4 # Core Respondents in hh | Cont |
| 5    | H5HHRESP | h5hhresp: w5 # Core Respondents in hh | Cont |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| H1HHRESP | 15186 | 1.70 | 0.46    | 1.00    | 2.00    |
| H2HHRESP | 13704 | 1.70 | 0.46    | 1.00    | 2.00    |
| H3HHRESP | 15723 | 1.67 | 0.47    | 1.00    | 2.00    |
| H4HHRESP | 14779 | 1.65 | 0.48    | 1.00    | 2.00    |
| H5HHRESP | 17114 | 1.67 | 0.47    | 1.00    | 2.00    |

How Constructed

HwHHRESP is the number of individuals in the household who actually responded at each wave. It counts the number of respondents sharing the same household ID. It counts the respondent and spouse, if any and if the spouse responded, taking on a value of 1 or 2. Individuals with a value greater than zero for INWw are counted by wave-specific household that is by household ID (CUNICAH/UNHHID) and sub-household ID (ACTHOG in Wave 2, SUBHOG\_12 in Wave 3, SUBHOG\_15 in Wave 4, and SUBHOG\_18 in Wave 5). HwHHRESP is set to plain missing (.) for respondents who did not respond to the current wave.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|           |                        |
|-----------|------------------------|
| Wave 1:   |                        |
| TIPENT_01 | Type of interview 2001 |
| Wave 2:   |                        |
| TIPENT_03 | Type of interview 2003 |
| Wave 3:   |                        |
| TIPENT_12 | Type of interview 2012 |
| Wave 4:   |                        |
| TIPENT_15 | Type of interview 2015 |
| Wave 5:   |                        |
| TIPENT_18 | Type of interview 2018 |

Whether Couple Household

| Wave | Variable | Label                         | Type  |
|------|----------|-------------------------------|-------|
| 1    | H1CPL    | h1cpl: w1 Whether a Couple hh | Categ |
| 2    | H2CPL    | h2cpl: w2 Whether a Couple hh | Categ |
| 3    | H3CPL    | h3cpl: w3 Whether a Couple hh | Categ |
| 4    | H4CPL    | h4cpl: w4 Whether a Couple hh | Categ |
| 5    | H5CPL    | h5cpl: w5 Whether a Couple hh | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| H1CPL    | 15186 | 0.70 | 0.46    | 0.00    | 1.00    |
| H2CPL    | 13704 | 0.70 | 0.46    | 0.00    | 1.00    |
| H3CPL    | 15723 | 0.67 | 0.47    | 0.00    | 1.00    |
| H4CPL    | 14779 | 0.65 | 0.48    | 0.00    | 1.00    |
| H5CPL    | 17114 | 0.67 | 0.47    | 0.00    | 1.00    |

Categorical Variable Codes

| Value----- | H1CPL | H2CPL | H3CPL | H4CPL | H5CPL |
|------------|-------|-------|-------|-------|-------|
| 0.No       | 4538  | 4140  | 5131  | 5127  | 5728  |
| 1.Yes      | 10648 | 9564  | 10592 | 9652  | 11386 |

How Constructed

HwCPL indicates whether the respondent is treated as coupled or not. HwCPL is set to one if the respondent is coupled with another respondent in the current wave. HwCPL is set to zero if the respondent is not coupled with any other respondent in the current wave. HwCPL is set to plain missing (.) for respondents who did not respond to the current wave.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|           |                        |
|-----------|------------------------|
| Wave 1:   |                        |
| TIPENT_01 | Type of interview 2001 |
| Wave 2:   |                        |
| TIPENT_03 | Type of interview 2003 |
| Wave 3:   |                        |
| TIPENT_12 | Type of interview 2012 |
| Wave 4:   |                        |
| TIPENT_15 | Type of interview 2015 |
| Wave 5:   |                        |
| TIPENT_18 | Type of interview 2018 |

Household Analysis Weight

| Wave | Variable | Label                                | Type |
|------|----------|--------------------------------------|------|
| 1    | R1WTHH   | r1wthh: w1 Household Analysis Weight | Cont |
| 2    | R2WTHH   | r2wthh: w2 Household Analysis Weight | Cont |
| 3    | R3WTHH   | r3wthh: w3 Household Analysis Weight | Cont |
| 4    | R4WTHH   | r4wthh: w4 Household Analysis Weight | Cont |
| 5    | R5WTHH   | r5wthh: w5 Household Analysis Weight | Cont |

Descriptive Statistics

| Variable | N     | Mean    | Std Dev | Minimum | Maximum  |
|----------|-------|---------|---------|---------|----------|
| R1WTHH   | 15365 | 1014.49 | 1578.44 | 16.00   | 35360.00 |
| R2WTHH   | 15479 | 903.19  | 1733.85 | 0.00    | 46315.00 |
| R3WTHH   | 20582 | 1412.93 | 2841.96 | 0.00    | 72628.00 |
| R4WTHH   | 17639 | 1514.81 | 2777.29 | 0.00    | 51137.00 |
| R5WTHH   | 20512 | 1310.32 | 2460.81 | 0.00    | 90984.00 |

How Constructed

RwWTHH is the household analysis weight. The household weights are taken directly from household weights, FACTORH, in the MHAS Follow-up Master File. The MHAS household weights are based on the sample design and sample selection criteria, and the calibration variables of all community dwelling households with at least one resident 50 years or older, based on the household composition, the place of residence (urban and rural areas), and geographic area.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|            |                       |
|------------|-----------------------|
| Wave 1:    |                       |
| FACTORH_01 | Household weight 2001 |
| Wave 2:    |                       |
| FACTORH_03 | Household weight 2003 |
| Wave 3:    |                       |
| FACTORH_12 | Household weight 2012 |
| Wave 4:    |                       |
| FACTORH_15 | Household weight 2015 |
| Wave 5:    |                       |
| FACTORH_18 | Household weight 2018 |

|                                     |
|-------------------------------------|
| <b>Person-Level Analysis Weight</b> |
|-------------------------------------|

| Wave | Variable | Label                                       | Type |
|------|----------|---|------|
| 1    | R1WTRESP | r1wtresp: w1 R Person-Level Analysis Weight | Cont |
| 2    | R2WTRESP | r2wtresp: w2 R Person-Level Analysis Weight | Cont |
| 3    | R3WTRESP | r3wtresp: w3 R Person-Level Analysis Weight | Cont |
| 4    | R4WTRESP | r4wtresp: w4 R Person-Level Analysis Weight | Cont |
| 5    | R5WTRESP | r5wtresp: w5 R Person-Level Analysis Weight | Cont |
| 1    | S1WTRESP | s1wtresp: w1 S Person-Level Analysis Weight | Cont |
| 2    | S2WTRESP | s2wtresp: w2 S Person-Level Analysis Weight | Cont |
| 3    | S3WTRESP | s3wtresp: w3 S Person-Level Analysis Weight | Cont |
| 4    | S4WTRESP | s4wtresp: w4 S Person-Level Analysis Weight | Cont |
| 5    | S5WTRESP | s5wtresp: w5 S Person-Level Analysis Weight | Cont |

### Descriptive Statistics

| Variable | N     | Mean    | Std Dev | Minimum | Maximum  |
|----------|-------|---------|---------|---------|----------|
| R1WTRESP | 15365 | 950.58  | 1688.14 | 0.00    | 44177.00 |
| R2WTRESP | 15479 | 909.73  | 1748.52 | 0.00    | 46315.00 |
| R3WTRESP | 20582 | 1393.20 | 3046.60 | 0.00    | 97546.00 |
| R4WTRESP | 17639 | 1279.44 | 2661.28 | 0.00    | 90984.00 |
| R5WTRESP | 20512 | 1511.16 | 2917.52 | 0.00    | 98699.00 |
| S1WTRESP | 10864 | 868.58  | 1499.98 | 0.00    | 29742.00 |
| S2WTRESP | 9945  | 922.69  | 1634.30 | 0.00    | 33620.00 |
| S3WTRESP | 10592 | 1654.21 | 3316.51 | 0.00    | 97546.00 |
| S4WTRESP | 9863  | 1434.40 | 2690.97 | 0.00    | 43969.00 |
| S5WTRESP | 8687  | 1615.51 | 3098.62 | 0.00    | 53376.00 |

### How Constructed

RwWTRESP is the person-level analysis weight. The person-level weights are taken directly from individual weights, FACTORI, in the MHAS Follow-up Master File. The MHAS person-level weights are based on the birth cohort, household composition, the place of residence (in urban and rural areas), and geographic area. Wave 1 and Wave 2 weights were calibrated for the baseline sample, and are only generated for age-eligible respondents. All selected respondents who are not age-eligible are assigned 0 as the weight. At baseline, the calibration was based on the size of the Mexican population of individuals born prior to 1951, that is, the population aged 50 or older as of 2001. In Wave 3, the sample was refreshed adding a representative sample of the population from the 1952-1962 birth cohort as well as their spouses/partners regardless of age. The Waves 3 and 4 weights were assigned to the new age-eligible respondents as well, and were calibrated to represent the population aged 50 or older as of 2012. In Wave 5, the sample was refreshed adding a representative sample of the population from the 1963-1968 birth cohort as well as their spouses/partners regardless of age. The Wave 5 weights were assigned to the new age-eligible respondents, and were calibrated to represent the population aged 50 or older as of 2018.

SwWTRESP is the current wave's spouse's person-level analysis weight. It is taken directly from the spouse's RwWTRESP. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

### Cross Wave Differences in MHAS

No differences known.

### Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|         |            |                        |
|---------|------------|------------------------|
| Wave 1: |            |                        |
|         | FACTORI_01 | Person weight 2001     |
| Wave 2: |            |                        |
|         | FACTORI_03 | Person weight 2003     |
| Wave 3: |            |                        |
|         | FACTORI_12 | Individual weight 2012 |
| Wave 4: |            |                        |
|         | FACTORI_15 | Individual weight 2015 |
| Wave 5: |            |                        |
|         | FACTORI_18 | Individual weight 2018 |



Interview Dates

| Wave | Variable | Label     |                       | Type  |
|------|----------|-----------|-----------------------|-------|
| 1    | R1IWM    | r1iwm: w1 | R Interview Month     | Cont  |
| 2    | R2IWM    | r2iwm: w2 | R Interview Month     | Cont  |
| 3    | R3IWM    | r3iwm: w3 | R Interview Month     | Cont  |
| 4    | R4IWM    | r4iwm: w4 | R Interview Month     | Cont  |
| 5    | R5IWM    | r5iwm: w5 | R Interview Month     | Cont  |
| 1    | S1IWM    | s1iwm: w1 | S Interview Month     | Cont  |
| 2    | S2IWM    | s2iwm: w2 | S Interview Month     | Cont  |
| 3    | S3IWM    | s3iwm: w3 | S Interview Month     | Cont  |
| 4    | S4IWM    | s4iwm: w4 | S Interview Month     | Cont  |
| 5    | S5IWM    | s5iwm: w5 | S Interview Month     | Cont  |
| 1    | R1IWY    | r1iwy: w1 | R Interview Year      | Cont  |
| 2    | R2IWY    | r2iwy: w2 | R Interview Year      | Cont  |
| 3    | R3IWY    | r3iwy: w3 | R Interview Year      | Cont  |
| 4    | R4IWY    | r4iwy: w4 | R Interview Year      | Cont  |
| 5    | R5IWY    | r5iwy: w5 | R Interview Year      | Cont  |
| 1    | S1IWY    | s1iwy: w1 | S Interview Year      | Cont  |
| 2    | S2IWY    | s2iwy: w2 | S Interview Year      | Cont  |
| 3    | S3IWY    | s3iwy: w3 | S interview Year      | Cont  |
| 4    | S4IWY    | s4iwy: w4 | S interview Year      | Cont  |
| 5    | S5IWY    | s5iwy: w5 | S interview Year      | Cont  |
| 1    | R1IWF    | r1iwf: w1 | R Interview Date Flag | Categ |
| 2    | R2IWF    | r2iwf: w1 | R Interview Date Flag | Categ |
| 3    | R3IWF    | r3iwf: w3 | R Interview Date Flag | Categ |
| 4    | R4IWF    | r4iwf: w4 | R Interview Date Flag | Categ |
| 5    | R5IWF    | r5iwf: w5 | R Interview Date Flag | Categ |
| 1    | S1IWF    | s1iwf: w1 | S Interview Date Flag | Categ |
| 2    | S2IWF    | s2iwf: w2 | S Interview Date Flag | Categ |
| 3    | S3IWF    | s3iwf: w3 | S Interview Date Flag | Categ |
| 4    | S4IWF    | s4iwf: w4 | S Interview Date Flag | Categ |
| 5    | S5IWF    | s5iwf: w5 | S Interview Date Flag | Categ |

Descriptive Statistics

| Variable | N     | Mean    | Std Dev | Minimum | Maximum |
|----------|-------|---------|---------|---------|---------|
| R1IWM    | 15186 | 6.51    | 0.82    | 1.00    | 10.00   |
| R2IWM    | 13704 | 6.75    | 0.70    | 6.00    | 9.00    |
| R3IWM    | 15714 | 10.59   | 0.64    | 1.00    | 12.00   |
| R4IWM    | 14779 | 10.63   | 0.59    | 10.00   | 12.00   |
| R5IWM    | 17114 | 11.23   | 1.65    | 1.00    | 12.00   |
| S1IWM    | 10648 | 6.54    | 0.82    | 1.00    | 10.00   |
| S2IWM    | 9564  | 6.76    | 0.69    | 6.00    | 9.00    |
| S3IWM    | 10584 | 10.58   | 0.62    | 1.00    | 12.00   |
| S4IWM    | 9652  | 10.63   | 0.58    | 10.00   | 12.00   |
| S5IWM    | 7638  | 11.26   | 1.62    | 1.00    | 12.00   |
| R1IWY    | 15186 | 2001.00 | 0.00    | 2001.00 | 2001.00 |
| R2IWY    | 13704 | 2003.00 | 0.00    | 2003.00 | 2003.00 |
| R3IWY    | 15711 | 2012.00 | 0.03    | 2012.00 | 2013.00 |
| R4IWY    | 14779 | 2015.00 | 0.00    | 2015.00 | 2015.00 |
| R5IWY    | 17114 | 2018.02 | 0.15    | 2018.00 | 2019.00 |

|       |       |         |      |         |         |
|-------|-------|---------|------|---------|---------|
| S1IWY | 10648 | 2001.00 | 0.00 | 2001.00 | 2001.00 |
| S2IWY | 9564  | 2003.00 | 0.00 | 2003.00 | 2003.00 |
| S3IWY | 10581 | 2012.00 | 0.03 | 2012.00 | 2013.00 |
| S4IWY | 9652  | 2015.00 | 0.00 | 2015.00 | 2015.00 |
| S5IWY | 7638  | 2018.02 | 0.15 | 2018.00 | 2019.00 |
|       |       |         |      |         |         |
| R1IWF | 15186 | 0.00    | 0.00 | 0.00    | 0.00    |
| R2IWF | 13704 | 0.00    | 0.00 | 0.00    | 0.00    |
| R3IWF | 15723 | 0.00    | 0.06 | 0.00    | 2.00    |
| R4IWF | 14779 | 0.00    | 0.00 | 0.00    | 0.00    |
| R5IWF | 17114 | 0.00    | 0.00 | 0.00    | 0.00    |
|       |       |         |      |         |         |
| S1IWF | 10648 | 0.00    | 0.00 | 0.00    | 0.00    |
| S2IWF | 9564  | 0.00    | 0.00 | 0.00    | 0.00    |
| S3IWF | 10592 | 0.00    | 0.06 | 0.00    | 2.00    |
| S4IWF | 9652  | 0.00    | 0.00 | 0.00    | 0.00    |
| S5IWF | 7638  | 0.00    | 0.00 | 0.00    | 0.00    |

## Categorical Variable Codes

|               |       |       |       |       |       |
|---------------|-------|-------|-------|-------|-------|
| Value-----    | R1IWF | R2IWF | R3IWF | R4IWF | R5IWF |
| 0.m/y ok      | 15186 | 13704 | 15711 | 14779 | 17114 |
| 2.mon/yr miss |       |       | 12    |       |       |
|               |       |       |       |       |       |
| Value-----    | S1IWF | S2IWF | S3IWF | S4IWF | S5IWF |
| .u:Unmar      | 4205  | 4009  | 4782  | 4847  | 5227  |
| .v:SP NR      | 333   | 131   | 349   | 280   | 501   |
| 0.m/y ok      | 10648 | 9564  | 10581 | 9652  | 7638  |
| 2.mon/yr miss |       |       | 11    |       |       |

## How Constructed

These variables are derived from the reported month and year when the interview took place. RwIWM and Rwiwy indicate the interview month and year, respectively. Rwiwm and Rwiwy are set to plain missing (.) for respondents who did not respond to the current wave.

SwIWM and SwIWY indicate the current wave's spouse's interview month and year, respectively. They are taken from the spouse's Rwiwm and Rwiwy, respectively. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Rwiwf flags interview dates when information on either month or year is missing. A code of 0 indicates that information on both month and year was available. A code of 1 indicates that the interview month was not available. A code of 2 indicates that the interview year was missing, possibly in addition to a missing interview month. Rwiwf is set to plain missing (.) for respondents who did not respond to the current wave.

Swiwf flags the current wave's spouse's interview date. It is taken from the spouse's Rwiwf. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

Unlike the HRS, MHAS does not mark interviews with beginning and ending dates. Instead, MHAS provides information down to the year, month, and day when the interview was completed. Thus, unlike in the RAND HRS where interview dates are derived as midpoint between the reported beginning and ending dates, there are no midpoint calculations for the interview date variables in the Harmonized MHAS.

MHAS Variables Used

|         |             |                     |
|---------|-------------|---------------------|
| Wave 1: |             |                     |
|         | PS31_1      | day of interview    |
| Wave 2: |             |                     |
|         | ENT4_2      | month of interview  |
| Wave 3: |             |                     |
|         | INT_DATE_12 | Interview date 2012 |
| Wave 4: |             |                     |
|         | INT_DATE_15 | Interview date 2015 |
| Wave 5: |             |                     |
|         | INT_DATE_18 | Interview date 2018 |

|                                   |
|-----------------------------------|
| <b>Birth Date: Month and Year</b> |
|-----------------------------------|

| Wave | Variable | Label                      | Type |
|------|----------|----------------------------|------|
| 1    | RABYEAR  | rabyear: R Birth Year      | Cont |
| 1    | S1BYEAR  | s1byear: w1 S Birth Year   | Cont |
| 2    | S2BYEAR  | s2byear: w2 S Birth Year   | Cont |
| 3    | S3BYEAR  | s3byear: w3 S Birth Year   | Cont |
| 4    | S4BYEAR  | s4byear: w4 S Birth Year   | Cont |
| 5    | S5BYEAR  | s5byear: w5 S Birth Year   | Cont |
| 1    | RABMONTH | rabmonth: R Birth Month    | Cont |
| 1    | S1BMONTH | s1bmonth: w1 S Birth Month | Cont |
| 2    | S2BMONTH | s2bmonth: w2 S Birth Month | Cont |
| 3    | S3BMONTH | s3bmonth: w3 S Birth Month | Cont |
| 4    | S4BMONTH | s4bmonth: w4 S Birth Month | Cont |
| 5    | S5BMONTH | s5bmonth: w5 S Birth Month | Cont |

### Descriptive Statistics

| Variable | N     | Mean    | Std Dev | Minimum | Maximum |
|----------|-------|---------|---------|---------|---------|
| RABYEAR  | 26771 | 1948.69 | 14.04   | 1895.00 | 2001.00 |
| S1BYEAR  | 10648 | 1941.83 | 10.08   | 1895.00 | 1982.00 |
| S2BYEAR  | 9846  | 1941.68 | 9.95    | 1895.00 | 1982.00 |
| S3BYEAR  | 10578 | 1949.99 | 10.19   | 1898.00 | 1992.00 |
| S4BYEAR  | 9815  | 1950.87 | 9.72    | 1913.00 | 1992.00 |
| S5BYEAR  | 8668  | 1951.61 | 9.43    | 1918.00 | 1999.00 |
| RABMONTH | 26602 | 6.51    | 3.41    | 1.00    | 12.00   |
| S1BMONTH | 10596 | 6.45    | 3.40    | 1.00    | 12.00   |
| S2BMONTH | 9791  | 6.45    | 3.41    | 1.00    | 12.00   |
| S3BMONTH | 10567 | 6.51    | 3.43    | 1.00    | 12.00   |
| S4BMONTH | 9716  | 6.51    | 3.43    | 1.00    | 12.00   |
| S5BMONTH | 8605  | 6.52    | 3.43    | 1.00    | 12.00   |

### How Constructed

RABYEAR is the respondent's reported birth year. RABMONTH is the respondent's reported month of birth. RABYEAR and RABMONTH are taken from the first non-missing value of birth data. Don't know responses are assigned special missing .d. Invalid birth dates are assigned special missing .i. RABYEAR and RABMONTH are set to plain missing (.) for respondents who did not respond to the current wave.

SwBYEAR and SwBMONTH indicate the current wave's spouse's birth year and month, respectively. They are taken from the spouse's RABYEAR and RABMONTH. If the respondent is not designated as coupled in the current wave and assumed to be single a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married a special missing value of .v is used.

### Cross Wave Differences in MHAS

No differences known.

### Differences with the RAND HRS/Harmonized HRS

Unlike the HRS, the MHAS asked the respondent's birthdate only during the first interview. However, starting in Wave 3, follow-up respondents were asked: "During the last interview, you said your birth

date was \_\_. Is this correct?". Respondents could indicate whether the date was correct or not, and were allowed to correct the information provided.

MHAS Variables Used

|           |   |
|-----------|---|
| Wave 1:   |   |
| A1_2      | month of birth                                  |
| A1_3      | year of birth                                   |
| Wave 2:   |   |
| AA2_2     | dob - month                                     |
| AA2_3     | dob - year                                      |
| Wave 3:   |   |
| A2A2_2_12 | Correct month of birth                          |
| A2A2_3_12 | Correct year of birth                           |
| AA2_2_12  | Month of birth                                  |
| AA2_3_12  | Year of birth                                   |
| Wave 4:   |   |
| A2A1_15   | Respondent's original stated birthday - Correct |
| A2A2_3_15 | Correct year of birth                           |
| A2A2_3_15 | Correct year of birth                           |
| AA2_2_15  | Month of birth                                  |
| AA2_3_15  | Year of birth                                   |
| Wave 5:   |   |
| A2A1_18   | R's original stated birthday - Correct          |
| A2A2_3_18 | Correct year of birth                           |
| A2A2_3_18 | Correct year of birth                           |
| AA2_2_18  | Month of birth                                  |
| AA2_3_18  | Year of birth                                   |

|                                   |
|-----------------------------------|
| <b>Death Date: Month and Year</b> |
|-----------------------------------|

| Wave | Variable | Label                      | Type |
|------|----------|----------------------------|------|
| 1    | RADYEAR  | radyear: R Death Year      | Cont |
| 1    | S1DYEAR  | s1dyear: w1 S Death Year   | Cont |
| 2    | S2DYEAR  | s2dyear: w2 S Death Year   | Cont |
| 3    | S3DYEAR  | s3dyear: w3 S Death Year   | Cont |
| 4    | S4DYEAR  | s4dyear: w4 S Death Year   | Cont |
| 5    | S5DYEAR  | s5dyear: w5 S Death Year   | Cont |
| 1    | RADMONTH | radmonth: R Death Month    | Cont |
| 1    | S1DMONTH | s1dmonth: w1 S Death Month | Cont |
| 2    | S2DMONTH | s2dmonth: w2 S Death Month | Cont |
| 3    | S3DMONTH | s3dmonth: w3 S Death Month | Cont |
| 4    | S4DMONTH | s4dmonth: w4 S Death Month | Cont |
| 5    | S5DMONTH | s5dmonth: w5 S Death Month | Cont |

### Descriptive Statistics

| Variable | N    | Mean    | Std Dev | Minimum | Maximum |
|----------|------|---------|---------|---------|---------|
| RADYEAR  | 5545 | 2010.36 | 4.90    | 2001.00 | 2018.00 |
| S1DYEAR  | 3268 | 2010.40 | 4.86    | 2001.00 | 2018.00 |
| S2DYEAR  | 3135 | 2010.42 | 4.85    | 2001.00 | 2018.00 |
| S3DYEAR  | 1163 | 2015.33 | 1.75    | 2010.00 | 2018.00 |
| S4DYEAR  | 542  | 2016.80 | 0.93    | 2015.00 | 2018.00 |
| S5DYEAR  | 0    | .       | .       | .       | .       |
| RADMONTH | 5446 | 6.61    | 3.54    | 1.00    | 12.00   |
| S1DMONTH | 3226 | 6.61    | 3.54    | 1.00    | 12.00   |
| S2DMONTH | 3090 | 6.57    | 3.53    | 1.00    | 12.00   |
| S3DMONTH | 1161 | 6.55    | 3.59    | 1.00    | 12.00   |
| S4DMONTH | 539  | 6.50    | 3.57    | 1.00    | 12.00   |
| S5DMONTH | 0    | .       | .       | .       | .       |

### How Constructed

RADYEAR is the respondent's reported death year. RADMONTH is the respondent's reported month of death.

RADYEAR and RADMONTH are based on questions asked as part of the Next-of-Kin interview asked at each wave starting with Wave 2. The Next-of-Kin interview is conducted in the case the subject is reported no longer alive.

RADYEAR and RADMONTH are assigned special missing values .d or .r, if the answer was don't know or refused, respectively. In Wave 2, RADYEAR and RADMONTH are also assigned the special missing value .s if the date of death question is skipped; that is if the cause of death was "Accident or violence" or "Other Cause" (and not from sickness). The variables are set to special missing .x if the respondent has not yet passed away.

SwDYEAR and SwDMONTH indicate the spouse's death year and month. They are taken from the respondent's spouse's RADYEAR and RADMONTH. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

### Cross Wave Differences in MHAS

In Wave 2, the date of death question is skipped if the reported cause of death was "Accident or violence" or "Other Cause" (and not from sickness).

Starting in Wave 3, date of death was asked in all these cases.

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|          |                             |
|----------|-----------------------------|
| Wave 2:  |                             |
| SA8A_1   | when did (name) die - month |
| SA8A_2   | when did (name) die - year  |
| Wave 3:  |                             |
| SA8_1_12 | Month deceased passed away  |
| SA8_2_12 | Year deceased passed away   |
| Wave 4:  |                             |
| SA8_1_15 | Month deceased passed away  |
| SA8_2_15 | Year deceased passed away   |
| Wave 5:  |                             |
| SA8_1_18 | Month deceased passed away  |
| SA8_2_18 | Year deceased passed away   |

Age at Interview (Months and Years)

| Wave | Variable | Label                           | Type |
|------|----------|---------------------------------|------|
| 1    | R1AGEY   | rlagey: w1 R Age (years) at ivw | Cont |
| 2    | R2AGEY   | r2agey: w2 R Age (years) at ivw | Cont |
| 3    | R3AGEY   | r3agey: w3 R Age (years) at ivw | Cont |
| 4    | R4AGEY   | r4agey: w4 R Age (years) at ivw | Cont |
| 5    | R5AGEY   | r5agey: w5 R Age (years) at ivw | Cont |
| 1    | S1AGEY   | slagey: w1 S Age (years) at ivw | Cont |
| 2    | S2AGEY   | s2agey: w2 S Age (years) at ivw | Cont |
| 3    | S3AGEY   | s3agey: w3 S Age (years) at ivw | Cont |
| 4    | S4AGEY   | s4agey: w4 S Age (years) at ivw | Cont |
| 5    | S5AGEY   | s5agey: w5 S Age (years) at ivw | Cont |

Descriptive Statistics

| Variable | N     | Mean  | Std Dev | Minimum | Maximum |
|----------|-------|-------|---------|---------|---------|
| R1AGEY   | 15186 | 60.26 | 10.84   | 18.00   | 105.00  |
| R2AGEY   | 13700 | 62.59 | 10.51   | 21.00   | 107.00  |
| R3AGEY   | 15716 | 64.33 | 10.78   | 21.00   | 115.00  |
| R4AGEY   | 14776 | 66.13 | 10.66   | 22.00   | 113.00  |
| R5AGEY   | 17094 | 63.95 | 11.72   | 16.00   | 107.00  |
| S1AGEY   | 10648 | 58.16 | 10.08   | 18.00   | 105.00  |
| S2AGEY   | 9561  | 60.57 | 9.82    | 21.00   | 107.00  |
| S3AGEY   | 10588 | 62.26 | 9.89    | 21.00   | 115.00  |
| S4AGEY   | 9650  | 63.98 | 9.78    | 22.00   | 101.00  |
| S5AGEY   | 7637  | 66.53 | 9.39    | 18.00   | 100.00  |

How Constructed

RwAGEY is the respondent's age in years at the time of the current wave's interview and it comes from the recorded age in the sampling directory. If RwAGEY is missing, it is calculated using the self-reported birth year, RABYEAR, and the year of interview, RwiWY. RwAGEY is assigned special missing values .d or .r, respectively, if respondents don't know or refuse to answer the date of birth or if the interview data is missing. RwAGEY is set to plain missing (.) for respondents who did not respond to any waves.

SwAGEY is the current spouse's age in years at the time of the current wave's interview and is taken from the spouse's RwAGEY. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

Unlike the HRS, the respondent's age in the Harmonized MHAS is taken from the reported age and is not calculated using the date of birth and date of interview unless the reported age is missing.

MHAS Variables Used

|         |                    |
|---------|--------------------|
| Wave 1: |                    |
| EDAD_01 | Age 2001           |
| Wave 2: |                    |
| EDAD_03 | Age on sample list |
| Wave 3: |                    |



|         |          |
|---------|----------|
| AGE_12  | Age      |
| Wave 4: |          |
| AGE_15  | Age 2015 |
| Wave 5: |          |
| AGE_18  | Age 2018 |

Gender

| Wave | Variable  | Label                                     | Type  |
|------|-----------|---|-------|
| 1    | RAGENDER  | ragender: R Gender                        | Categ |
| 1    | S1GENDER  | s1gender: w1 S Gender                     | Categ |
| 2    | S2GENDER  | s2gender: w2 S Gender                     | Categ |
| 3    | S3GENDER  | s3gender: w3 S Gender                     | Categ |
| 4    | S4GENDER  | s4gender: w4 S Gender                     | Categ |
| 5    | S5GENDER  | s5gender: w5 S Gender                     | Categ |
| 2    | R2GENDERF | r2genderf: w2 R Gender Report Update Flag | Categ |
| 3    | R3GENDERF | r3genderf: w3 R Gender Report Update Flag | Categ |
| 4    | R4GENDERF | r4genderf: w4 R Gender Report Update Flag | Categ |
| 5    | R5GENDERF | r5genderf: w5 R Gender Report Update Flag | Categ |
| 2    | S2GENDERF | s2genderf: w2 S Gender Report Update Flag | Categ |
| 3    | S3GENDERF | s3genderf: w3 S Gender Report Update Flag | Categ |
| 4    | S4GENDERF | s4genderf: w4 S Gender Report Update Flag | Categ |
| 5    | S5GENDERF | s5genderf: w5 S Gender Report Update Flag | Categ |

Descriptive Statistics

| Variable  | N     | Mean | Std Dev | Minimum | Maximum |
|-----------|-------|------|---------|---------|---------|
| RAGENDER  | 26839 | 1.56 | 0.50    | 1.00    | 2.00    |
| S1GENDER  | 10864 | 1.50 | 0.50    | 1.00    | 2.00    |
| S2GENDER  | 9940  | 1.49 | 0.50    | 1.00    | 2.00    |
| S3GENDER  | 10592 | 1.50 | 0.50    | 1.00    | 2.00    |
| S4GENDER  | 9823  | 1.50 | 0.50    | 1.00    | 2.00    |
| S5GENDER  | 8675  | 1.50 | 0.50    | 1.00    | 2.00    |
| R2GENDERF | 25064 | 0.00 | 0.00    | 0.00    | 0.00    |
| R3GENDERF | 21187 | 0.00 | 0.01    | 0.00    | 1.00    |
| R4GENDERF | 19602 | 0.00 | 0.03    | 0.00    | 1.00    |
| R5GENDERF | 17114 | 0.00 | 0.01    | 0.00    | 1.00    |
| S2GENDERF | 9569  | 0.00 | 0.00    | 0.00    | 0.00    |
| S3GENDERF | 10592 | 0.00 | 0.01    | 0.00    | 1.00    |
| S4GENDERF | 9692  | 0.00 | 0.03    | 0.00    | 1.00    |
| S5GENDERF | 7638  | 0.00 | 0.01    | 0.00    | 1.00    |

Categorical Variable Codes

|                           |           |          |           |           |           |
|---------------------------|-----------|----------|-----------|-----------|-----------|
| Value-----                | RAGENDER  |          |           |           |           |
| 1.Man                     | 11790     |          |           |           |           |
| 2.Woman                   | 15049     |          |           |           |           |
| Value-----                | S1GENDER  | S2GENDER | S3GENDER  | S4GENDER  | S5GENDER  |
| .u:Unmar                  | 4197      | 3753     | 4782      | 4845      | 5224      |
| .v:SP NR                  | 125       | 11       | 349       | 111       | 316       |
| 1.Man                     | 5471      | 5036     | 5297      | 4934      | 4355      |
| 2.Woman                   | 5393      | 4904     | 5295      | 4889      | 4320      |
| Value-----                | R2GENDERF |          | R3GENDERF | R4GENDERF | R5GENDERF |
| 0.no gender problem       | 25064     |          | 21184     | 19588     | 17113     |
| 1.gender prob, used first |           |          | 3         | 14        | 1         |
| Value-----                | S2GENDERF |          | S3GENDERF | S4GENDERF | S5GENDERF |
| .u:Unmar                  | 4008      |          | 4782      | 4846      | 5227      |
| .v:SP NR                  | 127       |          | 349       | 241       | 501       |

|                           |  |      |       |      |      |
|---------------------------|--|------|-------|------|------|
| 0.no gender problem       |  | 9569 | 10590 | 9684 | 7637 |
| 1.gender prob, used first |  |      | 2     | 8    | 1    |

How Constructed

Gender was derived by looking at reports from all waves of data. The latest report of non-missing gender was always used. In addition, RAGENDERF is a flag variable which indicates whether a contradiction between reports was found. RAGENDERF was set to 0 for no contradictions or if they were part of the new sample, and to 1 if contradictions between reports were found.

RAGENDER is set to 1 for man and 2 for woman. RAGENDER is set to plain missing (.) for respondents who did not respond to any waves.

SwGENDER indicates the current wave's spouses' gender. It is taken from the spouse's RAGENDER. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

RAGENDERF is available starting in Wave 2.

Differences with the RAND HRS/Harmonized HRS

The RAND HRS does not include a flag for differing reports of respondent gender.

MHAS Variables Used

|         |                  |
|---------|------------------|
| Wave 1: |                  |
| SEX0    | respondent's sex |
| Wave 2: |                  |
| AA1     | gender           |
| Wave 3: |                  |
| A1_12   | Respondent's sex |
| AA1_12  | Respondent's sex |
| Wave 4: |                  |
| A1_15   | Respondent's sex |
| AA1_15  | Respondent's sex |
| Wave 5: |                  |
| A1_18   | R's sex          |
| AA1_18  | R's sex          |

Education

| Wave | Variable | Label                            | Type |
|------|----------|----------------------------------|------|
| 1    | RAEDYRS  | raedyrs: R Years of Education    | Cont |
| 1    | S1EDYRS  | s1edyrs: w1 S Years of Education | Cont |
| 2    | S2EDYRS  | s2edyrs: w2 S Years of Education | Cont |
| 3    | S3EDYRS  | s3edyrs: w3 S Years of Education | Cont |
| 4    | S4EDYRS  | s4edyrs: w4 S Years of Education | Cont |
| 5    | S5EDYRS  | s5edyrs: w5 S Years of Education | Cont |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| RAEDYRS  | 26474 | 6.10 | 5.09    | 0.00    | 22.00   |
| S1EDYRS  | 10639 | 4.87 | 4.52    | 0.00    | 19.00   |
| S2EDYRS  | 9840  | 4.77 | 4.47    | 0.00    | 19.00   |
| S3EDYRS  | 10540 | 5.94 | 4.79    | 0.00    | 22.00   |
| S4EDYRS  | 9670  | 6.11 | 4.80    | 0.00    | 22.00   |
| S5EDYRS  | 8526  | 6.29 | 4.84    | 0.00    | 22.00   |

How Constructed

RAEDYRS is the respondent's number of years of education. RAEDYRS is calculated using the report of the last year and grade that the respondent completed in school, collected in the Demographics section (Section A). Since the education question is only asked in the first interview, RAEDYRS takes the value of the respondent's first report throughout all waves of data. If the respondent reports a level completed, but not a grade completed, then the following values are assigned: 0 (no education), 3 (primary school), 7 (secondary of technical/commercial school), 10 (preparatory/high school), 11 (basic teaching school), 14 (college), 18 (graduate). If the respondent reports a level completed and a grade completed, then a base value is assigned for the level completed and the grade is added. The base values are assigned as follows: 0 (no education or primary school), 6 (secondary or technical/commerical school), 9 (preparatory/high school or basic teaching school), 12 (college), 16 (graduate school). When respondents don't know or refuse to answer the level of education, RAEDYRS is assigned special missing values .d or .r, respectively. Other missing values are assigned special missing value .m.

SwEDYRS indicates the current wave's spouse's years of education. It is taken from the spouse's RAEDYRS. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

In Waves 1 and 2 the number of years of education is calculated and released in the MHAS data set. Starting in Wave 3, MHAS releases the level and grade of education that the respondent completed separately, and the number of years of education is calculated using these variables for the Harmonized MHAS. Despite this difference, the questions are asked comparably across waves.

Differences with the RAND HRS/Harmonized HRS

In RAND HRS, the maximum value that RAEDYRS can take is 17, indicating 17 or more years of education. In the MHAS, there is no maximum number of years set.

MHAS Variables Used

|         |                                 |
|---------|---------------------------------|
| Wave 1: |                                 |
| ESCOLA  | respondent's years of education |
| Wave 2: |                                 |

|          |                                 |
|----------|---------------------------------|
| AA4A_3   | new person's years of education |
| Wave 3:  |                                 |
| AA4A1_12 | Level of education              |
| AA4A2_12 | Grade of education              |
| Wave 4:  |                                 |
| AA4A1_15 | Level of education              |
| AA4A2_15 | Grade of education              |
| Wave 5:  |                                 |
| AA4A1_18 | Level of education              |
| AA4A2_18 | Grade of education              |

### Education: Categories by ISCED Codes

| Wave | Variable  | Label                                   | Type  |
|------|-----------|---|-------|
| 1    | RAEDISCED | raedisced: R Education by ISCED Code    | Categ |
| 1    | S1EDISCED | s1edisced: w1 S Education by ISCED Code | Categ |
| 2    | S2EDISCED | s2edisced: w2 S Education by ISCED Code | Categ |
| 3    | S3EDISCED | s3edisced: w3 S Education by ISCED Code | Categ |
| 4    | S4EDISCED | s4edisced: w4 S Education by ISCED Code | Categ |
| 5    | S5EDISCED | s5edisced: w5 S Education by ISCED Code | Categ |

### Descriptive Statistics

| Variable  | N     | Mean | Std Dev | Minimum | Maximum |
|-----------|-------|------|---------|---------|---------|
| RAEDISCED | 26474 | 1.64 | 1.56    | 0.00    | 6.00    |
| S1EDISCED | 10639 | 1.30 | 1.32    | 0.00    | 6.00    |
| S2EDISCED | 9840  | 1.27 | 1.30    | 0.00    | 6.00    |
| S3EDISCED | 10540 | 1.55 | 1.44    | 0.00    | 6.00    |
| S4EDISCED | 9670  | 1.59 | 1.45    | 0.00    | 6.00    |
| S5EDISCED | 8526  | 1.64 | 1.47    | 0.00    | 6.00    |

### Categorical Variable Codes

| Value-----                           | RAEDISCED |
|--------------------------------------|-----------|
| .d:DK                                | 141       |
| .m:Missing                           | 114       |
| .r:Refuse                            | 110       |
| 0.Less than primary education        | 4596      |
| 1.Primary education                  | 12421     |
| 2.Lower secondary education          | 5212      |
| 3.Upper secondary education          | 797       |
| 5.First stage of tertiary education  | 2638      |
| 6.Second stage of tertiary education | 810       |

| Value-----                           | S1EDISCED | S2EDISCED | S3EDISCED | S4EDISCED | S5EDISCED |
|--------------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                                | 8         | 16        | 10        | 107       | 103       |
| .m:Missing                           |           | 65        | 41        | 43        | 42        |
| .r:Refuse                            | 1         | 1         | 1         | 1         | 3         |
| .u:Unmar                             | 4205      | 3755      | 4782      | 4846      | 5224      |
| .v:SP NR                             | 333       | 27        | 349       | 112       | 317       |
| 0.Less than primary education        | 2326      | 2200      | 1665      | 1449      | 1190      |
| 1.Primary education                  | 5744      | 5375      | 5421      | 4902      | 4281      |
| 2.Lower secondary education          | 1418      | 1249      | 1872      | 1804      | 1649      |
| 3.Upper secondary education          | 288       | 243       | 423       | 403       | 367       |
| 5.First stage of tertiary education  | 786       | 705       | 1025      | 995       | 922       |
| 6.Second stage of tertiary education | 77        | 68        | 134       | 117       | 117       |

### How Constructed

RAEDISCED is constructed to provide a harmonized measure of education using the ISCED 1997 International Standard Classification of Education ISCED codes. For more information on ISCED codes see [www.uis.unesco.org](http://www.uis.unesco.org).

Respondents were asked the last year or grade that they completed in school. Since the education question is only asked in the first interview, RAEDISCED takes the value of the respondent's first report throughout all waves of data. RAEDISCED is coded as follows: 0.Less than primary education, 1.Primary education, 2.Lower secondary education, 3.Upper secondary education, 5.First stage of tertiary education, 6.Second stage of tertiary education. A value of 0 is assigned if no education was completed. A value of 1 is assigned if primary school was completed. A value of 2 is assigned if secondary, or technical or commercial school was completed. A value of 3 is assigned if preparatory or high school was completed. A value of 5 is assigned if basic teaching school or college was completed. A value of 6 is assigned if

graduate school was completed. A value of 4 is not assigned for RAEDISCED in the Harmonized MHAS. RAEDISCED is assigned special missing values .d or .r, if they answered don't know or refused, respectively. RAEDISCED is assigned the special missing value .m if the section was not completed. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwEDISCED indicates the current wave's spouse's ISCED code. It is taken from the respondent's spouse's RAEDISCED. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

The RAND HRS does not include an International Standard Classification of Education categorization of education achievements.

MHAS Variables Used

|          |                         |
|----------|-------------------------|
| Wave 1:  |                         |
| A3_1     | level of education      |
| Wave 2:  |                         |
| AA4A_1   | education level - level |
| Wave 3:  |                         |
| AA4A1_12 | Level of education      |
| Wave 4:  |                         |
| AA4A1_15 | Level of education      |
| Wave 5:  |                         |
| AA4A1_18 | Level of education      |

|  |
|--|
| <b>Education: Harmonized Education</b> |
|--|

| Wave | Variable | Label                              | Type  |
|------|----------|------------------------------------|-------|
| 1    | RAEDUCL  | raeduc1: R Harmonized Education    | Categ |
| 1    | S1EDUCL  | s1educ1: w1 S Harmonized Education | Categ |
| 2    | S2EDUCL  | s2educ1: w2 S Harmonized Education | Categ |
| 3    | S3EDUCL  | s3educ1: w3 S Harmonized Education | Categ |
| 4    | S4EDUCL  | s4educ1: w4 S Harmonized Education | Categ |
| 5    | S5EDUCL  | s5educ1: w5 S Harmonized Education | Categ |

## Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| RAEDUCL  | 26474 | 1.29 | 0.68    | 1.00    | 3.00    |
| S1EDUCL  | 10918 | 1.19 | 0.56    | 1.00    | 3.00    |
| S2EDUCL  | 9840  | 1.18 | 0.55    | 1.00    | 3.00    |
| S3EDUCL  | 10540 | 1.26 | 0.64    | 1.00    | 3.00    |
| S4EDUCL  | 9676  | 1.27 | 0.65    | 1.00    | 3.00    |
| S5EDUCL  | 8526  | 1.29 | 0.67    | 1.00    | 3.00    |

## Categorical Variable Codes

| Value-----                       | RAEDUCL |
|----------------------------------|---------|
| .d:DK                            | 141     |
| .m:Missing                       | 114     |
| .r:Refuse                        | 110     |
| 1.Less than upper secondary      | 22229   |
| 2.Upper secondary and vocational | 797     |
| 3.Tertiary                       | 3448    |

| Value-----                       | S1EDUCL | S2EDUCL | S3EDUCL | S4EDUCL | S5EDUCL |
|----------------------------------|---------|---------|---------|---------|---------|
| .d:DK                            | 22      | 16      | 10      | 107     | 103     |
| .m:Missing                       | 88      | 73      | 41      | 48      | 42      |
| .r:Refuse                        | 1       | 1       | 1       | 2       | 3       |
| .u:Unmar                         | 4051    | 3754    | 4782    | 4845    | 5224    |
| .v:SP NR                         | 106     | 20      | 349     | 101     | 317     |
| 1.Less than upper secondary      | 9729    | 8824    | 8958    | 8161    | 7120    |
| 2.Upper secondary and vocational | 299     | 243     | 423     | 403     | 367     |
| 3.Tertiary                       | 890     | 773     | 1159    | 1112    | 1039    |

## How Constructed

RAEDUCL is a three-tier harmonized scale developed to compare education levels across countries. This Harmonized education scale is a simplified version of ISCED 1997 International Standard Classification of Education ISCED codes, used to construct RAEDISCED. For more information on ISCED codes see [www.uis.unesco.org](http://www.uis.unesco.org).

Respondents were asked the last year or grade that they completed in school. Since the education question is only asked in the first interview, RAEDUCL takes the value of the respondent's first report throughout all waves of data. RAEDUCL is coded as follows: 1.Less than upper secondary education, 2.Upper secondary & vocational training, and 3.Tertiary education. Respondents are assigned a code of 1 if the respondent has an educational level equivalent to a code of 0, 1, or 2 for RAEDISCED, corresponding to no school, primary school, secondary school, or technical or commercial school. Respondents are assigned a code of 2 if the respondent has an educational level equivalent to a code of 3 or 4 for RAEDISCED, corresponding to preparatory or high school. Respondents are assigned a code of 3 if the respondent has an educational level equivalent to a code of 5 or 6 for RAEDISCED, corresponding to college or graduate school. RAEDUCL is assigned special missing values .d or .r, if they answered don't know or refused, respectively. RAEDUCL is assigned the special missing value .m if the section was not completed. The variables are set to plain missing (.) for respondents who did not respond to the current wave.



SwEDUCL indicates the current wave’s spouse’s harmonized scale of education in each wave. It is taken from the respondent's spouse's RAEDUCL. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

A comparable variable is available in the Harmonized HRS.

MHAS Variables Used

|          |                         |
|----------|-------------------------|
| Wave 1:  |                         |
| A3_1     | level of education      |
| Wave 2:  |                         |
| AA4A_1   | education level - level |
| Wave 3:  |                         |
| AA4A1_12 | Level of education      |
| Wave 4:  |                         |
| AA4A1_15 | Level of education      |
| Wave 5:  |                         |
| AA4A1_18 | Level of education      |

Literacy and Numeracy

| Wave | Variable   | Label                                       | Type  |
|------|------------|---|-------|
| 1    | RALITERATE | raliterate: R Knows how to read or write    | Categ |
| 1    | S1LITERATE | s1literate: w1 S Knows how to read or write | Categ |
| 2    | S2LITERATE | s2literate: w2 S Knows how to read or write | Categ |
| 3    | S3LITERATE | s3literate: w3 S Knows how to read or write | Categ |
| 4    | S4LITERATE | s4literate: w4 S Knows how to read or write | Categ |
| 5    | S5LITERATE | s5literate: w5 S Knows how to read or write | Categ |
| 1    | RANUMERATE | ranumerate: R Knows how to count            | Categ |
| 1    | S1NUMERATE | s1numerate: w1 S Knows how to count         | Categ |
| 2    | S2NUMERATE | s2numerate: w2 S Knows how to count         | Categ |
| 3    | S3NUMERATE | s3numerate: w3 S Knows how to count         | Categ |
| 4    | S4NUMERATE | s4numerate: w4 S Knows how to count         | Categ |
| 5    | S5NUMERATE | s5numerate: w5 S Knows how to count         | Categ |

Descriptive Statistics

| Variable   | N     | Mean | Std Dev | Minimum | Maximum |
|------------|-------|------|---------|---------|---------|
| RALITERATE | 26449 | 0.86 | 0.35    | 0.00    | 1.00    |
| S1LITERATE | 10609 | 0.83 | 0.37    | 0.00    | 1.00    |
| S2LITERATE | 9817  | 0.82 | 0.38    | 0.00    | 1.00    |
| S3LITERATE | 10529 | 0.87 | 0.34    | 0.00    | 1.00    |
| S4LITERATE | 9661  | 0.88 | 0.33    | 0.00    | 1.00    |
| S5LITERATE | 8519  | 0.88 | 0.32    | 0.00    | 1.00    |
| RANUMERATE | 26445 | 0.95 | 0.22    | 0.00    | 1.00    |
| S1NUMERATE | 10604 | 0.94 | 0.24    | 0.00    | 1.00    |
| S2NUMERATE | 9814  | 0.92 | 0.27    | 0.00    | 1.00    |
| S3NUMERATE | 10528 | 0.95 | 0.21    | 0.00    | 1.00    |
| S4NUMERATE | 9658  | 0.96 | 0.21    | 0.00    | 1.00    |
| S5NUMERATE | 8515  | 0.96 | 0.20    | 0.00    | 1.00    |

Categorical Variable Codes

|            |            |            |            |            |            |
|------------|------------|------------|------------|------------|------------|
| Value----- | RALITERATE |            |            |            |            |
| .d:DK      | 148        |            |            |            |            |
| .m:Missing | 209        |            |            |            |            |
| .r:Refuse  | 33         |            |            |            |            |
| 0.No       | 3726       |            |            |            |            |
| 1.Yes      | 22723      |            |            |            |            |
| Value----- | S1LITERATE | S2LITERATE | S3LITERATE | S4LITERATE | S5LITERATE |
| .d:DK      | 22         | 24         | 13         | 111        | 108        |
| .m:Missing |            | 65         | 41         | 43         | 41         |
| .r:Refuse  | 17         | 16         | 9          | 6          | 6          |
| .u:Unmar   | 4205       | 3755       | 4782       | 4846       | 5224       |
| .v:SP NR   | 333        | 27         | 349        | 112        | 317        |
| 0.No       | 1757       | 1739       | 1363       | 1199       | 989        |
| 1.Yes      | 8852       | 8078       | 9166       | 8462       | 7530       |
| Value----- | RANUMERATE |            |            |            |            |
| .d:DK      | 149        |            |            |            |            |
| .m:Missing | 209        |            |            |            |            |
| .r:Refuse  | 36         |            |            |            |            |
| 0.No       | 1401       |            |            |            |            |
| 1.Yes      | 25044      |            |            |            |            |

| Value----- | S1NUMERATE | S2NUMERATE | S3NUMERATE | S4NUMERATE | S5NUMERATE |
|------------|------------|------------|------------|------------|------------|
| .d:DK      | 26         | 27         | 14         | 113        | 111        |
| .m:Missing |            | 65         | 41         | 43         | 41         |
| .r:Refuse  | 18         | 16         | 9          | 7          | 7          |
| .u:Unmar   | 4205       | 3755       | 4782       | 4846       | 5224       |
| .v:SP NR   | 333        | 27         | 349        | 112        | 317        |
| 0.No       | 658        | 753        | 483        | 426        | 350        |
| 1.Yes      | 9946       | 9061       | 10045      | 9232       | 8165       |

How Constructed

RALITERATE indicates if the respondent knows how to read and write a message. RANUMERATE indicates if the respondent knows how to count from 1 to 10. RALITERATE and RANUMERATE are derived by looking at the report from the Demographics section (Section A/AA) and are only asked in the first interview. When respondents don’t know or refuse to answer the level of education, RALITERATE and RANUMERATE are assigned special missing values .d or .r, respectively. Missing responses are assigned special missing .m.

SwLITERATE and SwNUMERATE indicate whether the current wave’s spouse knows how to read and write a message and count from 1 to 10. They are taken from the spouse's RALITERATE and RANUMERATE variables, respectively. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

Comparable variables are not available as part of the RAND HRS or Harmonized HRS.

MHAS Variables Used

|          |  |
|----------|--|
| Wave 1:  |  |
| A3_1     | level of education                         |
| A4       | literacy                                   |
| A5       | count 1 to 10                              |
| Wave 2:  |  |
| AA4A_1   | education level - level                    |
| AA4B     | read a note                                |
| AA5      | count to 10                                |
| Wave 3:  |  |
| AA4A1_12 | Level of education                         |
| AA4B_12  | Respondent can read/write message          |
| AA5_12   | Respondent can count 1 to 10               |
| Wave 4:  |  |
| AA4A1_15 | Level of education                         |
| AA4B_15  | Respondent knows how to read/write message |
| AA5_15   | Respondent can count from 1 to 10          |
| Wave 5:  |  |
| AA4A1_18 | Level of education                         |
| AA4B_18  | Respondent knows how to read/write message |
| AA5_18   | Respondent can count from 1 to 10          |

| Indigenous Language |           |  |       |
|---------------------|-----------|--|-------|
| Wave Variable       |           | Label                                      | Type  |
| 1                   | RAINDLANG | raindlang: R Speaks Indigenous Language    | Categ |
| 1                   | S1INDLANG | s1indlang: w1 S Speaks Indigenous Language | Categ |
| 3                   | S3INDLANG | s3indlang: w3 S Speaks Indigenous Language | Categ |
| 4                   | S4INDLANG | s4indlang: w4 S Speaks Indigenous Language | Categ |
| 5                   | S5INDLANG | s5indlang: w5 S Speaks Indigenous Language | Categ |

Descriptive Statistics

| Variable  | N     | Mean | Std Dev | Minimum | Maximum |
|-----------|-------|------|---------|---------|---------|
| RAINDLANG | 25804 | 0.08 | 0.27    | 0.00    | 1.00    |
| S1INDLANG | 10616 | 0.08 | 0.27    | 0.00    | 1.00    |
| S3INDLANG | 10158 | 0.09 | 0.28    | 0.00    | 1.00    |
| S4INDLANG | 9329  | 0.08 | 0.28    | 0.00    | 1.00    |
| S5INDLANG | 8224  | 0.09 | 0.28    | 0.00    | 1.00    |

Categorical Variable Codes

|                               |           |           |           |           |
|-------------------------------|-----------|-----------|-----------|-----------|
| Value-----                    | RAINDLANG |           |           |           |
| .d:DK                         |           | 122       |           |           |
| .m:Missing                    |           | 299       |           |           |
| .p:Proxy interview, not asked |           | 570       |           |           |
| .r:Refuse                     |           | 44        |           |           |
| 0.No                          |           | 23803     |           |           |
| 1.Yes                         |           | 2001      |           |           |
| Value-----                    | S1INDLANG | S3INDLANG | S4INDLANG | S5INDLANG |
| .d:DK                         | 14        | 7         | 98        | 96        |
| .m:Missing                    |           | 141       | 138       | 116       |
| .p:Proxy interview, not asked |           | 260       | 236       | 220       |
| .r:Refuse                     |           | 23        | 20        | 18        |
| .u:Unmar                      |           | 4205      | 4782      | 4846      |
| .v:SP NR                      |           | 328       | 349       | 112       |
| 0.No                          |           | 9785      | 9280      | 8537      |
| 1.Yes                         |           | 831       | 878       | 792       |

How Constructed

RAINDLANG indicates whether the respondent speaks any indigenous language. The question is part of the Demographics section (Section A/AA) and is only asked in the first interview. When respondents don’t know or refuse to answer, RAINDLANG is assigned special missing values .d or .r, respectively. Starting in Wave 3, the indigenous language question was only asked during direct interviews. A special missing value .p is assigned to indicate if the new interview was completed by proxy. Other missing responses are assigned special missing .m.

SwINDLANG indicates whether the current wave’s spouse speaks any indigenous language, and it is taken from the spouse's RAINDLANG variable. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

Respondents are asked if they speak any indigenous language as part of their baseline interview. In Wave 1, the question is asked during both direct and proxy interviews. This question was not asked in Wave 2. Starting in Wave 3, the indigenous language question was only asked during direct interviews.

Differences with the RAND HRS/Harmonized HRS

Comparable variables are not available as part of the RAND HRS or Harmonized HRS.

MHAS Variables Used

|          |                                       |
|----------|---------------------------------------|
| Wave 1:  |                                       |
| A38      | speak indigenous dialect              |
| Wave 3:  |                                       |
| AA37B_12 | Respondent speaks indigenous language |
| Wave 4:  |                                       |
| AA37B_15 | Respondent speaks indigenous language |
| Wave 5:  |                                       |
| AA37B_18 | Respondent speaks indigenous language |

Current Marital Status: Current Partnership Status

| Wave | Variable | Label                                    | Type  |
|------|----------|--|-------|
| 1    | R1MPART  | r1mpart: w1 R Current Partnership Status | Categ |
| 2    | R2MPART  | r2mpart: w2 R Current Partnership Status | Categ |
| 3    | R3MPART  | r3mpart: w3 R Current Partnership Status | Categ |
| 4    | R4MPART  | r4mpart: w4 R Current Partnership Status | Categ |
| 5    | R5MPART  | r5mpart: w5 R Current Partnership Status | Categ |
| 1    | S1MPART  | s1mpart: w1 S Current Partnership Status | Categ |
| 2    | S2MPART  | s2mpart: w2 S Current Partnership Status | Categ |
| 3    | S3MPART  | s3mpart: w3 S Current Partnership Status | Categ |
| 4    | S4MPART  | s4mpart: w4 S Current Partnership Status | Categ |
| 5    | S5MPART  | s5mpart: w5 S Current Partnership Status | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1MPART  | 15184 | 0.03 | 0.17    | 0.00    | 1.00    |
| R2MPART  | 13703 | 0.10 | 0.31    | 0.00    | 1.00    |
| R3MPART  | 15723 | 0.07 | 0.26    | 0.00    | 1.00    |
| R4MPART  | 14779 | 0.07 | 0.26    | 0.00    | 1.00    |
| R5MPART  | 17114 | 0.09 | 0.28    | 0.00    | 1.00    |
| S1MPART  | 10648 | 0.04 | 0.21    | 0.00    | 1.00    |
| S2MPART  | 9740  | 0.14 | 0.35    | 0.00    | 1.00    |
| S3MPART  | 10592 | 0.10 | 0.31    | 0.00    | 1.00    |
| S4MPART  | 9652  | 0.11 | 0.31    | 0.00    | 1.00    |
| S5MPART  | 7638  | 0.10 | 0.30    | 0.00    | 1.00    |

Categorical Variable Codes

| Value----- | R1MPART | R2MPART | R3MPART | R4MPART | R5MPART |
|------------|---------|---------|---------|---------|---------|
| .d:DK      |         | 1       |         |         |         |
| .m:Missing |         | 2       |         |         |         |
| 0.No       |         | 14715   | 12278   | 14582   | 13673   |
| 1.Yes      |         | 469     | 1425    | 1141    | 1106    |
|            |         |         |         |         | 15615   |
|            |         |         |         |         | 1499    |
| Value----- | S1MPART | S2MPART | S3MPART | S4MPART | S5MPART |
| .d:DK      |         | 1       |         |         |         |
| .u:Unmar   |         | 4205    | 4130    | 4782    | 4847    |
| .v:SP NR   |         | 333     | 149     | 349     | 280     |
| 0.No       |         | 10179   | 8369    | 9491    | 8587    |
| 1.Yes      |         | 469     | 1371    | 1101    | 1065    |
|            |         |         |         |         | 6875    |
|            |         |         |         |         | 763     |

How Constructed

Partnership is implied in all waves if the respondent reports being currently unmarried/unpartnered but is coupled with another respondent through HwCPL.

RwMPART indicates whether a respondent partnership is implied in the current wave. A code of 0 indicates it has not been implied that the respondent is partnered; a code of 1 indicates it has been implied that the respondent is partnered. When respondents don't know or refuse to answer, RwMPART is assigned special missing values .d or .r, respectively. Other missing responses are assigned special missing value .m. RwMPART is set to plain missing (.) for respondents who did not respond to the current wave.

SwMPART indicates whether the current wave's spouse is considered partnered. It is taken from the spouse's RwMPART. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|           |                                     |  |
|-----------|-------------------------------------|--|
| Wave 1:   |                                     |  |
| A10       | current marital status              |  |
| TIPENT_01 | Type of interview 2001              |  |
| Wave 2:   |                                     |  |
| A3        | respondent's marital status         |  |
| AA10      | marital status                      |  |
| TIPENT_03 | Type of interview 2003              |  |
| Wave 3:   |                                     |  |
| A3_12     | Current marital status              |  |
| AA10_12   | Respondent's current marital status |  |
| TIPENT_12 | Type of interview 2012              |  |
| Wave 4:   |                                     |  |
| A3_15     | Current marital status              |  |
| AA10_15   | Respondent's current marital status |  |
| TIPENT_15 | Type of interview 2015              |  |
| Wave 5:   |                                     |  |
| A3_18     | Current marital status              |  |
| AA10_18   | R's current marital status          |  |
| TIPENT_18 | Type of interview 2018              |  |

Current Marital Status: With Partnership

| Wave | Variable | Label                        | Type  |
|------|----------|------------------------------|-------|
| 1    | R1MSTAT  | r1mstat: w1 R Marital Status | Categ |
| 2    | R2MSTAT  | r2mstat: w2 R Marital Status | Categ |
| 3    | R3MSTAT  | r3mstat: w3 R Marital Status | Categ |
| 4    | R4MSTAT  | r4mstat: w4 R Marital Status | Categ |
| 5    | R5MSTAT  | r5mstat: w5 R Marital Status | Categ |
| 1    | S1MSTAT  | s1mstat: w1 S Marital Status | Categ |
| 2    | S2MSTAT  | s2mstat: w2 S Marital Status | Categ |
| 3    | S3MSTAT  | s3mstat: w3 S Marital Status | Categ |
| 4    | S4MSTAT  | s4mstat: w4 S Marital Status | Categ |
| 5    | S5MSTAT  | s5mstat: w5 S Marital Status | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1MSTAT  | 15184 | 2.55 | 2.50    | 1.00    | 8.00    |
| R2MSTAT  | 13703 | 2.81 | 2.53    | 1.00    | 8.00    |
| R3MSTAT  | 15723 | 2.80 | 2.58    | 1.00    | 8.00    |
| R4MSTAT  | 14779 | 2.90 | 2.57    | 1.00    | 8.00    |
| R5MSTAT  | 17114 | 2.85 | 2.58    | 1.00    | 8.00    |
| S1MSTAT  | 10648 | 1.09 | 0.41    | 1.00    | 3.00    |
| S2MSTAT  | 9564  | 1.30 | 0.71    | 1.00    | 3.00    |
| S3MSTAT  | 10592 | 1.21 | 0.61    | 1.00    | 3.00    |
| S4MSTAT  | 9652  | 1.22 | 0.63    | 1.00    | 3.00    |
| S5MSTAT  | 7638  | 1.20 | 0.60    | 1.00    | 5.00    |

Categorical Variable Codes

| Value-----      | R1MSTAT | R2MSTAT | R3MSTAT | R4MSTAT | R5MSTAT |
|-----------------|---------|---------|---------|---------|---------|
| .d:DK           |         | 1       |         |         |         |
| .m:Missing      | 2       |         |         |         |         |
| 1.Married       | 10512   | 8270    | 9800    | 8826    | 10388   |
| 3.Partnered     | 469     | 1425    | 1141    | 1106    | 1499    |
| 4.Separated     | 931     | 760     | 922     | 1042    | 968     |
| 5.Divorced      | 205     | 185     | 290     | 383     | 338     |
| 7.Widowed       | 2532    | 2544    | 2850    | 2814    | 3044    |
| 8.Never married | 535     | 519     | 720     | 608     | 877     |
| Value-----      | S1MSTAT | S2MSTAT | S3MSTAT | S4MSTAT | S5MSTAT |
| .u:Unmar        | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR        | 333     | 131     | 349     | 280     | 501     |
| 1.Married       | 10179   | 8147    | 9491    | 8587    | 6872    |
| 3.Partnered     | 469     | 1417    | 1101    | 1065    | 763     |
| 4.Separated     |         |         |         |         | 2       |
| 5.Divorced      |         |         |         |         | 1       |

How Constructed

This variable is created using current marital status reported for each wave in the Demographics section. Partnership status is implied for respondents reporting being currently unmarried/unpartnered but coupled with another respondent through HwCPL.

RwMSTAT records the respondent's marital status in the current wave with implied partnership status, RwMPART. A code of 1 indicates that the respondent is married. A code of 3 indicates that the respondent is partnered, either through self-reported or implied partnership. A code of 4 indicates that the respondent is separated. A code of 5 indicates that the respondent is divorced. A code of 7 indicates that the respondent is widowed. A code of 8 indicates that the respondent has never been married. When



respondents don't know or refuse to answer, RWRMSTAT is assigned special missing values .d or .r, respectively. Other missing responses are assigned special missing value .m. RWRMSTAT is set to plain missing (.) for respondents who did not respond to the current wave.

SWMSTAT records the current wave's spouse's marital status. It is taken from the spouse's RWRMSTAT. In addition to special missing codes of RWRMSTAT, SWMSTAT employs two other special missing codes. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

In the RAND HRS, the variable RWRMSTATH can take value 2, indicating that the respondent is married but the spouse is absent. The MHAS marital status variable does not ask respondents whether they are married but their spouse is absent. The variable RWRMSTATH is never equal to 2 in the Harmonized MHAS.

MHAS Variables Used

|           |                                     |
|-----------|-------------------------------------|
| Wave 1:   |                                     |
| A10       | current marital status              |
| TIPENT_01 | Type of interview 2001              |
| Wave 2:   |                                     |
| A3        | respondent's marital status         |
| AA10      | marital status                      |
| TIPENT_03 | Type of interview 2003              |
| Wave 3:   |                                     |
| A3_12     | Current marital status              |
| AA10_12   | Respondent's current marital status |
| TIPENT_12 | Type of interview 2012              |
| Wave 4:   |                                     |
| A3_15     | Current marital status              |
| AA10_15   | Respondent's current marital status |
| TIPENT_15 | Type of interview 2015              |
| Wave 5:   |                                     |
| A3_18     | Current marital status              |
| AA10_18   | R's current marital status          |
| TIPENT_18 | Type of interview 2018              |

Current Marital Status: Without Partnership

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1MSTATH | r1mstath: w1 R Marital Status w/o Partnership Filled | Categ |
| 2    | R2MSTATH | r2mstath: w2 R Marital Status w/o Partnership Filled | Categ |
| 3    | R3MSTATH | r3mstath: w3 R Marital Status w/o Partnership Filled | Categ |
| 4    | R4MSTATH | r4mstath: w4 R Marital Status w/o Partnership Filled | Categ |
| 5    | R5MSTATH | r5mstath: w5 R Marital Status w/o Partnership Filled | Categ |
| 1    | S1MSTATH | s1mstath: w1 S Marital Status w/o Partnership Filled | Categ |
| 2    | S2MSTATH | s2mstath: w2 S Marital Status w/o Partnership Filled | Categ |
| 3    | S3MSTATH | s3mstath: w3 S Marital Status w/o Partnership Filled | Categ |
| 4    | S4MSTATH | s4mstath: w4 S Marital Status w/o Partnership Filled | Categ |
| 5    | S5MSTATH | s5mstath: w5 S Marital Status w/o Partnership Filled | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1MSTATH | 14730 | 2.54 | 2.54    | 1.00    | 8.00    |
| R2MSTATH | 13703 | 2.73 | 2.56    | 1.00    | 8.00    |
| R3MSTATH | 15723 | 2.81 | 2.58    | 1.00    | 8.00    |
| R4MSTATH | 14779 | 2.91 | 2.58    | 1.00    | 8.00    |
| R5MSTATH | 17114 | 2.86 | 2.59    | 1.00    | 8.00    |
| S1MSTATH | 10194 | 1.01 | 0.20    | 1.00    | 8.00    |
| S2MSTATH | 9564  | 1.19 | 0.59    | 1.00    | 8.00    |
| S3MSTATH | 10592 | 1.21 | 0.65    | 1.00    | 8.00    |
| S4MSTATH | 9652  | 1.24 | 0.70    | 1.00    | 8.00    |
| S5MSTATH | 7638  | 1.22 | 0.71    | 1.00    | 8.00    |

Categorical Variable Codes

| Value-----      | R1MSTATH | R2MSTATH | R3MSTATH | R4MSTATH | R5MSTATH |
|-----------------|----------|----------|----------|----------|----------|
| .d:DK           |          | 1        |          |          |          |
| .m:Missing      | 456      |          |          |          |          |
| 1.Married       | 10512    | 8808     | 9800     | 8826     | 10388    |
| 3.Partnered     |          | 881      | 1110     | 1036     | 1450     |
| 4.Separated     | 935      | 762      | 940      | 1088     | 982      |
| 5.Divorced      | 209      | 185      | 291      | 385      | 343      |
| 7.Widowed       | 2535     | 2545     | 2860     | 2829     | 3047     |
| 8.Never married | 539      | 522      | 722      | 615      | 904      |
| Value-----      | S1MSTATH | S2MSTATH | S3MSTATH | S4MSTATH | S5MSTATH |
| .m:Missing      | 454      |          |          |          |          |
| .u:Unmar        | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR        | 333      | 131      | 349      | 280      | 501      |
| 1.Married       | 10179    | 8685     | 9491     | 8587     | 6872     |
| 3.Partnered     |          | 873      | 1070     | 995      | 723      |
| 4.Separated     | 4        | 2        | 18       | 46       | 15       |
| 5.Divorced      | 4        |          | 1        | 2        | 4        |
| 7.Widowed       | 3        | 1        | 10       | 15       | 3        |
| 8.Never married | 4        | 3        | 2        | 7        | 21       |

How Constructed

This variable is created using current marital status reported for each wave in the Demographic section. RwmSTATH ignores the implied partnership status, using the RwmPART variable, and indicates the reported marital status in the current wave. A code of 1 indicates that the respondent is married. A code of 3 indicates that the respondent is partnered, only through self-report. A code of 4 indicates that the respondent is separated. A code of 5 indicates that the respondent is divorced. A code of 7 indicates that the respondent is widowed. A code of 8 indicates that the respondent has never been married. When

respondents don’t know or refuse to answer, RwmSTATH is assigned special missing values .d or .r, respectively. Other missing responses are assigned special missing value .m. RwmSTATH is set to plain missing (.) for respondents who did not respond to the current wave.

SwmSTATH indicates the current wave’s spouse’s marital status without partnership. It is taken from the spouse's RwmSTATH. In addition to specific missing codes used for RwmSTATH, SwmSTATH employs two other special missing codes. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

In the RAND HRS, the variable RwmSTATH can take value 2, indicating that the respondent is married but the spouse is absent. The MHAS marital status variable does not ask respondents whether they are married but their spouse is absent. The variable RwmSTATH is never equal to 2 in the Harmonized MHAS.

MHAS Variables Used

|         |                                     |  |
|---------|-------------------------------------|--|
| Wave 1: |                                     |  |
| A10     | current marital status              |  |
| Wave 2: |                                     |  |
| A3      | respondent's marital status         |  |
| AA10    | marital status                      |  |
| Wave 3: |                                     |  |
| A3_12   | Current marital status              |  |
| AA10_12 | Respondent's current marital status |  |
| Wave 4: |                                     |  |
| A3_15   | Current marital status              |  |
| AA10_15 | Respondent's current marital status |  |
| Wave 5: |                                     |  |
| A3_18   | Current marital status              |  |
| AA10_18 | R's current marital status          |  |

|                            |
|----------------------------|
| <b>Number of Marriages</b> |
|----------------------------|

| Wave | Variable | Label                            | Type |
|------|----------|----------------------------------|------|
| 1    | R1MRCT   | r1mrct: w1 R Number of Marriages | Cont |
| 2    | R2MRCT   | r2mrct: w2 R Number of Marriages | Cont |
| 3    | R3MRCT   | r3mrct: w3 R Number of Marriages | Cont |
| 4    | R4MRCT   | r4mrct: w4 R Number of Marriages | Cont |
| 5    | R5MRCT   | r5mrct: w5 R Number of Marriages | Cont |
| 1    | S1MRCT   | s1mrct: w1 S Number of Marriages | Cont |
| 2    | S2MRCT   | s2mrct: w2 S Number of Marriages | Cont |
| 3    | S3MRCT   | s3mrct: w3 S Number of Marriages | Cont |
| 4    | S4MRCT   | s4mrct: w4 S Number of Marriages | Cont |
| 5    | S5MRCT   | s5mrct: w5 S Number of Marriages | Cont |

### Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1MRCT   | 15121 | 1.13 | 0.55    | 0.00    | 11.00   |
| R2MRCT   | 13572 | 1.15 | 0.56    | 0.00    | 11.00   |
| R3MRCT   | 15347 | 1.15 | 0.61    | 0.00    | 29.00   |
| R4MRCT   | 13874 | 1.16 | 0.59    | 0.00    | 11.00   |
| R5MRCT   | 16167 | 1.16 | 0.66    | 0.00    | 24.00   |
| S1MRCT   | 10596 | 1.17 | 0.50    | 0.00    | 11.00   |
| S2MRCT   | 9623  | 1.18 | 0.52    | 0.00    | 11.00   |
| S3MRCT   | 10316 | 1.18 | 0.50    | 0.00    | 11.00   |
| S4MRCT   | 9056  | 1.21 | 0.53    | 0.00    | 11.00   |
| S5MRCT   | 7170  | 1.21 | 0.59    | 0.00    | 24.00   |

### How Constructed

The number of marriages is asked at the first interview the respondent completed in the MHAS and then it is updated in the following interviews. If the respondent reports not being single in the first interview then they are asked their marital status before their current marriage/union and then the total number of times they were in an union or married (not including the current union/last union). These questions were used to derive R<sub>w</sub>MRCT.

After the first interview, R<sub>w</sub>MRCT is updated if the respondent reports being currently married/union, if their last marriage/union ended, and if their current marriage started since the last interview.

R<sub>w</sub>MRCT is assigned special missing values .d or .r, if they answered don't know or refused, respectively. R<sub>w</sub>MRCT is assigned the special missing value .m if the section was not completed. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

S<sub>w</sub>MRCT indicates the current wave's spouse's number of marriages. It is taken from the respondent's spouse's R<sub>w</sub>MRCT. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

### Cross Wave Differences in MHAS

Marriage history, including number of marriages, is asked only during the first interview and the variable generally proceeds from current marital status and the number of marriages. However, in the follow-up interview the respondent is only asked about the changes in marital status, including current marital status, if the last marriage/union ended, and if the current marriage started since the last interview. These questions were used to update the number of marriages variable.

## Differences with the RAND HRS/Harmonized HRS

No differences known.

## MHAS Variables Used

|          |  |
|----------|--|
| Wave 1:  |  |
| A10      | current marital status                                   |
| A13      | married before   |
| A14      | times married  |
| Wave 2:  |  |
| A3       | respondent's marital status                              |
| A4       | still cohabitating with same person since 2001           |
| A5       | has last marriage/union ended since 2001                 |
| A6       | current marriage/union started in last two years         |
| AA10     | marital status   |
| AA13A    | previous union   |
| AA14     | besides most recent, how many unions                     |
| Wave 3:  |  |
| A3_12    | Current marital status                                   |
| A4_12    | Married/in union with same person from last interview    |
| A5_12    | Marriage/union ended since last interview                |
| A6_12    | Marriage/union started since last interview              |
| AA10_12  | Respondent's current marital status                      |
| AA13A_12 | Respondent ever married/in union before current/last ma  |
| AA13B_12 | Respondent's marital status before current marriage/uni  |
| AA14_12  | Not including current/last marriage/union how many time  |
| Wave 4:  |  |
| A3_15    | Current marital status                                   |
| A4_15    | Married or in union with same person from last interview |
| A5_15    | Marriage or union ended since last interview             |
| A6_15    | Marriage or union started since last interview           |
| AA10_15  | Respondent's current marital status                      |
| AA13A_15 | Respondent ever married or in union before current/last  |
| AA13B_15 | Respondent's marital status before current marriage or   |
| AA14_15  | Not including current/last marriage or union how many t  |
| Wave 5:  |  |
| A3_18    | Current marital status                                   |
| A4_18    | Married or in union with same person from last interview |
| A5_18    | Marriage or union ended since last interview             |
| A6_18    | Marriage or union started since last interview           |
| AA10_18  | R's current marital status                               |
| AA13A_18 | R ever married or in union before current/last marriage  |
| AA13B_18 | R's marital status before current marriage or union      |
| AA14_18  | Not including current/last marriage or union how many t  |

Urban or Rural

| Wave | Variable  | Label                                       | Type  |
|------|-----------|---|-------|
| 1    | H1RURAL   | h1rural: w1 lives in rural or urban         | Categ |
| 3    | H3RURAL   | h3rural: w3 lives in rural or urban         | Categ |
| 4    | H4RURAL   | h4rural: w4 lives in rural or urban         | Categ |
| 5    | H5RURAL   | h5rural: w5 lives in rural or urban         | Categ |
| 1    | H1RURAL_M | h1rural_m: w1 Size of Locality of Residence | Categ |
| 3    | H3RURAL_M | h3rural_m: w3 Size of Locality of Residence | Categ |
| 4    | H4RURAL_M | h4rural_m: w4 Size of Locality of Residence | Categ |
| 5    | H5RURAL_M | h5rural_m: w5 Size of Locality of Residence | Categ |

Descriptive Statistics

| Variable  | N     | Mean | Std Dev | Minimum | Maximum |
|-----------|-------|------|---------|---------|---------|
| H1RURAL   | 15186 | 0.26 | 0.44    | 0.00    | 1.00    |
| H3RURAL   | 15723 | 0.31 | 0.46    | 0.00    | 1.00    |
| H4RURAL   | 14779 | 0.30 | 0.46    | 0.00    | 1.00    |
| H5RURAL   | 17114 | 0.31 | 0.46    | 0.00    | 1.00    |
| H1RURAL_M | 15186 | 1.84 | 1.16    | 1.00    | 4.00    |
| H3RURAL_M | 15723 | 1.93 | 1.22    | 1.00    | 4.00    |
| H4RURAL_M | 14779 | 1.93 | 1.21    | 1.00    | 4.00    |
| H5RURAL_M | 17114 | 1.96 | 1.22    | 1.00    | 4.00    |

Categorical Variable Codes

|              |           |           |           |           |
|--------------|-----------|-----------|-----------|-----------|
| Value-----   | H1RURAL   | H3RURAL   | H4RURAL   | H5RURAL   |
| 0.urban      | 11225     | 10864     | 10392     | 11742     |
| 1.rural      | 3961      | 4859      | 4387      | 5372      |
| Value-----   | H1RURAL_M | H3RURAL_M | H4RURAL_M | H5RURAL_M |
| 1.Urban      | 8957      | 9123      | 8450      | 9524      |
| 2.Semi-urban | 2268      | 1741      | 1942      | 2218      |
| 3.Semi-rural | 1381      | 1738      | 1425      | 1885      |
| 4.Rural      | 2580      | 3121      | 2962      | 3487      |

How Constructed

HwRURAL indicates whether the respondent's household resides in an urban or rural location. HwRURAL is set to 0 if the respondent's household resides in an urban location, and is set to 1 if the respondent's household resides in a rural location. HwRURAL\_M indicates the locality size where the respondent's household resides. HwRURAL\_M is set to 1 to indicate if the household resides in an 'Urban' location, 2 if in a 'Semi-urban' location, 3 if in a 'Semi-rural' location, and 4 if in a 'Rural' location. Missing responses are assigned special missing .m. HwRURAL and HwRURAL\_M are set to plain missing (.) for respondents who did not respond to the current wave.

Cross Wave Differences in MHAS

This variable is not available in Wave 2.

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

Wave 1:

|            |                    |
|------------|--------------------|
| TAMLOC_01  | Locality size 2001 |
| Wave 3:    |                    |
| TAM_LOC_12 | Locality Size 2012 |
| Wave 4:    |                    |
| TAM_LOC_15 | Locality size 2015 |
| Wave 5:    |                    |
| TAM_LOC_18 | Locality size 2018 |

**Section B: Health**



Self-Report of Health

| Wave | Variable | Label                                     | Type  |
|------|----------|---|-------|
| 1    | R1SHLT   | r1shlt: w1 R Self-report of health        | Categ |
| 2    | R2SHLT   | r2shlt: w2 R Self-report of health        | Categ |
| 3    | R3SHLT   | r3shlt: w3 R Self-report of health        | Categ |
| 4    | R4SHLT   | r4shlt: w4 R Self-report of health        | Categ |
| 5    | R5SHLT   | r5shlt: w5 R Self-report of health        | Categ |
| 1    | S1SHLT   | s1shlt: w1 S Self-report of health        | Categ |
| 2    | S2SHLT   | s2shlt: w2 S Self-report of health        | Categ |
| 3    | S3SHLT   | s3shlt: w3 S Self-report of health        | Categ |
| 4    | S4SHLT   | s4shlt: w4 S Self-report of health        | Categ |
| 5    | S5SHLT   | s5shlt: w5 S Self-report of health        | Categ |
| 1    | R1HLTC   | r1hltc: w1 R Self-report of health change | Categ |
| 2    | R2HLTC   | r2hltc: w2 R Self-report of health change | Categ |
| 3    | R3HLTC   | r3hltc: w3 R Self-report of health change | Categ |
| 4    | R4HLTC   | r4hltc: w4 R Self-report of health change | Categ |
| 5    | R5HLTC   | r5hltc: w5 R Self-report of health change | Categ |
| 1    | S1HLTC   | s1hltc: w1 S Self-report of health change | Categ |
| 2    | S2HLTC   | s2hltc: w2 S Self-report of health change | Categ |
| 3    | S3HLTC   | s3hltc: w3 S Self-report of health change | Categ |
| 4    | S4HLTC   | s4hltc: w4 S Self-report of health change | Categ |
| 5    | S5HLTC   | s5hltc: w5 S Self-report of health change | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1SHLT   | 14147 | 3.69 | 0.85    | 1.00    | 5.00    |
| R2SHLT   | 12521 | 3.78 | 0.82    | 1.00    | 5.00    |
| R3SHLT   | 14445 | 3.66 | 0.85    | 1.00    | 5.00    |
| R4SHLT   | 13847 | 3.73 | 0.83    | 1.00    | 5.00    |
| R5SHLT   | 15783 | 3.61 | 0.83    | 1.00    | 5.00    |
| S1SHLT   | 9983  | 3.66 | 0.85    | 1.00    | 5.00    |
| S2SHLT   | 8739  | 3.76 | 0.81    | 1.00    | 5.00    |
| S3SHLT   | 9864  | 3.64 | 0.84    | 1.00    | 5.00    |
| S4SHLT   | 9181  | 3.71 | 0.83    | 1.00    | 5.00    |
| S5SHLT   | 7073  | 3.66 | 0.81    | 1.00    | 5.00    |
| R1HLTC   | 14107 | 3.23 | 0.77    | 1.00    | 5.00    |
| R2HLTC   | 12521 | 3.28 | 0.79    | 1.00    | 5.00    |
| R3HLTC   | 14447 | 3.15 | 0.80    | 1.00    | 5.00    |
| R4HLTC   | 13847 | 3.18 | 0.80    | 1.00    | 5.00    |
| R5HLTC   | 15772 | 3.14 | 0.80    | 1.00    | 5.00    |
| S1HLTC   | 9953  | 3.22 | 0.76    | 1.00    | 5.00    |
| S2HLTC   | 8738  | 3.27 | 0.78    | 1.00    | 5.00    |
| S3HLTC   | 9866  | 3.13 | 0.79    | 1.00    | 5.00    |
| S4HLTC   | 9181  | 3.17 | 0.78    | 1.00    | 5.00    |
| S5HLTC   | 7068  | 3.19 | 0.78    | 1.00    | 5.00    |

Categorical Variable Codes

| Value-----                    | R1SHLT | R2SHLT | R3SHLT | R4SHLT | R5SHLT |
|-------------------------------|--------|--------|--------|--------|--------|
| .d:DK                         | 1      | 4      | 1      | 3      | 1      |
| .m:Missing                    | 4      |        |        |        |        |
| .p:Proxy interview, not asked | 1032   | 1178   | 1275   | 929    | 1328   |

|                               |  |        |        |        |        |        |
|-------------------------------|--|--------|--------|--------|--------|--------|
| .r:Refuse                     |  | 2      | 1      | 2      |        | 2      |
| 1.Excellent                   |  | 271    | 189    | 363    | 342    | 445    |
| 2.Very good                   |  | 627    | 396    | 646    | 465    | 796    |
| 3.Good                        |  | 4495   | 3559   | 4303   | 3710   | 4670   |
| 4.Fair                        |  | 6585   | 6204   | 7316   | 7347   | 8381   |
| 5.Poor                        |  | 2169   | 2173   | 1817   | 1983   | 1491   |
| Value-----                    |  | S1SHLT | S2SHLT | S3SHLT | S4SHLT | S5SHLT |
| .d:DK                         |  | 1      | 4      | 1      | 1      | 1      |
| .m:Missing                    |  | 3      |        |        |        |        |
| .p:Proxy interview, not asked |  | 660    | 821    | 726    | 470    | 563    |
| .r:Refuse                     |  | 1      |        | 1      |        | 1      |
| .u:Unmar                      |  | 4205   | 4009   | 4782   | 4847   | 5227   |
| .v:SP NR                      |  | 333    | 131    | 349    | 280    | 501    |
| 1.Excellent                   |  | 195    | 122    | 251    | 232    | 179    |
| 2.Very good                   |  | 464    | 281    | 467    | 325    | 312    |
| 3.Good                        |  | 3316   | 2583   | 2987   | 2513   | 1932   |
| 4.Fair                        |  | 4600   | 4346   | 5017   | 4905   | 3967   |
| 5.Poor                        |  | 1408   | 1407   | 1142   | 1206   | 683    |
| Value-----                    |  | R1HLTC | R2HLTC | R3HLTC | R4HLTC | R5HLTC |
| .d:DK                         |  | 12     | 4      | 1      | 3      | 7      |
| .m:Missing                    |  | 4      |        |        |        |        |
| .p:Proxy interview, not asked |  | 1032   | 1178   | 1275   | 929    | 1328   |
| .r:Refuse                     |  | 31     | 1      |        |        | 7      |
| 1.Much better                 |  | 314    | 282    | 544    | 442    | 628    |
| 2.Somewhat better             |  | 1334   | 1110   | 1513   | 1526   | 1626   |
| 3.More or less the same       |  | 7955   | 6608   | 8132   | 7479   | 9026   |
| 4.Somewhat worse              |  | 3797   | 3837   | 3723   | 3853   | 3882   |
| 5.Much worse                  |  | 707    | 684    | 535    | 547    | 610    |
| Value-----                    |  | S1HLTC | S2HLTC | S3HLTC | S4HLTC | S5HLTC |
| .d:DK                         |  | 9      | 4      |        | 1      | 4      |
| .m:Missing                    |  | 3      |        |        |        |        |
| .p:Proxy interview, not asked |  | 660    | 821    | 726    | 470    | 563    |
| .r:Refuse                     |  | 23     | 1      |        |        | 3      |
| .u:Unmar                      |  | 4205   | 4009   | 4782   | 4847   | 5227   |
| .v:SP NR                      |  | 333    | 131    | 349    | 280    | 501    |
| 1.Much better                 |  | 214    | 199    | 385    | 285    | 223    |
| 2.Somewhat better             |  | 919    | 747    | 1040   | 965    | 660    |
| 3.More or less the same       |  | 5767   | 4747   | 5656   | 5154   | 4026   |
| 4.Somewhat worse              |  | 2589   | 2612   | 2449   | 2466   | 1873   |
| 5.Much worse                  |  | 464    | 433    | 336    | 311    | 286    |

## How Constructed

RwSHLT is the respondent's self-reported general health status using the following scale: 1 for Excellent, 2 for Very Good, 3 for Good, 4 for Fair, and 5 for Poor. When respondents don't know or refuse to answer, RwSHLT is assigned special missing values .d or .r, respectively. Other missing responses are assigned special missing .m. Also, RwSHLT is set to the special missing value .p if the current interview was completed by proxy. RwSHLT is assigned plain missing (.) if the respondent did not participate in the current wave.

The SwSHLT variables are taken from the Wave 'w' spouse's self-reported RwSHLT variables. In addition to the special missing codes used in RwSHLT, SwSHLT employs the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

RwHLTC is the respondent's self-reported change in health compared to two years ago using the following scale: 1 for Much better, 2 for Somewhat better, 3 for More or less the same, 4 for Somewhat worse, and 5 for Much worse. When respondents don't know or refuse to answer, RwHLTC is assigned special missing values .d or .r, respectively. Other missing responses are assigned special missing .m. Also, RwHLTC is set to the special missing value .p if the current interview was completed by proxy. RwHLTC is assigned plain missing (.) if the respondent did not participate in the current wave.

The SwHLTC variables are taken from the Wave 'w' spouse's self-reported RwHLTC variables. In addition to the special missing codes used in RwHLTC, SwHLTC employs the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

While RwHLTC in the Harmonized MHAS and RAND HRS use the same answer scale through Wave 6 of the HRS, starting in HRS Wave 7, the answer scale is limited to responses of better, about the same, and worse.

MHAS Variables Used

|         |  |
|---------|--|
| Wave 1: |  |
| C1      | quality of health                                    |
| C2      | changes in health                                    |
| Wave 2: |  |
| C1      | health status  |
| C2      | health compared to two years ago                     |
| Wave 3: |  |
| C1_12   | Global self-reported quality of health               |
| C2A_12  | Compared to 2 years ago:Report your current health   |
| Wave 4: |  |
| C1_15   | Respondent's self-reported health                    |
| C2A_15  | Compared to 2 years ago: Respondent's current health |
| Wave 5: |  |
| C1_18   | R's self-reported health                             |
| C2A_18  | Compared to 2 years ago: R's current health          |

|   |
|---|
| <b>Activities of Daily Living (ADLs): Raw Recodes</b> |
|---|

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1DRESS  | r1dress: w1 R Difficulty-Dressing            | Categ |
| 2    | R2DRESS  | r2dress: w2 R Difficulty-Dressing            | Categ |
| 3    | R3DRESS  | r3dress: w3 R Difficulty-Dressing            | Categ |
| 4    | R4DRESS  | r4dress: w4 R Difficulty-Dressing            | Categ |
| 5    | R5DRESS  | r5dress: w5 R Difficulty-Dressing            | Categ |
| 1    | S1DRESS  | s1dress: w1 S Difficulty-Dressing            | Categ |
| 2    | S2DRESS  | s2dress: w2 S Difficulty-Dressing            | Categ |
| 3    | S3DRESS  | s3dress: w3 S Difficulty-Dressing            | Categ |
| 4    | S4DRESS  | s4dress: w4 S Difficulty-Dressing            | Categ |
| 5    | S5DRESS  | s5dress: w5 S Difficulty-Dressing            | Categ |
| 1    | R1WALKR  | r1walkr: w1 R Difficulty-Walking across room | Categ |
| 2    | R2WALKR  | r2walkr: w2 R Difficulty-Walking across room | Categ |
| 3    | R3WALKR  | r3walkr: w3 R Difficulty-Walking across room | Categ |
| 4    | R4WALKR  | r4walkr: w4 R Difficulty-Walking across room | Categ |
| 5    | R5WALKR  | r5walkr: w5 R Difficulty-Walking across room | Categ |
| 1    | S1WALKR  | s1walkr: w1 S Difficulty-Walking across room | Categ |
| 2    | S2WALKR  | s2walkr: w2 S Difficulty-Walking across room | Categ |
| 3    | S3WALKR  | s3walkr: w3 S Difficulty-Walking across room | Categ |
| 4    | S4WALKR  | s4walkr: w4 S Difficulty-Walking across room | Categ |
| 5    | S5WALKR  | s5walkr: w5 S Difficulty-Walking across room | Categ |
| 1    | R1BATH   | r1bath: w1 R Difficulty-Bathing or showering | Categ |
| 2    | R2BATH   | r2bath: w2 R Difficulty-Bathing or showering | Categ |
| 3    | R3BATH   | r3bath: w3 R Difficulty-Bathing or showering | Categ |
| 4    | R4BATH   | r4bath: w4 R Difficulty-Bathing or showering | Categ |
| 5    | R5BATH   | r5bath: w5 R Difficulty-Bathing or showering | Categ |
| 1    | S1BATH   | s1bath: w1 S Difficulty-Bathing or showering | Categ |
| 2    | S2BATH   | s2bath: w2 S Difficulty-Bathing or showering | Categ |
| 3    | S3BATH   | s3bath: w3 S Difficulty-Bathing or showering | Categ |
| 4    | S4BATH   | s4bath: w4 S Difficulty-Bathing or showering | Categ |
| 5    | S5BATH   | s5bath: w5 S Difficulty-Bathing or showering | Categ |
| 1    | R1EAT    | r1eat: w1 R Difficulty-Eating                | Categ |
| 2    | R2EAT    | r2eat: w2 R Difficulty-Eating                | Categ |
| 3    | R3EAT    | r3eat: w3 R Difficulty-Eating                | Categ |
| 4    | R4EAT    | r4eat: w4 R Difficulty-Eating                | Categ |
| 5    | R5EAT    | r5eat: w5 R Difficulty-Eating                | Categ |
| 1    | S1EAT    | s1eat: w1 S Difficulty-Eating                | Categ |
| 2    | S2EAT    | s2eat: w2 S Difficulty-Eating                | Categ |
| 3    | S3EAT    | s3eat: w3 S Difficulty-Eating                | Categ |
| 4    | S4EAT    | s4eat: w4 S Difficulty-Eating                | Categ |
| 5    | S5EAT    | s5eat: w5 S Difficulty-Eating                | Categ |
| 1    | R1BED    | r1bed: w1 R Difficulty-Getting in/out of bed | Categ |
| 2    | R2BED    | r2bed: w2 R Difficulty-Getting in/out of bed | Categ |
| 3    | R3BED    | r3bed: w3 R Difficulty-Getting in/out of bed | Categ |
| 4    | R4BED    | r4bed: w4 R Difficulty-Getting in/out of bed | Categ |
| 5    | R5BED    | r5bed: w5 R Difficulty-Getting in/out of bed | Categ |
| 1    | S1BED    | s1bed: w1 S Difficulty-Getting in/out of bed | Categ |
| 2    | S2BED    | s2bed: w2 S Difficulty-Getting in/out of bed | Categ |
| 3    | S3BED    | s3bed: w3 S Difficulty-Getting in/out of bed | Categ |
| 4    | S4BED    | s4bed: w4 S Difficulty-Getting in/out of bed | Categ |
| 5    | S5BED    | s5bed: w5 S Difficulty-Getting in/out of bed | Categ |

|   |         |   |       |
|---|---------|---|-------|
| 1 | R1TOILT | r1toilt: w1 R Difficulty-Using the toilet | Categ |
| 2 | R2TOILT | r2toilt: w2 R Difficulty-Using the toilet | Categ |
| 3 | R3TOILT | r3toilt: w3 R Difficulty-Using the toilet | Categ |
| 4 | R4TOILT | r4toilt: w4 R Difficulty-Using the toilet | Categ |
| 5 | R5TOILT | r5toilt: w5 R Difficulty-Using the toilet | Categ |
|   |         |   |       |
| 1 | S1TOILT | s1toilt: w1 S Difficulty-Using the toilet | Categ |
| 2 | S2TOILT | s2toilt: w2 S Difficulty-Using the toilet | Categ |
| 3 | S3TOILT | s3toilt: w3 S Difficulty-Using the toilet | Categ |
| 4 | S4TOILT | s4toilt: w4 S Difficulty-Using the toilet | Categ |
| 5 | S5TOILT | s5toilt: w5 S Difficulty-Using the toilet | Categ |

## Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
|          |       |      |         |         |         |
| R1DRESS  | 14048 | 0.07 | 0.27    | 0.00    | 9.00    |
| R2DRESS  | 12501 | 0.06 | 0.27    | 0.00    | 9.00    |
| R3DRESS  | 14443 | 0.10 | 0.38    | 0.00    | 9.00    |
| R4DRESS  | 13802 | 0.12 | 0.41    | 0.00    | 9.00    |
| R5DRESS  | 15759 | 0.11 | 0.42    | 0.00    | 9.00    |
|          |       |      |         |         |         |
| S1DRESS  | 9924  | 0.06 | 0.24    | 0.00    | 2.00    |
| S2DRESS  | 8737  | 0.05 | 0.24    | 0.00    | 9.00    |
| S3DRESS  | 9865  | 0.09 | 0.36    | 0.00    | 9.00    |
| S4DRESS  | 9165  | 0.10 | 0.34    | 0.00    | 9.00    |
| S5DRESS  | 7064  | 0.12 | 0.40    | 0.00    | 9.00    |
|          |       |      |         |         |         |
| R1WALKR  | 8199  | 0.11 | 0.41    | 0.00    | 9.00    |
| R2WALKR  | 7233  | 0.11 | 0.36    | 0.00    | 9.00    |
| R3WALKR  | 9921  | 0.14 | 0.50    | 0.00    | 9.00    |
| R4WALKR  | 9800  | 0.17 | 0.64    | 0.00    | 9.00    |
| R5WALKR  | 10127 | 0.16 | 0.59    | 0.00    | 9.00    |
|          |       |      |         |         |         |
| S1WALKR  | 5394  | 0.09 | 0.41    | 0.00    | 9.00    |
| S2WALKR  | 4765  | 0.09 | 0.31    | 0.00    | 9.00    |
| S3WALKR  | 6258  | 0.10 | 0.41    | 0.00    | 9.00    |
| S4WALKR  | 6052  | 0.12 | 0.52    | 0.00    | 9.00    |
| S5WALKR  | 4688  | 0.14 | 0.48    | 0.00    | 9.00    |
|          |       |      |         |         |         |
| R1BATH   | 8198  | 0.08 | 0.33    | 0.00    | 9.00    |
| R2BATH   | 7233  | 0.08 | 0.36    | 0.00    | 9.00    |
| R3BATH   | 9923  | 0.10 | 0.52    | 0.00    | 9.00    |
| R4BATH   | 9800  | 0.12 | 0.53    | 0.00    | 9.00    |
| R5BATH   | 10128 | 0.11 | 0.45    | 0.00    | 9.00    |
|          |       |      |         |         |         |
| S1BATH   | 5393  | 0.06 | 0.32    | 0.00    | 9.00    |
| S2BATH   | 4765  | 0.06 | 0.24    | 0.00    | 2.00    |
| S3BATH   | 6259  | 0.07 | 0.49    | 0.00    | 9.00    |
| S4BATH   | 6052  | 0.10 | 0.54    | 0.00    | 9.00    |
| S5BATH   | 4688  | 0.09 | 0.34    | 0.00    | 9.00    |
|          |       |      |         |         |         |
| R1EAT    | 8199  | 0.05 | 0.40    | 0.00    | 9.00    |
| R2EAT    | 7233  | 0.04 | 0.25    | 0.00    | 9.00    |
| R3EAT    | 9923  | 0.08 | 0.49    | 0.00    | 9.00    |
| R4EAT    | 9800  | 0.07 | 0.41    | 0.00    | 9.00    |
| R5EAT    | 10128 | 0.06 | 0.43    | 0.00    | 9.00    |
|          |       |      |         |         |         |
| S1EAT    | 5395  | 0.04 | 0.37    | 0.00    | 9.00    |
| S2EAT    | 4765  | 0.03 | 0.22    | 0.00    | 9.00    |
| S3EAT    | 6259  | 0.07 | 0.49    | 0.00    | 9.00    |
| S4EAT    | 6052  | 0.06 | 0.41    | 0.00    | 9.00    |
| S5EAT    | 4687  | 0.05 | 0.36    | 0.00    | 9.00    |

|         |       |      |      |      |      |
|---------|-------|------|------|------|------|
| R1BED   | 8199  | 0.10 | 0.34 | 0.00 | 9.00 |
| R2BED   | 7233  | 0.10 | 0.31 | 0.00 | 9.00 |
| R3BED   | 9921  | 0.13 | 0.39 | 0.00 | 9.00 |
| R4BED   | 9800  | 0.16 | 0.48 | 0.00 | 9.00 |
| R5BED   | 10126 | 0.13 | 0.43 | 0.00 | 9.00 |
|         |       |      |      |      |      |
| S1BED   | 5394  | 0.09 | 0.34 | 0.00 | 9.00 |
| S2BED   | 4765  | 0.08 | 0.30 | 0.00 | 9.00 |
| S3BED   | 6258  | 0.12 | 0.34 | 0.00 | 9.00 |
| S4BED   | 6052  | 0.14 | 0.42 | 0.00 | 9.00 |
| S5BED   | 4687  | 0.12 | 0.39 | 0.00 | 9.00 |
|         |       |      |      |      |      |
| R1TOILT | 8184  | 0.08 | 0.32 | 0.00 | 9.00 |
| R2TOILT | 7233  | 0.07 | 0.30 | 0.00 | 9.00 |
| R3TOILT | 9920  | 0.11 | 0.47 | 0.00 | 9.00 |
| R4TOILT | 9800  | 0.13 | 0.59 | 0.00 | 9.00 |
| R5TOILT | 10124 | 0.14 | 0.59 | 0.00 | 9.00 |
|         |       |      |      |      |      |
| S1TOILT | 5387  | 0.06 | 0.32 | 0.00 | 9.00 |
| S2TOILT | 4765  | 0.06 | 0.23 | 0.00 | 2.00 |
| S3TOILT | 6258  | 0.09 | 0.39 | 0.00 | 9.00 |
| S4TOILT | 6052  | 0.10 | 0.49 | 0.00 | 9.00 |
| S5TOILT | 4686  | 0.11 | 0.50 | 0.00 | 9.00 |

## Categorical Variable Codes

|                               |         |         |         |         |         |
|-------------------------------|---------|---------|---------|---------|---------|
| Value-----                    | R1DRESS | R2DRESS | R3DRESS | R4DRESS | R5DRESS |
| .d:DK                         | 31      |         | 1       | 7       | 2       |
| .m:Missing                    | 38      | 25      |         | 40      | 17      |
| .p:Proxy interview, not asked | 1032    | 1178    | 1275    | 929     | 1328    |
| .r:Refuse                     | 37      |         | 4       | 1       | 8       |
| 0.No                          | 13147   | 11745   | 13103   | 12296   | 14151   |
| 1.Yes                         | 883     | 741     | 1307    | 1456    | 1530    |
| 2.Can't Do                    | 16      | 13      | 22      | 39      | 63      |
| 9.Don't Do                    | 2       | 2       | 11      | 11      | 15      |
|                               |         |         |         |         |         |
| Value-----                    | S1DRESS | S2DRESS | S3DRESS | S4DRESS | S5DRESS |
| .d:DK                         | 26      |         | 1       | 7       | 1       |
| .m:Missing                    | 13      | 6       |         | 10      | 5       |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 25      |         |         |         | 5       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| 0.No                          | 9355    | 8285    | 9049    | 8290    | 6312    |
| 1.Yes                         | 562     | 446     | 800     | 852     | 716     |
| 2.Can't Do                    | 7       | 5       | 10      | 20      | 31      |
| 9.Don't Do                    |         | 1       | 6       | 3       | 5       |
|                               |         |         |         |         |         |
| Value-----                    | R1WALKR | R2WALKR | R3WALKR | R4WALKR | R5WALKR |
| .d:DK                         | 38      |         | 31      | 6       | 4       |
| .m:Missing                    | 40      | 47      |         | 40      | 18      |
| .r:Refuse                     | 138     | 5       | 4       | 1       | 85      |
| .s:Skip                       | 6771    | 6419    | 5767    | 4932    | 6880    |
| 0.No                          | 7411    | 6461    | 8733    | 8521    | 8742    |
| 1.Yes                         | 750     | 759     | 1142    | 1167    | 1311    |
| 2.Can't Do                    | 31      | 10      | 28      | 77      | 46      |
| 9.Don't Do                    | 7       | 3       | 18      | 35      | 28      |
|                               |         |         |         |         |         |
| Value-----                    | S1WALKR | S2WALKR | S3WALKR | S4WALKR | S5WALKR |
| .d:DK                         | 22      |         | 25      | 5       |         |
| .m:Missing                    | 14      | 23      |         | 10      | 6       |
| .r:Refuse                     | 89      | 3       | 2       |         | 56      |
| .s:Skip                       | 5129    | 4773    | 4307    | 3585    | 2888    |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| 0.No                          | 4965    | 4363    | 5663    | 5446    | 4110    |
| 1.Yes                         | 409     | 393     | 575     | 561     | 559     |

|            |         |         |         |         |         |
|------------|---------|---------|---------|---------|---------|
| 2.Can't Do | 14      | 8       | 14      | 32      | 12      |
| 9.Don't Do | 6       | 1       | 6       | 13      | 7       |
| Value----- | R1BATH  | R2BATH  | R3BATH  | R4BATH  | R5BATH  |
| .d:DK      | 38      |         | 31      | 6       | 3       |
| .m:Missing | 40      | 47      |         | 40      | 18      |
| .r:Refuse  | 139     | 5       | 2       | 1       | 85      |
| .s:Skip    | 6771    | 6419    | 5767    | 4932    | 6880    |
| 0.No       | 7629    | 6702    | 9161    | 8834    | 9192    |
| 1.Yes      | 542     | 517     | 722     | 907     | 896     |
| 2.Can't Do | 23      | 9       | 16      | 36      | 26      |
| 9.Don't Do | 4       | 5       | 24      | 23      | 14      |
| Value----- | S1BATH  | S2BATH  | S3BATH  | S4BATH  | S5BATH  |
| .d:DK      | 22      |         | 25      | 5       |         |
| .m:Missing | 14      | 23      |         | 10      | 6       |
| .r:Refuse  | 90      | 3       | 1       |         | 56      |
| .s:Skip    | 5129    | 4773    | 4307    | 3585    | 2888    |
| .u:Unmar   | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR   | 333     | 131     | 349     | 280     | 501     |
| 0.No       | 5099    | 4486    | 5923    | 5599    | 4310    |
| 1.Yes      | 281     | 272     | 313     | 425     | 368     |
| 2.Can't Do | 10      | 7       | 8       | 11      | 8       |
| 9.Don't Do | 3       |         | 15      | 17      | 2       |
| Value----- | R1EAT   | R2EAT   | R3EAT   | R4EAT   | R5EAT   |
| .d:DK      | 39      |         | 31      | 6       | 2       |
| .m:Missing | 40      | 47      |         | 40      | 18      |
| .r:Refuse  | 137     | 5       | 2       | 1       | 86      |
| .s:Skip    | 6771    | 6419    | 5767    | 4932    | 6880    |
| 0.No       | 7884    | 6959    | 9384    | 9248    | 9629    |
| 1.Yes      | 289     | 266     | 480     | 510     | 459     |
| 2.Can't Do | 14      | 6       | 36      | 29      | 23      |
| 9.Don't Do | 12      | 2       | 23      | 13      | 17      |
| Value----- | S1EAT   | S2EAT   | S3EAT   | S4EAT   | S5EAT   |
| .d:DK      | 22      |         | 25      | 5       |         |
| .m:Missing | 14      | 23      |         | 10      | 6       |
| .r:Refuse  | 88      | 3       | 1       |         | 57      |
| .s:Skip    | 5129    | 4773    | 4307    | 3585    | 2888    |
| .u:Unmar   | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR   | 333     | 131     | 349     | 280     | 501     |
| 0.No       | 5242    | 4620    | 5993    | 5775    | 4509    |
| 1.Yes      | 140     | 140     | 224     | 251     | 164     |
| 2.Can't Do | 6       | 4       | 27      | 17      | 9       |
| 9.Don't Do | 7       | 1       | 15      | 9       | 5       |
| Value----- | R1BED   | R2BED   | R3BED   | R4BED   | R5BED   |
| .d:DK      | 38      |         | 32      | 6       | 3       |
| .m:Missing | 40      | 47      |         | 40      | 18      |
| .r:Refuse  | 138     | 5       | 3       | 1       | 87      |
| .s:Skip    | 6771    | 6419    | 5767    | 4932    | 6880    |
| 0.No       | 7403    | 6557    | 8662    | 8363    | 8886    |
| 1.Yes      | 775     | 669     | 1234    | 1383    | 1201    |
| 2.Can't Do | 19      | 6       | 20      | 42      | 30      |
| 9.Don't Do | 2       | 1       | 5       | 12      | 9       |
| Value----- | S1BED   | S2BED   | S3BED   | S4BED   | S5BED   |
| .d:DK      | 22      |         | 26      | 5       |         |
| .m:Missing | 14      | 23      |         | 10      | 6       |
| .r:Refuse  | 89      | 3       | 1       |         | 57      |
| .s:Skip    | 5129    | 4773    | 4307    | 3585    | 2888    |
| .u:Unmar   | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR   | 333     | 131     | 349     | 280     | 501     |
| 0.No       | 4916    | 4385    | 5552    | 5269    | 4170    |
| 1.Yes      | 471     | 375     | 691     | 757     | 507     |
| 2.Can't Do | 5       | 4       | 14      | 22      | 7       |
| 9.Don't Do | 2       | 1       | 1       | 4       | 3       |
| Value----- | R1TOILT | R2TOILT | R3TOILT | R4TOILT | R5TOILT |
| .d:DK      | 44      |         | 33      | 6       | 6       |
| .m:Missing | 40      | 47      |         | 40      | 18      |
| .r:Refuse  | 147     | 5       | 3       | 1       | 86      |

|            |  |         |         |         |         |         |
|------------|--|---------|---------|---------|---------|---------|
| .s:Skip    |  | 6771    | 6419    | 5767    | 4932    | 6880    |
| 0.No       |  | 7614    | 6737    | 8976    | 8851    | 9042    |
| 1.Yes      |  | 547     | 486     | 895     | 866     | 1004    |
| 2.Can't Do |  | 20      | 8       | 33      | 52      | 47      |
| 9.Don't Do |  | 3       | 2       | 16      | 31      | 31      |
| Value----- |  | S1TOILT | S2TOILT | S3TOILT | S4TOILT | S5TOILT |
| .d:DK      |  | 25      |         | 26      | 5       | 1       |
| .m:Missing |  | 14      | 23      |         | 10      | 6       |
| .r:Refuse  |  | 93      | 3       | 1       |         | 57      |
| .s:Skip    |  | 5129    | 4773    | 4307    | 3585    | 2888    |
| .u:Unmar   |  | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR   |  | 333     | 131     | 349     | 280     | 501     |
| 0.No       |  | 5071    | 4503    | 5784    | 5565    | 4238    |
| 1.Yes      |  | 306     | 257     | 455     | 457     | 423     |
| 2.Can't Do |  | 7       | 5       | 13      | 18      | 16      |
| 9.Don't Do |  | 3       |         | 6       | 12      | 9       |

How Constructed

These variables recode the raw variables for difficulty with activities of daily living (ADLs) as they appear in the MHAS data except for missing values and accounting for skip patterns. The ADLs include dressing (RwDRESS), walking across a room (RwWALKR), bathing (RwBATH), eating (RwEAT), getting in and out of bed (RwBED), and using the toilet (RwTOILT). In the following, references to Rw[adl] apply to all these variables except RwDRESS.

For all waves, the ADL questions are skipped if no difficulty was reported with any of the tasks asked about earlier (questions H1 to H13), including the difficulty with dressing question. In these cases, Rw[adl] is set to a special missing .s. All the Rw[adl] and RwDRESS variables are set to 0 if the response is "no" difficulty; 1 if the response is "yes"; and 2 or 9 if the response is "can't do" or "don't do", respectively. These variables are coded .d for "don't know" and .r for refusals. If the difficulty question is skipped because of previous answers to the tasks asked about earlier (questions H1 to H13), then Rw[adl] is set to .s. If the answer is otherwise missing, then these variables are coded .m for "missing". In all waves, the question regarding difficulty dressing is part of the introductory questions asked at the beginning of the module (Section H). This question is skipped if interviews are completed by proxy and the variable RwDRESS is set to .p. These variables are assigned plain missing (.) if the respondent did not participate in the current wave.

SwWALKR, SwDRESS, SwBATH, SwEAT, SwBED, and SwTOILT indicate whether the respondent's spouse reported any difficulty with each one of these daily living activities and are taken directly from the spouse's Rw[adl] variables, respectively. In addition to the special missing codes used in the Rw[adl] variables, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

In the HRS introductory questions, respondents are asked whether they have difficulty jogging one mile. However, in the MHAS they ask if the respondent has any difficulty running or jogging one kilometer.

MHAS Variables Used

|         |                   |
|---------|-------------------|
| Wave 1: |                   |
| H1      | long walk         |
| H10     | pulling           |
| H11     | picking up        |
| H12     | picking up a coin |
| H13     | dressing          |
| H15_1   | difficult walking |
| H16_1   | difficult bathing |
| H17_1   | difficult eating  |



H18\_1 difficult getting in an out of bed  
 H19\_1 difficult using toilet  
 H4 sitting 2 hours  
 H5 getting up  
 H6 long climbing  
 H7 short climbing  
 H8 bending  
 H9 extending arms

## Wave 2:

H1 health problems-trouble walking blocks  
 H10 health problems-trouble pushing or pulling  
 H11 health problems-trouble carrying objects  
 H12 health problems-trouble picking up a coin  
 H13 health problems-trouble dressing self  
 H15A health problem-trouble walking  
 H15C has difficulties with activity  
 H16A health problem-have trouble bathing  
 H16C has difficulties with activity  
 H17A health problem-trouble eating or cutting  
 H17C has difficulties with activity  
 H18A health problem-get in/out of bed  
 H18C has difficulties with activity  
 H19A health problem-trouble going to bathroom  
 H19C has difficulties with activity  
 H4 health problems-trouble staying seated  
 H5 health problems-trouble getting up from chair  
 H6 health problems-trouble with flights of stairs  
 H7 health problems-trouble with 1 flight of stairs  
 H8 health problems-trouble sitting up  
 H9 health problems-trouble lifting arms

## Wave 3:

H10\_12 Because of health problem, difficulty pushing or pullin  
 H11\_12 Because of health problem, difficulty carrying objects  
 H12\_12 Because of health problem, difficulty picking up a coin  
 H13\_12 Because of health problem, difficulty dressing self  
 H15A\_12 Because of health problem, difficulty walking  
 H15C01\_12 You use guardrail to walk across room  
 H15C02\_12 You use walker to walk across room  
 H15C03\_12 You use staff to walk across room  
 H15C04\_12 You use crutches to walk across room  
 H15C05\_12 You use orthopedic shoes to walk across room  
 H15C06\_12 You use clamp to walk across room  
 H15C07\_12 You use prosthesis to walk across room  
 H15C08\_12 You use oxygen/respirator to walk across room  
 H15C09\_12 You use furniture/walls to walk across room  
 H15C10\_12 You use wheelchair/cart to walk across room  
 H15C11\_12 You use other to walk across room  
 H15C88\_12 RF equipment walk across room  
 H15C99\_12 DK equipment walk across room  
 H16A\_12 Because of health problem, difficulty bathing  
 H17A\_12 Because of health problem, difficulty eating or cutting  
 H18A\_12 Because of health problem, difficulty get in/out of bed  
 H18C01\_12 You use guardrail to get into or out of bed  
 H18C02\_12 You use walker to get into or out of bed  
 H18C03\_12 You use staff to get into or out of bed  
 H18C04\_12 You use crutches to get into or out of bed  
 H18C05\_12 You use orthopedic shoes to get into or out of bed  
 H18C06\_12 You use clamp to get into or out of bed  
 H18C07\_12 You use prosthesis to get into or out of bed  
 H18C08\_12 You use oxygen/respirator to get into or out of bed  
 H18C09\_12 You use furniture/walls to get into or out of bed  
 H18C10\_12 You use wheelchair/cart to get into or out of bed  
 H18C11\_12 You use other to get into or out of bed  
 H18C88\_12 RF equipment get into or out of bed

|           |   |
|-----------|---|
| H18C99_12 | DK equipment get into or out of bed                     |
| H19A_12   | Because of health problem, difficulty going to the bath |
| H1_12     | Because of health problem, difficulty walking blocks    |
| H4_12     | Because of health problem, difficulty staying seated    |
| H5_12     | Because of health problem, difficulty getting up from c |
| H6_12     | Because of health problem, difficulty with flights of s |
| H7_12     | Because of health problem, difficulty with 1 flight of  |
| H8_12     | Because of health problem, difficulty sitting up        |
| H9_12     | Because of health problem, difficulty lifting arms      |
| Wave 4:   |   |
| H10_15    | Because of health problem, does respondent have difficu |
| H11_15    | Because of health problem, does respondent have difficu |
| H12_15    | Because of health problem, does respondent have difficu |
| H13_15    | Because of health problem, does respondent have difficu |
| H14_15    | Does someone help respondent to get dressed             |
| H15A_15   | Because of health problem, does respondent have any dif |
| H15B_15   | Does respondent ever use equipment (to walk across a ro |
| H15C01_15 | Type of equipment respondent uses (to walk across a roo |
| H15C02_15 | Type of equipment respondent uses (to walk across a roo |
| H15C03_15 | Type of equipment respondent uses (to walk across a roo |
| H15C04_15 | Type of equipment respondent uses (to walk across a roo |
| H15C05_15 | Type of equipment respondent uses (to walk across a roo |
| H15C06_15 | Type of equipment respondent uses (to walk across a roo |
| H15C07_15 | Type of equipment respondent uses (to walk across a roo |
| H15C08_15 | Type of equipment respondent uses (to walk across a roo |
| H15C09_15 | Type of equipment respondent uses (to walk across a roo |
| H15C10_15 | Type of equipment respondent uses (to walk across a roo |
| H15C11_15 | Type of equipment respondent uses (to walk across a roo |
| H15C88_15 | Type of equipment respondent uses (to walk across a roo |
| H15C99_15 | Type of equipment respondent uses (to walk across a roo |
| H15D_15   | Does someone help respondent walking across a room      |
| H16A_15   | Because of health problem, does respondent have any dif |
| H16D_15   | Does someone help respondent bathing or showering       |
| H17A_15   | Because of health problem, does respondent have any dif |
| H17D_15   | Does someone help respondent eating                     |
| H18A_15   | Because of health problem, does respondent have any dif |
| H18B_15   | Does respondent ever use equipment (to get in or out of |
| H18C01_15 | Type of equipment respondent uses (to get in or out of  |
| H18C02_15 | Type of equipment respondent uses (to get in or out of  |
| H18C03_15 | Type of equipment respondent uses (to get in or out of  |
| H18C04_15 | Type of equipment respondent uses (to get in or out of  |
| H18C05_15 | Type of equipment respondent uses (to get in or out of  |
| H18C06_15 | Type of equipment respondent uses (to get in or out of  |
| H18C07_15 | Type of equipment respondent uses (to get in or out of  |
| H18C08_15 | Type of equipment respondent uses (to get in or out of  |
| H18C09_15 | Type of equipment respondent uses (to get in or out of  |
| H18C10_15 | Type of equipment respondent uses (to get in or out of  |
| H18C11_15 | Type of equipment respondent uses (to get in or out of  |
| H18C88_15 | Type of equipment respondent uses (to get in or out of  |
| H18C99_15 | Type of equipment respondent uses (to get in or out of  |
| H18D_15   | Does someone help respondent getting in or out of bed   |
| H19A_15   | Because of health problem, does respondent have any dif |
| H19D_15   | Does someone help respondent using the toilet           |
| H1_15     | Because of health problem, does respondent have difficu |
| H4_15     | Because of health problem, does respondent have difficu |
| H5_15     | Because of health problem, does respondent have difficu |
| H6_15     | Because of health problem, does respondent have difficu |
| H7_15     | Because of health problem, does respondent have difficu |
| H8_15     | Because of health problem, does respondent have difficu |
| H9_15     | Because of health problem, does respondent have difficu |
| Wave 5:   |   |
| H10_18    | Because of health problem, does R have difficulty pushi |
| H11_18    | Due to health problem, difficult for R to lift/carry ob |
| H12_18    | Due to health problem, does R have difficulty picking u |

|           |  |
|-----------|--|
| H13_18    | Due to health problem, difficult for R to dress, includ  |
| H14_18    | Does someone help R to get dressed                       |
| H15A_18   | Because of health problem, does R have any difficulty w  |
| H15B_18   | R ever uses equipment (to walk across room) such as can  |
| H15C01_18 | Type of equipment R uses (to walk across a room): Guard  |
| H15C02_18 | Type of equipment R uses (to walk across a room): Walke  |
| H15C03_18 | Type of equipment R uses (to walk across a room): Staff  |
| H15C04_18 | Type of equipment R uses (to walk across a room): Crutc  |
| H15C05_18 | Type of equipment R uses (to walk across a room): Ortho  |
| H15C06_18 | Type of equipment R uses (to walk across a room): Brace  |
| H15C07_18 | Type of equipment R uses (to walk across a room): Prost  |
| H15C08_18 | Type of equipment R uses (to walk across a room): Oxyge  |
| H15C09_18 | Type of equipment R uses (to walk across a room): Furni  |
| H15C10_18 | Type of equipment R uses (to walk across a room): Wheel  |
| H15C11_18 | Type of equipment R uses (to walk across a room): Other  |
| H15C88_18 | Type of equipment R uses (to walk across a room): RF     |
| H15C99_18 | Type of equipment R uses (to walk across a room): DK     |
| H15D_18   | Does someone help R walking across a room                |
| H16A_18   | Because of health problem, does R have any difficulty b  |
| H16D_18   | Does someone help R bathing or showering                 |
| H17A_18   | Due to health problem, does R have any difficulty eatin  |
| H17D_18   | Does someone help R eating                               |
| H18A_18   | Because of health problem, does R have any difficulty g  |
| H18B_18   | R ever uses equipment to get in or out of bed, e.g. can  |
| H18C01_18 | Type of equipment R uses (to get in or out of bed): Gua  |
| H18C02_18 | Type of equipment R uses (to get in or out of bed): Wal  |
| H18C03_18 | Type of equipment R uses (to get in or out of bed): Sta  |
| H18C04_18 | Type of equipment R uses (to get in or out of bed): Cru  |
| H18C05_18 | Type of equipment R uses (to get in or out of bed): Ort  |
| H18C06_18 | Type of equipment R uses (to get in or out of bed): Bra  |
| H18C07_18 | Type of equipment R uses (to get in or out of bed): Pro  |
| H18C08_18 | Type of equipment R uses (to get in or out of bed): Oxy  |
| H18C09_18 | Type of equipment R uses (to get in or out of bed): Fur  |
| H18C10_18 | Type of equipment R uses (to get in or out of bed): Whe  |
| H18C11_18 | Type of equipment R uses (to get in or out of bed): Oth  |
| H18C88_18 | Type of equipment R uses (to get in or out of bed): RF   |
| H18C99_18 | Type of equipment R uses (to get in or out of bed): DK   |
| H18D_18   | Does someone help R getting in or out of bed             |
| H19A_18   | Because of health problem, does R have any difficulty u  |
| H19D_18   | Does someone help R using the toilet                     |
| H1_18     | Because of health problem, does R have difficulty walki  |
| H4_18     | Because of health problem, does R have difficulty sitti  |
| H5_18     | Due to health problem, difficult for R to get up from c  |
| H6_18     | Due to health problem, hard for R to climb several fligh |
| H7_18     | Due to health problem, difficult for R to climb 1 fligh  |
| H8_18     | Due to health problem, does R have difficulty stooping,  |
| H9_18     | Due to health problem, difficult for R to reach/extend   |

|   |
|---|
| <b>Activities of Daily Living (ADLs): Some Difficulty</b> |
|---|

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1WALKRA | r1walkra: w1 R Some difficulty-Walking across room | Categ |
| 2    | R2WALKRA | r2walkra: w2 R Some difficulty-Walking across room | Categ |
| 3    | R3WALKRA | r3walkra: w3 R Some difficulty-Walking across room | Categ |
| 4    | R4WALKRA | r4walkra: w4 R Some difficulty-Walking across room | Categ |
| 5    | R5WALKRA | r5walkra: w5 R Some difficulty-Walking across room | Categ |
| 1    | S1WALKRA | s1walkra: w1 S Some difficulty-Walking across room | Categ |
| 2    | S2WALKRA | s2walkra: w2 S Some difficulty-Walking across room | Categ |
| 3    | S3WALKRA | s3walkra: w3 S Some difficulty-Walking across room | Categ |
| 4    | S4WALKRA | s4walkra: w4 S Some difficulty-Walking across room | Categ |
| 5    | S5WALKRA | s5walkra: w5 S Some difficulty-Walking across room | Categ |
| 1    | R1DRESSA | r1dressa: w1 R Some difficulty-Dressing            | Categ |
| 2    | R2DRESSA | r2dressa: w2 R Some difficulty-Dressing            | Categ |
| 3    | R3DRESSA | r3dressa: w3 R Some difficulty-Dressing            | Categ |
| 4    | R4DRESSA | r4dressa: w4 R Some difficulty-Dressing            | Categ |
| 5    | R5DRESSA | r5dressa: w5 R Some difficulty-Dressing            | Categ |
| 1    | S1DRESSA | s1dressa: w1 S Some difficulty-Dressing            | Categ |
| 2    | S2DRESSA | s2dressa: w2 S Some difficulty-Dressing            | Categ |
| 3    | S3DRESSA | s3dressa: w3 S Some difficulty-Dressing            | Categ |
| 4    | S4DRESSA | s4dressa: w4 S Some difficulty-Dressing            | Categ |
| 5    | S5DRESSA | s5dressa: w5 S Some difficulty-Dressing            | Categ |
| 1    | R1BATHA  | r1batha: w1 R Some difficulty-Bathing or showering | Categ |
| 2    | R2BATHA  | r2batha: w2 R Some difficulty-Bathing or showering | Categ |
| 3    | R3BATHA  | r3batha: w3 R Some difficulty-Bathing or showering | Categ |
| 4    | R4BATHA  | r4batha: w4 R Some difficulty-Bathing or showering | Categ |
| 5    | R5BATHA  | r5batha: w5 R Some difficulty-Bathing or showering | Categ |
| 1    | S1BATHA  | s1batha: w1 S Some difficulty-Bathing or showering | Categ |
| 2    | S2BATHA  | s2batha: w2 S Some difficulty-Bathing or showering | Categ |
| 3    | S3BATHA  | s3batha: w3 S Some difficulty-Bathing or showering | Categ |
| 4    | S4BATHA  | s4batha: w4 S Some difficulty-Bathing or showering | Categ |
| 5    | S5BATHA  | s5batha: w5 S Some difficulty-Bathing or showering | Categ |
| 1    | R1EATA   | r1eata: w1 R Some difficulty-Bathing or showering  | Categ |
| 2    | R2EATA   | r2eata: w2 R Some difficulty-Bathing or showering  | Categ |
| 3    | R3EATA   | r3eata: w3 R Some difficulty-Bathing or showering  | Categ |
| 4    | R4EATA   | r4eata: w4 R Some difficulty-Bathing or showering  | Categ |
| 5    | R5EATA   | r5eata: w5 R Some difficulty-Bathing or showering  | Categ |
| 1    | S1EATA   | s1eata: w1 S Some difficulty-Bathing or showering  | Categ |
| 2    | S2EATA   | s2eata: w2 S Some difficulty-Bathing or showering  | Categ |
| 3    | S3EATA   | s3eata: w3 S Some difficulty-Bathing or showering  | Categ |
| 4    | S4EATA   | s4eata: w4 S Some difficulty-Bathing or showering  | Categ |
| 5    | S5EATA   | s5eata: w5 S Some difficulty-Bathing or showering  | Categ |
| 1    | R1BEDA   | r1beda: w1 R Some difficulty-Getting in/out of bed | Categ |
| 2    | R2BEDA   | r2beda: w2 R Some difficulty-Getting in/out of bed | Categ |
| 3    | R3BEDA   | r3beda: w3 R Some difficulty-Getting in/out of bed | Categ |
| 4    | R4BEDA   | r4beda: w4 R Some difficulty-Getting in/out of bed | Categ |
| 5    | R5BEDA   | r5beda: w5 R Some difficulty-Getting in/out of bed | Categ |
| 1    | S1BEDA   | s1beda: w1 S Some difficulty-Getting in/out of bed | Categ |
| 2    | S2BEDA   | s2beda: w2 S Some difficulty-Getting in/out of bed | Categ |
| 3    | S3BEDA   | s3beda: w3 S Some difficulty-Getting in/out of bed | Categ |
| 4    | S4BEDA   | s4beda: w4 S Some difficulty-Getting in/out of bed | Categ |
| 5    | S5BEDA   | s5beda: w5 S Some difficulty-Getting in/out of bed | Categ |

|   |          |                |                                  |       |
|---|----------|----------------|----------------------------------|-------|
| 1 | R1TOILTA | r1toilta: w1 R | Some difficulty-Using the toilet | Categ |
| 2 | R2TOILTA | r2toilta: w2 R | Some difficulty-Using the toilet | Categ |
| 3 | R3TOILTA | r3toilta: w3 R | Some difficulty-Using the toilet | Categ |
| 4 | R4TOILTA | r4toilta: w4 R | Some difficulty-Using the toilet | Categ |
| 5 | R5TOILTA | r5toilta: w5 R | Some difficulty-Using the toilet | Categ |
| 1 | S1TOILTA | s1toilta: w1 S | Some difficulty-Using the toilet | Categ |
| 2 | S2TOILTA | s2toilta: w2 S | Some difficulty-Using the toilet | Categ |
| 3 | S3TOILTA | s3toilta: w3 S | Some difficulty-Using the toilet | Categ |
| 4 | S4TOILTA | s4toilta: w4 S | Some difficulty-Using the toilet | Categ |
| 5 | S5TOILTA | s5toilta: w5 S | Some difficulty-Using the toilet | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1WALKRA | 14966 | 0.05 | 0.22    | 0.00    | 1.00    |
| R2WALKRA | 13650 | 0.06 | 0.23    | 0.00    | 1.00    |
| R3WALKRA | 15680 | 0.08 | 0.26    | 0.00    | 1.00    |
| R4WALKRA | 14720 | 0.09 | 0.28    | 0.00    | 1.00    |
| R5WALKRA | 17000 | 0.08 | 0.27    | 0.00    | 1.00    |
| S1WALKRA | 10520 | 0.04 | 0.20    | 0.00    | 1.00    |
| S2WALKRA | 9537  | 0.04 | 0.20    | 0.00    | 1.00    |
| S3WALKRA | 10562 | 0.06 | 0.23    | 0.00    | 1.00    |
| S4WALKRA | 9632  | 0.06 | 0.24    | 0.00    | 1.00    |
| S5WALKRA | 7575  | 0.08 | 0.27    | 0.00    | 1.00    |
| R1DRESSA | 14046 | 0.06 | 0.24    | 0.00    | 1.00    |
| R2DRESSA | 12499 | 0.06 | 0.24    | 0.00    | 1.00    |
| R3DRESSA | 14434 | 0.09 | 0.29    | 0.00    | 1.00    |
| R4DRESSA | 13798 | 0.11 | 0.31    | 0.00    | 1.00    |
| R5DRESSA | 15752 | 0.10 | 0.30    | 0.00    | 1.00    |
| S1DRESSA | 9924  | 0.06 | 0.23    | 0.00    | 1.00    |
| S2DRESSA | 8736  | 0.05 | 0.22    | 0.00    | 1.00    |
| S3DRESSA | 9860  | 0.08 | 0.27    | 0.00    | 1.00    |
| S4DRESSA | 9164  | 0.10 | 0.29    | 0.00    | 1.00    |
| S5DRESSA | 7061  | 0.11 | 0.31    | 0.00    | 1.00    |
| R1BATHA  | 14967 | 0.04 | 0.19    | 0.00    | 1.00    |
| R2BATHA  | 13647 | 0.04 | 0.19    | 0.00    | 1.00    |
| R3BATHA  | 15667 | 0.05 | 0.21    | 0.00    | 1.00    |
| R4BATHA  | 14721 | 0.06 | 0.25    | 0.00    | 1.00    |
| R5BATHA  | 17005 | 0.05 | 0.23    | 0.00    | 1.00    |
| S1BATHA  | 10521 | 0.03 | 0.16    | 0.00    | 1.00    |
| S2BATHA  | 9538  | 0.03 | 0.17    | 0.00    | 1.00    |
| S3BATHA  | 10551 | 0.03 | 0.17    | 0.00    | 1.00    |
| S4BATHA  | 9628  | 0.05 | 0.21    | 0.00    | 1.00    |
| S5BATHA  | 7576  | 0.05 | 0.22    | 0.00    | 1.00    |
| R1EATA   | 14965 | 0.02 | 0.14    | 0.00    | 1.00    |
| R2EATA   | 13650 | 0.02 | 0.14    | 0.00    | 1.00    |
| R3EATA   | 15671 | 0.03 | 0.18    | 0.00    | 1.00    |
| R4EATA   | 14723 | 0.04 | 0.19    | 0.00    | 1.00    |
| R5EATA   | 17001 | 0.03 | 0.17    | 0.00    | 1.00    |
| S1EATA   | 10520 | 0.01 | 0.12    | 0.00    | 1.00    |
| S2EATA   | 9537  | 0.02 | 0.12    | 0.00    | 1.00    |
| S3EATA   | 10552 | 0.02 | 0.15    | 0.00    | 1.00    |
| S4EATA   | 9630  | 0.03 | 0.17    | 0.00    | 1.00    |
| S5EATA   | 7572  | 0.02 | 0.15    | 0.00    | 1.00    |

|          |       |      |      |      |      |
|----------|-------|------|------|------|------|
| R1BEDA   | 14969 | 0.05 | 0.22 | 0.00 | 1.00 |
| R2BEDA   | 13651 | 0.05 | 0.22 | 0.00 | 1.00 |
| R3BEDA   | 15685 | 0.08 | 0.27 | 0.00 | 1.00 |
| R4BEDA   | 14728 | 0.10 | 0.30 | 0.00 | 1.00 |
| R5BEDA   | 17004 | 0.07 | 0.26 | 0.00 | 1.00 |
|          |       |      |      |      |      |
| S1BEDA   | 10522 | 0.05 | 0.21 | 0.00 | 1.00 |
| S2BEDA   | 9537  | 0.04 | 0.20 | 0.00 | 1.00 |
| S3BEDA   | 10564 | 0.07 | 0.25 | 0.00 | 1.00 |
| S4BEDA   | 9637  | 0.08 | 0.27 | 0.00 | 1.00 |
| S5BEDA   | 7575  | 0.07 | 0.25 | 0.00 | 1.00 |
|          |       |      |      |      |      |
| R1TOILTA | 14955 | 0.04 | 0.19 | 0.00 | 1.00 |
| R2TOILTA | 13651 | 0.04 | 0.19 | 0.00 | 1.00 |
| R3TOILTA | 15677 | 0.06 | 0.24 | 0.00 | 1.00 |
| R4TOILTA | 14712 | 0.06 | 0.24 | 0.00 | 1.00 |
| R5TOILTA | 16993 | 0.06 | 0.24 | 0.00 | 1.00 |
|          |       |      |      |      |      |
| S1TOILTA | 10516 | 0.03 | 0.17 | 0.00 | 1.00 |
| S2TOILTA | 9538  | 0.03 | 0.16 | 0.00 | 1.00 |
| S3TOILTA | 10560 | 0.04 | 0.21 | 0.00 | 1.00 |
| S4TOILTA | 9631  | 0.05 | 0.22 | 0.00 | 1.00 |
| S5TOILTA | 7570  | 0.06 | 0.23 | 0.00 | 1.00 |

## Categorical Variable Codes

|                               |          |          |          |          |          |
|-------------------------------|----------|----------|----------|----------|----------|
| Value-----                    | R1WALKRA | R2WALKRA | R3WALKRA | R4WALKRA | R5WALKRA |
| .d:DK                         | 38       |          | 31       | 6        | 4        |
| .m:Missing                    | 40       | 47       |          | 40       | 18       |
| .r:Refuse                     | 138      | 5        | 4        | 1        | 85       |
| .x:Doesn't do                 | 4        | 2        | 8        | 12       | 7        |
| 0.No                          | 14182    | 12880    | 14500    | 13453    | 15622    |
| 1.Yes                         | 784      | 770      | 1180     | 1267     | 1378     |
|                               |          |          |          |          |          |
| Value-----                    | S1WALKRA | S2WALKRA | S3WALKRA | S4WALKRA | S5WALKRA |
| .d:DK                         | 22       |          | 25       | 5        |          |
| .m:Missing                    | 14       | 23       |          | 10       | 6        |
| .r:Refuse                     | 89       | 3        | 2        |          | 56       |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do                 | 3        | 1        | 3        | 5        | 1        |
| 0.No                          | 10094    | 9136     | 9970     | 9031     | 6998     |
| 1.Yes                         | 426      | 401      | 592      | 601      | 577      |
|                               |          |          |          |          |          |
| Value-----                    | R1DRESSA | R2DRESSA | R3DRESSA | R4DRESSA | R5DRESSA |
| .d:DK                         | 31       |          | 1        | 7        | 2        |
| .m:Missing                    | 38       | 25       |          | 40       | 17       |
| .p:Proxy interview, not asked | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     | 37       |          | 4        | 1        | 8        |
| .x:Doesn't do                 | 2        | 2        | 9        | 4        | 7        |
| 0.No                          | 13147    | 11745    | 13103    | 12296    | 14151    |
| 1.Yes                         | 899      | 754      | 1331     | 1502     | 1601     |
|                               |          |          |          |          |          |
| Value-----                    | S1DRESSA | S2DRESSA | S3DRESSA | S4DRESSA | S5DRESSA |
| .d:DK                         | 26       |          | 1        | 7        | 1        |
| .m:Missing                    | 13       | 6        |          | 10       | 5        |
| .p:Proxy interview, not asked | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     | 25       |          |          |          | 5        |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do                 |          | 1        | 5        | 1        | 3        |
| 0.No                          | 9355     | 8285     | 9049     | 8290     | 6312     |
| 1.Yes                         | 569      | 451      | 811      | 874      | 749      |
|                               |          |          |          |          |          |
| Value-----                    | R1BATHA  | R2BATHA  | R3BATHA  | R4BATHA  | R5BATHA  |
| .d:DK                         | 38       |          | 31       | 6        | 3        |
| .m:Missing                    | 40       | 47       |          | 40       | 18       |

|               |  |          |          |          |          |          |
|---------------|--|----------|----------|----------|----------|----------|
| .r:Refuse     |  | 139      | 5        | 2        | 1        | 85       |
| .x:Doesn't do |  | 2        | 5        | 23       | 11       | 3        |
| 0.No          |  | 14400    | 13121    | 14928    | 13766    | 16072    |
| 1.Yes         |  | 567      | 526      | 739      | 955      | 933      |
| Value-----    |  | S1BATHA  | S2BATHA  | S3BATHA  | S4BATHA  | S5BATHA  |
| .d:DK         |  | 22       |          | 25       | 5        |          |
| .m:Missing    |  | 14       | 23       |          | 10       | 6        |
| .r:Refuse     |  | 90       | 3        | 1        |          | 56       |
| .u:Unmar      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR      |  | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do |  | 1        |          | 15       | 9        |          |
| 0.No          |  | 10228    | 9259     | 10230    | 9184     | 7198     |
| 1.Yes         |  | 293      | 279      | 321      | 444      | 378      |
| Value-----    |  | R1EATA   | R2EATA   | R3EATA   | R4EATA   | R5EATA   |
| .d:DK         |  | 39       |          | 31       | 6        | 2        |
| .m:Missing    |  | 40       | 47       |          | 40       | 18       |
| .r:Refuse     |  | 137      | 5        | 2        | 1        | 86       |
| .x:Doesn't do |  | 5        | 2        | 19       | 9        | 7        |
| 0.No          |  | 14655    | 13378    | 15151    | 14180    | 16509    |
| 1.Yes         |  | 310      | 272      | 520      | 543      | 492      |
| Value-----    |  | S1EATA   | S2EATA   | S3EATA   | S4EATA   | S5EATA   |
| .d:DK         |  | 22       |          | 25       | 5        |          |
| .m:Missing    |  | 14       | 23       |          | 10       | 6        |
| .r:Refuse     |  | 88       | 3        | 1        |          | 57       |
| .u:Unmar      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR      |  | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do |  | 4        | 1        | 14       | 7        | 3        |
| 0.No          |  | 10371    | 9393     | 10300    | 9360     | 7397     |
| 1.Yes         |  | 149      | 144      | 252      | 270      | 175      |
| Value-----    |  | R1BEDA   | R2BEDA   | R3BEDA   | R4BEDA   | R5BEDA   |
| .d:DK         |  | 38       |          | 32       | 6        | 3        |
| .m:Missing    |  | 40       | 47       |          | 40       | 18       |
| .r:Refuse     |  | 138      | 5        | 3        | 1        | 87       |
| .x:Doesn't do |  | 1        | 1        | 3        | 4        | 2        |
| 0.No          |  | 14174    | 12976    | 14429    | 13295    | 15766    |
| 1.Yes         |  | 795      | 675      | 1256     | 1433     | 1238     |
| Value-----    |  | S1BEDA   | S2BEDA   | S3BEDA   | S4BEDA   | S5BEDA   |
| .d:DK         |  | 22       |          | 26       | 5        |          |
| .m:Missing    |  | 14       | 23       |          | 10       | 6        |
| .r:Refuse     |  | 89       | 3        | 1        |          | 57       |
| .u:Unmar      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR      |  | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do |  | 1        | 1        | 1        |          |          |
| 0.No          |  | 10045    | 9158     | 9859     | 8854     | 7058     |
| 1.Yes         |  | 477      | 379      | 705      | 783      | 517      |
| Value-----    |  | R1TOILTA | R2TOILTA | R3TOILTA | R4TOILTA | R5TOILTA |
| .d:DK         |  | 44       |          | 33       | 6        | 6        |
| .m:Missing    |  | 40       | 47       |          | 40       | 18       |
| .r:Refuse     |  | 147      | 5        | 3        | 1        | 86       |
| .x:Doesn't do |  |          | 1        | 10       | 20       | 11       |
| 0.No          |  | 14385    | 13156    | 14743    | 13783    | 15922    |
| 1.Yes         |  | 570      | 495      | 934      | 929      | 1071     |
| Value-----    |  | S1TOILTA | S2TOILTA | S3TOILTA | S4TOILTA | S5TOILTA |
| .d:DK         |  | 25       |          | 26       | 5        | 1        |
| .m:Missing    |  | 14       | 23       |          | 10       | 6        |
| .r:Refuse     |  | 93       | 3        | 1        |          | 57       |
| .u:Unmar      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR      |  | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do |  |          |          | 5        | 6        | 4        |
| 0.No          |  | 10200    | 9276     | 10091    | 9150     | 7126     |
| 1.Yes         |  | 316      | 262      | 469      | 481      | 444      |

## How Constructed

These variables indicate difficulty with activities of daily living (ADLs). The ADL variables include walking across a room (RwWALKRA), dressing (RwDRESSA), bathing (RwBATHA), eating (RwEATA), getting in and out of bed (RwBEDA), and using the toilet (RwTOILTA). A code of 0 indicates that the respondent did not report any problems with the activity. A code of 1 indicates that the respondent reported some difficulty with the activity or if they reported "can't do". When respondents indicated "don't know" or refused to answer the Rw[adl]A variables are assigned special missing values .d or .r, respectively. Also, if the respondent reported "don't do" but received help, the ADL variables are set to 1, otherwise they are set to special missing value .x. The variables are also set to 0 if the difficulty question is skipped because of previous answers to the tasks asked about earlier (questions H1 to H13), indicating no difficulty. If the response is otherwise missing, then these variables are assigned special missing value .m. In all waves, the questions regarding difficulty dressing and help getting dressed are part of the introductory questions asked at the beginning of the module (Section H). This task is skipped if interviews are completed by proxy and the variable RwDRESSA and is set to .p. RwWALKRA, RwDRESSA, RwBATHA, RwEATA, RwBEDA, and RwTOILTA are set to plain missing (.) for respondents who did not respond to the current wave.

SwWALKRA, SwDRESSA, SwBATHA, SwEATA, SwBEDA, and SwTOILTA indicate whether the respondent's spouse reported any difficulty with each one of these daily living activities and are taken directly from the spouse's Rw[adl]A variables, respectively. In addition to the special missing codes used in the Rw[adl]A variables, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

These variables are used to construct a number of ADL summary indices. Please see "ADLs Summary" and "Other Summary Indices".

## Cross Wave Differences in MHAS

In Waves 1 and 2, two separate questions were asked regarding the help received with walking across the room, bathing or showering, eating, getting into or out of bed, or using the toilet. The first one is only asked if the respondent is married or in a union, and it says: "Does your spouse help you?". The second question is asked regardless of their marital status and it indicates if "anyone (else) ever help you?". These two questions are used to construct R1[adl]H and R2[adl]H and to determine if the respondent has some difficulty when they reported "Don't Do" when constructing R1[adl]A and R2[adl]A. Starting in Wave 3, only one question was asked regarding the help received: "Does someone help you?".

## Differences with the RAND HRS/Harmonized HRS

In the HRS introductory questions, respondents are asked whether they have difficulty jogging one mile. However, in the MHAS they ask if the respondent has any difficulty running or jogging one kilometer.

## MHAS Variables Used

Wave 1:

|       |                                       |
|-------|---------------------------------------|
| H1    | long walk                             |
| H10   | pulling                               |
| H11   | picking up                            |
| H12   | picking up a coin                     |
| H13   | dressing                              |
| H14   | help dressing                         |
| H15_1 | difficult walking                     |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_1 | difficult bathing                     |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_1 | difficult eating                      |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_1 | difficult getting in an out of bed    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H19_1 | difficult using toilet                |



H19\_3 spouse helps using toilet  
 H19\_4 other helps using toilet  
 H4 sitting 2 hours  
 H5 getting up  
 H6 long climbing  
 H7 short climbing  
 H8 bending  
 H9 extending arms

## Wave 2:

H1 health problems-trouble walking blocks  
 H10 health problems-trouble pushing or pulling  
 H11 health problems-trouble carrying objects  
 H12 health problems-trouble picking up a coin  
 H13 health problems-trouble dressing self  
 H14 someone help you to get dressed  
 H15A health problem-trouble walking  
 H15E spouse helps  
 H15F additional person helps  
 H16A health problem-have trouble bathing  
 H16E spouse helps  
 H16F additional person helps  
 H17A health problem-trouble eating or cutting  
 H17E spouse helps  
 H17F additional person helps  
 H18A health problem-get in/out of bed  
 H18E spouse helps  
 H18F additional person helps  
 H19A health problem-trouble going to bathroom  
 H19E spouse helps  
 H19F additional person helps  
 H4 health problems-trouble staying seated  
 H5 health problems-trouble getting up from chair  
 H6 health problems-trouble with flights of stairs  
 H7 health problems-trouble with 1 flight of stairs  
 H8 health problems-trouble sitting up  
 H9 health problems-trouble lifting arms

## Wave 3:

H10\_12 Because of health problem, difficulty pushing or pullin  
 H11\_12 Because of health problem, difficulty carrying objects  
 H12\_12 Because of health problem, difficulty picking up a coin  
 H13\_12 Because of health problem, difficulty dressing self  
 H14\_12 Someone help you to get dressed  
 H15A\_12 Because of health problem, difficulty walking  
 H15D\_12 Someone help you walk across room  
 H16A\_12 Because of health problem, difficulty bathing  
 H16D\_12 Someone help you to bathe or shower  
 H17A\_12 Because of health problem, difficulty eating or cutting  
 H17D\_12 Does someone help you eat your food  
 H18A\_12 Because of health problem, difficulty get in/out of bed  
 H18D\_12 Does someone help you get into or out of bed  
 H19A\_12 Because of health problem, difficulty going to the bath  
 H19D\_12 Does someone help you use toilet, get on off  
 H1\_12 Because of health problem, difficulty walking blocks  
 H4\_12 Because of health problem, difficulty staying seated  
 H5\_12 Because of health problem, difficulty getting up from c  
 H6\_12 Because of health problem, difficulty with flights of s  
 H7\_12 Because of health problem, difficulty with 1 flight of  
 H8\_12 Because of health problem, difficulty sitting up  
 H9\_12 Because of health problem, difficulty lifting arms

## Wave 4:

H10\_15 Because of health problem, does respondent have difficu  
 H11\_15 Because of health problem, does respondent have difficu  
 H12\_15 Because of health problem, does respondent have difficu  
 H13\_15 Because of health problem, does respondent have difficu

|         |   |
|---------|---|
| H14_15  | Does someone help respondent to get dressed             |
| H15A_15 | Because of health problem, does respondent have any dif |
| H15D_15 | Does someone help respondent walking across a room      |
| H16A_15 | Because of health problem, does respondent have any dif |
| H16D_15 | Does someone help respondent bathing or showering       |
| H17A_15 | Because of health problem, does respondent have any dif |
| H17D_15 | Does someone help respondent eating                     |
| H18A_15 | Because of health problem, does respondent have any dif |
| H18D_15 | Does someone help respondent getting in or out of bed   |
| H19A_15 | Because of health problem, does respondent have any dif |
| H19D_15 | Does someone help respondent using the toilet           |
| H1_15   | Because of health problem, does respondent have difficu |
| H4_15   | Because of health problem, does respondent have difficu |
| H5_15   | Because of health problem, does respondent have difficu |
| H6_15   | Because of health problem, does respondent have difficu |
| H7_15   | Because of health problem, does respondent have difficu |
| H8_15   | Because of health problem, does respondent have difficu |
| H9_15   | Because of health problem, does respondent have difficu |
| Wave 5: |   |
| H10_18  | Because of health problem, does R have difficulty pushi |
| H11_18  | Due to health problem, difficult for R to lift/carry ob |
| H12_18  | Due to health problem, does R have difficulty picking u |
| H13_18  | Due to health problem, difficult for R to dress, includ |
| H14_18  | Does someone help R to get dressed                      |
| H15A_18 | Because of health problem, does R have any difficulty w |
| H15D_18 | Does someone help R walking across a room               |
| H16A_18 | Because of health problem, does R have any difficulty b |
| H16D_18 | Does someone help R bathing or showering                |
| H17A_18 | Due to health problem, does R have any difficulty eatin |
| H17D_18 | Does someone help R eating                              |
| H18A_18 | Because of health problem, does R have any difficulty g |
| H18D_18 | Does someone help R getting in or out of bed            |
| H19A_18 | Because of health problem, does R have any difficulty u |
| H19D_18 | Does someone help R using the toilet                    |
| H1_18   | Because of health problem, does R have difficulty walki |
| H4_18   | Because of health problem, does R have difficulty sitti |
| H5_18   | Due to health problem, difficult for R to get up from c |
| H6_18   | Due to health problem, hard for R to climb several flig |
| H7_18   | Due to health problem, difficult for R to climb 1 fligh |
| H8_18   | Due to health problem, does R have difficulty stooping, |
| H9_18   | Due to health problem, difficult for R to reach/extend  |

|   |
|---|
| <b>Instrumental Activities of Daily Living (IADLs): Raw Recodes</b> |
|---|

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1MONEY  | r1money: w1 R Difficulty-Managing money        | Categ |
| 2    | R2MONEY  | r2money: w2 R Difficulty-Managing money        | Categ |
| 3    | R3MONEY  | r3money: w3 R Difficulty-Managing money        | Categ |
| 4    | R4MONEY  | r4money: w4 R Difficulty-Managing money        | Categ |
| 5    | R5MONEY  | r5money: w5 R Difficulty-Managing money        | Categ |
| 1    | S1MONEY  | s1money: w1 S Difficulty-Managing money        | Categ |
| 2    | S2MONEY  | s2money: w2 S Difficulty-Managing money        | Categ |
| 3    | S3MONEY  | s3money: w3 S Difficulty-Managing money        | Categ |
| 4    | S4MONEY  | s4money: w4 S Difficulty-Managing money        | Categ |
| 5    | S5MONEY  | s5money: w5 S Difficulty-Managing money        | Categ |
| 1    | R1MEDS   | r1meds: w1 R Difficulty-Taking medications     | Categ |
| 2    | R2MEDS   | r2meds: w2 R Difficulty-Taking medications     | Categ |
| 3    | R3MEDS   | r3meds: w3 R Difficulty-Taking medications     | Categ |
| 4    | R4MEDS   | r4meds: w4 R Difficulty-Taking medications     | Categ |
| 5    | R5MEDS   | r5meds: w5 R Difficulty-Taking medications     | Categ |
| 1    | S1MEDS   | s1meds: w1 S Difficulty-Taking medications     | Categ |
| 2    | S2MEDS   | s2meds: w2 S Difficulty-Taking medications     | Categ |
| 3    | S3MEDS   | s3meds: w3 S Difficulty-Taking medications     | Categ |
| 4    | S4MEDS   | s4meds: w4 S Difficulty-Taking medications     | Categ |
| 5    | S5MEDS   | s5meds: w5 S Difficulty-Taking medications     | Categ |
| 1    | R1SHOP   | r1shop: w1 R Difficulty-Shopping for groceries | Categ |
| 2    | R2SHOP   | r2shop: w2 R Difficulty-Shopping for groceries | Categ |
| 3    | R3SHOP   | r3shop: w3 R Difficulty-Shopping for groceries | Categ |
| 4    | R4SHOP   | r4shop: w4 R Difficulty-Shopping for groceries | Categ |
| 5    | R5SHOP   | r5shop: w5 R Difficulty-Shopping for groceries | Categ |
| 1    | S1SHOP   | s1shop: w1 S Difficulty-Shopping for groceries | Categ |
| 2    | S2SHOP   | s2shop: w2 S Difficulty-Shopping for groceries | Categ |
| 3    | S3SHOP   | s3shop: w3 S Difficulty-Shopping for groceries | Categ |
| 4    | S4SHOP   | s4shop: w4 S Difficulty-Shopping for groceries | Categ |
| 5    | S5SHOP   | s5shop: w5 S Difficulty-Shopping for groceries | Categ |
| 1    | R1MEALS  | r1meals: w1 R Difficulty-Preparing hot meals   | Categ |
| 2    | R2MEALS  | r2meals: w2 R Difficulty-Preparing hot meals   | Categ |
| 3    | R3MEALS  | r3meals: w3 R Difficulty-Preparing hot meals   | Categ |
| 4    | R4MEALS  | r4meals: w4 R Difficulty-Preparing hot meals   | Categ |
| 5    | R5MEALS  | r5meals: w5 R Difficulty-Preparing hot meals   | Categ |
| 1    | S1MEALS  | s1meals: w1 S Difficulty-Preparing hot meals   | Categ |
| 2    | S2MEALS  | s2meals: w2 S Difficulty-Preparing hot meals   | Categ |
| 3    | S3MEALS  | s3meals: w3 S Difficulty-Preparing hot meals   | Categ |
| 4    | S4MEALS  | s4meals: w4 S Difficulty-Preparing hot meals   | Categ |
| 5    | S5MEALS  | s5meals: w5 S Difficulty-Preparing hot meals   | Categ |

### Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1MONEY  | 14052 | 0.05 | 0.51    | 0.00    | 9.00    |
| R2MONEY  | 12516 | 0.05 | 0.48    | 0.00    | 9.00    |
| R3MONEY  | 14439 | 0.05 | 0.50    | 0.00    | 9.00    |
| R4MONEY  | 13801 | 0.07 | 0.63    | 0.00    | 9.00    |
| R5MONEY  | 15754 | 0.05 | 0.45    | 0.00    | 9.00    |

|         |       |      |      |      |      |
|---------|-------|------|------|------|------|
| S1MONEY | 9929  | 0.04 | 0.46 | 0.00 | 9.00 |
| S2MONEY | 8742  | 0.04 | 0.42 | 0.00 | 9.00 |
| S3MONEY | 9862  | 0.04 | 0.47 | 0.00 | 9.00 |
| S4MONEY | 9167  | 0.06 | 0.60 | 0.00 | 9.00 |
| S5MONEY | 7063  | 0.04 | 0.43 | 0.00 | 9.00 |
|         |       |      |      |      |      |
| R1MEDS  | 14056 | 0.04 | 0.44 | 0.00 | 9.00 |
| R2MEDS  | 12516 | 0.06 | 0.59 | 0.00 | 9.00 |
| R3MEDS  | 14445 | 0.13 | 0.98 | 0.00 | 9.00 |
| R4MEDS  | 13802 | 0.15 | 1.04 | 0.00 | 9.00 |
| R5MEDS  | 15753 | 0.06 | 0.58 | 0.00 | 9.00 |
|         |       |      |      |      |      |
| S1MEDS  | 9934  | 0.03 | 0.40 | 0.00 | 9.00 |
| S2MEDS  | 8743  | 0.05 | 0.59 | 0.00 | 9.00 |
| S3MEDS  | 9864  | 0.12 | 0.98 | 0.00 | 9.00 |
| S4MEDS  | 9165  | 0.14 | 1.01 | 0.00 | 9.00 |
| S5MEDS  | 7062  | 0.05 | 0.49 | 0.00 | 9.00 |
|         |       |      |      |      |      |
| R1SHOP  | 14016 | 0.27 | 1.35 | 0.00 | 9.00 |
| R2SHOP  | 12515 | 0.26 | 1.29 | 0.00 | 9.00 |
| R3SHOP  | 14440 | 0.25 | 1.20 | 0.00 | 9.00 |
| R4SHOP  | 13801 | 0.30 | 1.30 | 0.00 | 9.00 |
| R5SHOP  | 15754 | 0.19 | 1.01 | 0.00 | 9.00 |
|         |       |      |      |      |      |
| S1SHOP  | 9898  | 0.26 | 1.38 | 0.00 | 9.00 |
| S2SHOP  | 8742  | 0.24 | 1.30 | 0.00 | 9.00 |
| S3SHOP  | 9863  | 0.22 | 1.17 | 0.00 | 9.00 |
| S4SHOP  | 9166  | 0.24 | 1.19 | 0.00 | 9.00 |
| S5SHOP  | 7062  | 0.19 | 1.02 | 0.00 | 9.00 |
|         |       |      |      |      |      |
| R1MEALS | 14001 | 0.47 | 1.91 | 0.00 | 9.00 |
| R2MEALS | 12514 | 0.48 | 1.93 | 0.00 | 9.00 |
| R3MEALS | 14440 | 0.44 | 1.85 | 0.00 | 9.00 |
| R4MEALS | 13801 | 0.40 | 1.73 | 0.00 | 9.00 |
| R5MEALS | 15440 | 0.09 | 0.67 | 0.00 | 9.00 |
|         |       |      |      |      |      |
| S1MEALS | 9880  | 0.53 | 2.06 | 0.00 | 9.00 |
| S2MEALS | 8742  | 0.54 | 2.07 | 0.00 | 9.00 |
| S3MEALS | 9860  | 0.50 | 2.00 | 0.00 | 9.00 |
| S4MEALS | 9165  | 0.42 | 1.81 | 0.00 | 9.00 |
| S5MEALS | 6881  | 0.09 | 0.71 | 0.00 | 9.00 |

## Categorical Variable Codes

| Value-----                    | R1MONEY | R2MONEY | R3MONEY | R4MONEY | R5MONEY |
|-------------------------------|---------|---------|---------|---------|---------|
| .d:DK                         | 17      |         | 8       | 7       | 2       |
| .m:Missing                    | 38      | 25      |         | 40      | 17      |
| .p:Proxy interview, not asked | 1032    | 1161    | 1275    | 929     | 1328    |
| .r:Refuse                     | 47      | 2       | 1       | 2       | 13      |
| 0.No                          | 13693   | 12205   | 14056   | 13321   | 15350   |
| 1.Yes                         | 282     | 240     | 331     | 383     | 333     |
| 2.Can't Do                    | 37      | 40      | 12      | 35      | 37      |
| 9.Don't Do                    | 40      | 31      | 40      | 62      | 34      |
|                               |         |         |         |         |         |
| Value-----                    | S1MONEY | S2MONEY | S3MONEY | S4MONEY | S5MONEY |
| .d:DK                         | 13      |         | 4       | 5       |         |
| .m:Missing                    | 13      | 6       |         | 10      | 5       |
| .p:Proxy interview, not asked | 660     | 814     | 726     | 470     | 563     |
| .r:Refuse                     | 33      | 2       |         |         | 7       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| 0.No                          | 9747    | 8577    | 9650    | 8922    | 6887    |
| 1.Yes                         | 143     | 128     | 182     | 191     | 148     |
| 2.Can't Do                    | 15      | 20      | 6       | 16      | 14      |
| 9.Don't Do                    | 24      | 17      | 24      | 38      | 14      |

| Value-----                    | R1MEDS | R2MEDS | R3MEDS | R4MEDS | R5MEDS |
|-------------------------------|--------|--------|--------|--------|--------|
| .d:DK                         | 16     |        | 1      | 6      | 3      |
| .m:Missing                    | 38     | 25     |        | 40     | 17     |
| .p:Proxy interview, not asked | 1032   | 1162   | 1275   | 929    | 1328   |
| .r:Refuse                     | 44     | 1      | 2      | 2      | 13     |
| 0.No                          | 13692  | 12193  | 13944  | 13143  | 15328  |
| 1.Yes                         | 314    | 252    | 327    | 462    | 350    |
| 2.Can't Do                    | 21     | 20     | 5      | 14     | 14     |
| 9.Don't Do                    | 29     | 51     | 169    | 183    | 61     |

| Value-----                    | S1MEDS | S2MEDS | S3MEDS | S4MEDS | S5MEDS |
|-------------------------------|--------|--------|--------|--------|--------|
| .d:DK                         | 11     |        | 1      | 6      |        |
| .m:Missing                    | 13     | 6      |        | 10     | 5      |
| .p:Proxy interview, not asked | 660    | 814    | 726    | 470    | 563    |
| .r:Refuse                     | 30     | 1      | 1      | 1      | 8      |
| .u:Unmar                      | 4205   | 4009   | 4782   | 4847   | 5227   |
| .v:SP NR                      | 333    | 131    | 349    | 280    | 501    |
| 0.No                          | 9745   | 8568   | 9573   | 8815   | 6896   |
| 1.Yes                         | 165    | 128    | 174    | 228    | 143    |
| 2.Can't Do                    | 7      | 11     | 1      | 7      | 4      |
| 9.Don't Do                    | 17     | 36     | 116    | 115    | 19     |

| Value-----                    | R1SHOP | R2SHOP | R3SHOP | R4SHOP | R5SHOP |
|-------------------------------|--------|--------|--------|--------|--------|
| .d:DK                         | 30     |        | 3      | 8      | 2      |
| .m:Missing                    | 38     | 25     |        | 40     | 17     |
| .p:Proxy interview, not asked | 1032   | 1162   | 1275   | 929    | 1328   |
| .r:Refuse                     | 70     | 2      | 5      | 1      | 13     |
| 0.No                          | 12858  | 11435  | 12924  | 12119  | 14362  |
| 1.Yes                         | 693    | 687    | 1120   | 1153   | 1053   |
| 2.Can't Do                    | 151    | 139    | 151    | 253    | 154    |
| 9.Don't Do                    | 314    | 254    | 245    | 276    | 185    |

| Value-----                    | S1SHOP | S2SHOP | S3SHOP | S4SHOP | S5SHOP |
|-------------------------------|--------|--------|--------|--------|--------|
| .d:DK                         | 21     |        | 1      | 6      | 1      |
| .m:Missing                    | 13     | 6      |        | 10     | 5      |
| .p:Proxy interview, not asked | 660    | 814    | 726    | 470    | 563    |
| .r:Refuse                     | 56     | 2      | 2      |        | 7      |
| .u:Unmar                      | 4205   | 4009   | 4782   | 4847   | 5227   |
| .v:SP NR                      | 333    | 131    | 349    | 280    | 501    |
| 0.No                          | 9207   | 8158   | 9062   | 8331   | 6462   |
| 1.Yes                         | 379    | 330    | 567    | 569    | 450    |
| 2.Can't Do                    | 81     | 72     | 72     | 112    | 64     |
| 9.Don't Do                    | 231    | 182    | 162    | 154    | 86     |

| Value-----                    | R1MEALS | R2MEALS | R3MEALS | R4MEALS | R5MEALS |
|-------------------------------|---------|---------|---------|---------|---------|
| .d:DK                         | 34      |         | 3       | 7       | 315     |
| .m:Missing                    | 38      | 25      |         | 40      | 17      |
| .p:Proxy interview, not asked | 1032    | 1162    | 1275    | 929     | 1328    |
| .r:Refuse                     | 81      | 3       | 5       | 2       | 14      |
| 0.No                          | 12841   | 11420   | 13190   | 12560   | 14701   |
| 1.Yes                         | 411     | 404     | 528     | 545     | 585     |
| 2.Can't Do                    | 91      | 90      | 87      | 176     | 77      |
| 9.Don't Do                    | 658     | 600     | 635     | 520     | 77      |

| Value-----                    | S1MEALS | S2MEALS | S3MEALS | S4MEALS | S5MEALS |
|-------------------------------|---------|---------|---------|---------|---------|
| .d:DK                         | 28      |         | 3       | 7       | 182     |
| .m:Missing                    | 13      | 6       |         | 10      | 5       |
| .p:Proxy interview, not asked | 660     | 814     | 726     | 470     | 563     |
| .r:Refuse                     | 67      | 2       | 3       |         | 7       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| 0.No                          | 9053    | 8016    | 9048    | 8452    | 6578    |
| 1.Yes                         | 227     | 191     | 260     | 251     | 236     |
| 2.Can't Do                    | 52      | 45      | 41      | 76      | 28      |
| 9.Don't Do                    | 548     | 490     | 511     | 386     | 39      |

## How Constructed

These variables recode the raw variables for difficulty with instrumental activities of daily living (IADLs) as they appear in the MHAS data except for missing values and accounting for skip patterns. The IADLs include managing money (RwMONEY), taking medications (RwMEDS), shopping for groceries (RwSHOP), and

preparing meals (RwMEALS). All the Rw[iadl] variables are set to 0 if the response is "no" difficulty; 1 if the response is "yes"; and 2 or 9 if the response is "can't do" or "don't do", respectively. Rwmoney, Rwmeds, Rwsshop, and RwmEALS are assigned special missing values .d for "don't know", .r for refusals, and .p for proxy interviews. If the Respondent answers "can't do" or "don't do" to the first question, the second question asks if this is because of a health problem. If it is because of a health problem, Rw[iadl] is set to 2 for "can't do". If not, the answer is considered a "don't do" response and Rw[iadl] is set to 9. If the answer is otherwise missing, then these variables are assigned special missing .m. Rwmoney, Rwmeds, Rwsshop, and RwmEALS are set to plain missing (.) for respondents who did not respond to the current wave.

Swmoney, Swmeds, Swsshop, and SwmEALS indicate whether the respondent's spouse reported any difficulty with instrumental activities of daily living and are taken directly from the spouse's Rwmoney, Rwmeds, Rwsshop, and RwmEALS variables, respectively. In addition to the special missing codes used in the Rw[iadl] variables, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

Unlike the HRS, the MHAS does not include the instrumental activities of daily living (IADLs) regarding using the phone and using a map.

The HRS includes an additional question after the initial taking medication question if the respondent answered don't do to the first question. For these respondents the HRS asks "Do you think you would have any difficulty taking medications if you needed to do so?" If the respondent answered no, Rwmeds in the RAND HRS is set to .z to indicate the respondent doesn't take medications but says they wouldn't have difficulty if they did. If the respondent answered yes, they are then asked the follow up question of whether this is because of a health problem. For respondents who answered that they would have difficulty taking medication and answered that this was because of a health problem, Rwmeds in the RAND HRS is set to 1 for "yes". For respondents who answered that they would have difficulty taking medication and answered that this was not because of a health problem, Rwmeds in the RAND HRS is set to 9 for "don't do". The MHAS does not include a question about whether the respondent would have difficulty taking medication if they don't take medication so Rwmeds in the Harmonized MHAS does include any recoding based on this sort of question.

## MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| H26_1   | hot meal  |
| H27_1   | shopping  |
| H28_1   | taking medication                                       |
| H29_1   | managing money  |
| Wave 2: |   |
| H26A    | trouble preparing hot food                              |
| H27A    | trouble shopping  |
| H28A    | trouble taking medicine                                 |
| H29A    | trouble managing money                                  |
| Wave 3: |   |
| H26A_12 | Difficulty preparing hot food                           |
| H27A_12 | Difficulty shopping                                     |
| H28A_12 | Difficulty taking medications                           |
| H29A_12 | Difficulty managing money                               |
| Wave 4: |   |
| H26A_15 | Because of health problem, does respondent have any dif |
| H27A_15 | Because of health problem, does respondent have any dif |
| H28A_15 | Because of health problem, does respondent have any dif |
| H29A_15 | Because of health problem, does respondent have any dif |
| Wave 5: |   |
| H26A_18 | Because of health problem, does R have any difficulty p |

|         |   |
|---------|---|
| H27A_18 | Because of health problem, does R have any difficulty s |
| H28A_18 | Because of health problem, does R have any difficulty t |
| H29A_18 | Because of health problem, does R have any difficulty m |

|   |
|---|
| <b>Instrumental Activities of Daily Living (IADLs): Some Difficulty</b> |
|---|

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1MONEYA | r1moneya: w1 R Some difficulty-Managing money        | Categ |
| 2    | R2MONEYA | r2moneya: w2 R Some difficulty-Managing money        | Categ |
| 3    | R3MONEYA | r3moneya: w3 R Some difficulty-Managing money        | Categ |
| 4    | R4MONEYA | r4moneya: w4 R Some difficulty-Managing money        | Categ |
| 5    | R5MONEYA | r5moneya: w5 R Some difficulty-Managing money        | Categ |
| 1    | S1MONEYA | s1moneya: w1 S Some difficulty-Managing money        | Categ |
| 2    | S2MONEYA | s2moneya: w2 S Some difficulty-Managing money        | Categ |
| 3    | S3MONEYA | s3moneya: w3 S Some difficulty-Managing money        | Categ |
| 4    | S4MONEYA | s4moneya: w4 S Some difficulty-Managing money        | Categ |
| 5    | S5MONEYA | s5moneya: w5 S Some difficulty-Managing money        | Categ |
| 1    | R1MEDSA  | r1medsa: w1 R Some difficulty-Taking medications     | Categ |
| 2    | R2MEDSA  | r2medsa: w2 R Some difficulty-Taking medications     | Categ |
| 3    | R3MEDSA  | r3medsa: w3 R Some difficulty-Taking medications     | Categ |
| 4    | R4MEDSA  | r4medsa: w4 R Some difficulty-Taking medications     | Categ |
| 5    | R5MEDSA  | r5medsa: w5 R Some difficulty-Taking medications     | Categ |
| 1    | S1MEDSA  | s1medsa: w1 S Some difficulty-Taking medications     | Categ |
| 2    | S2MEDSA  | s2medsa: w2 S Some difficulty-Taking medications     | Categ |
| 3    | S3MEDSA  | s3medsa: w3 S Some difficulty-Taking medications     | Categ |
| 4    | S4MEDSA  | s4medsa: w4 S Some difficulty-Taking medications     | Categ |
| 5    | S5MEDSA  | s5medsa: w5 S Some difficulty-Taking medications     | Categ |
| 1    | R1SHOPA  | r1shopa: w1 R Some difficulty-Shopping for groceries | Categ |
| 2    | R2SHOPA  | r2shopa: w2 R Some difficulty-Shopping for groceries | Categ |
| 3    | R3SHOPA  | r3shopa: w3 R Some difficulty-Shopping for groceries | Categ |
| 4    | R4SHOPA  | r4shopa: w4 R Some difficulty-Shopping for groceries | Categ |
| 5    | R5SHOPA  | r5shopa: w5 R Some difficulty-Shopping for groceries | Categ |
| 1    | S1SHOPA  | s1shopa: w1 S Some difficulty-Shopping for groceries | Categ |
| 2    | S2SHOPA  | s2shopa: w2 S Some difficulty-Shopping for groceries | Categ |
| 3    | S3SHOPA  | s3shopa: w3 S Some difficulty-Shopping for groceries | Categ |
| 4    | S4SHOPA  | s4shopa: w4 S Some difficulty-Shopping for groceries | Categ |
| 5    | S5SHOPA  | s5shopa: w5 S Some difficulty-Shopping for groceries | Categ |
| 1    | R1MEALSA | r1mealsa: w1 R Some difficulty-Preparing hot meals   | Categ |
| 2    | R2MEALSA | r2mealsa: w2 R Some difficulty-Preparing hot meals   | Categ |
| 3    | R3MEALSA | r3mealsa: w3 R Some difficulty-Preparing hot meals   | Categ |
| 4    | R4MEALSA | r4mealsa: w4 R Some difficulty-Preparing hot meals   | Categ |
| 5    | R5MEALSA | r5mealsa: w5 R Some difficulty-Preparing hot meals   | Categ |
| 1    | S1MEALSA | s1mealsa: w1 S Some difficulty-Preparing hot meals   | Categ |
| 2    | S2MEALSA | s2mealsa: w2 S Some difficulty-Preparing hot meals   | Categ |
| 3    | S3MEALSA | s3mealsa: w3 S Some difficulty-Preparing hot meals   | Categ |
| 4    | S4MEALSA | s4mealsa: w4 S Some difficulty-Preparing hot meals   | Categ |
| 5    | S5MEALSA | s5mealsa: w5 S Some difficulty-Preparing hot meals   | Categ |

### Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1MONEYA | 14012 | 0.02 | 0.15    | 0.00    | 1.00    |
| R2MONEYA | 12485 | 0.02 | 0.15    | 0.00    | 1.00    |
| R3MONEYA | 14399 | 0.02 | 0.15    | 0.00    | 1.00    |
| R4MONEYA | 13739 | 0.03 | 0.17    | 0.00    | 1.00    |
| R5MONEYA | 15720 | 0.02 | 0.15    | 0.00    | 1.00    |



|          |       |      |      |      |      |
|----------|-------|------|------|------|------|
| S1MONEYA | 9905  | 0.02 | 0.13 | 0.00 | 1.00 |
| S2MONEYA | 8725  | 0.02 | 0.13 | 0.00 | 1.00 |
| S3MONEYA | 9838  | 0.02 | 0.14 | 0.00 | 1.00 |
| S4MONEYA | 9129  | 0.02 | 0.15 | 0.00 | 1.00 |
| S5MONEYA | 7049  | 0.02 | 0.15 | 0.00 | 1.00 |
|          |       |      |      |      |      |
| R1MEDSA  | 14027 | 0.02 | 0.15 | 0.00 | 1.00 |
| R2MEDSA  | 12465 | 0.02 | 0.15 | 0.00 | 1.00 |
| R3MEDSA  | 14276 | 0.02 | 0.15 | 0.00 | 1.00 |
| R4MEDSA  | 13619 | 0.03 | 0.18 | 0.00 | 1.00 |
| R5MEDSA  | 15692 | 0.02 | 0.15 | 0.00 | 1.00 |
|          |       |      |      |      |      |
| S1MEDSA  | 9917  | 0.02 | 0.13 | 0.00 | 1.00 |
| S2MEDSA  | 8707  | 0.02 | 0.13 | 0.00 | 1.00 |
| S3MEDSA  | 9748  | 0.02 | 0.13 | 0.00 | 1.00 |
| S4MEDSA  | 9050  | 0.03 | 0.16 | 0.00 | 1.00 |
| S5MEDSA  | 7043  | 0.02 | 0.14 | 0.00 | 1.00 |
|          |       |      |      |      |      |
| R1SHOPA  | 13702 | 0.06 | 0.24 | 0.00 | 1.00 |
| R2SHOPA  | 12261 | 0.07 | 0.25 | 0.00 | 1.00 |
| R3SHOPA  | 14195 | 0.09 | 0.29 | 0.00 | 1.00 |
| R4SHOPA  | 13525 | 0.10 | 0.31 | 0.00 | 1.00 |
| R5SHOPA  | 15569 | 0.08 | 0.27 | 0.00 | 1.00 |
|          |       |      |      |      |      |
| S1SHOPA  | 9667  | 0.05 | 0.21 | 0.00 | 1.00 |
| S2SHOPA  | 8560  | 0.05 | 0.21 | 0.00 | 1.00 |
| S3SHOPA  | 9701  | 0.07 | 0.25 | 0.00 | 1.00 |
| S4SHOPA  | 9012  | 0.08 | 0.26 | 0.00 | 1.00 |
| S5SHOPA  | 6976  | 0.07 | 0.26 | 0.00 | 1.00 |
|          |       |      |      |      |      |
| R1MEALSA | 13343 | 0.04 | 0.19 | 0.00 | 1.00 |
| R2MEALSA | 11914 | 0.04 | 0.20 | 0.00 | 1.00 |
| R3MEALSA | 13805 | 0.04 | 0.21 | 0.00 | 1.00 |
| R4MEALSA | 13281 | 0.05 | 0.23 | 0.00 | 1.00 |
| R5MEALSA | 15363 | 0.04 | 0.20 | 0.00 | 1.00 |
|          |       |      |      |      |      |
| S1MEALSA | 9332  | 0.03 | 0.17 | 0.00 | 1.00 |
| S2MEALSA | 8252  | 0.03 | 0.17 | 0.00 | 1.00 |
| S3MEALSA | 9349  | 0.03 | 0.18 | 0.00 | 1.00 |
| S4MEALSA | 8779  | 0.04 | 0.19 | 0.00 | 1.00 |
| S5MEALSA | 6842  | 0.04 | 0.19 | 0.00 | 1.00 |

## Categorical Variable Codes

|                               |          |          |          |          |          |
|-------------------------------|----------|----------|----------|----------|----------|
| Value-----                    | R1MONEYA | R2MONEYA | R3MONEYA | R4MONEYA | R5MONEYA |
| .d:DK                         | 17       |          | 8        | 7        | 2        |
| .m:Missing                    | 38       | 25       |          | 40       | 17       |
| .p:Proxy interview, not asked | 1032     | 1161     | 1275     | 929      | 1328     |
| .r:Refuse                     | 47       | 2        | 1        | 2        | 13       |
| .x:Doesn't do                 | 40       | 31       | 40       | 62       | 34       |
| 0.No                          | 13693    | 12205    | 14056    | 13321    | 15350    |
| 1.Yes                         | 319      | 280      | 343      | 418      | 370      |
|                               |          |          |          |          |          |
| Value-----                    | S1MONEYA | S2MONEYA | S3MONEYA | S4MONEYA | S5MONEYA |
| .d:DK                         | 13       |          | 4        | 5        |          |
| .m:Missing                    | 13       | 6        |          | 10       | 5        |
| .p:Proxy interview, not asked | 660      | 814      | 726      | 470      | 563      |
| .r:Refuse                     | 33       | 2        |          |          | 7        |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do                 | 24       | 17       | 24       | 38       | 14       |
| 0.No                          | 9747     | 8577     | 9650     | 8922     | 6887     |
| 1.Yes                         | 158      | 148      | 188      | 207      | 162      |
|                               |          |          |          |          |          |
| Value-----                    | R1MEDSA  | R2MEDSA  | R3MEDSA  | R4MEDSA  | R5MEDSA  |
| .d:DK                         | 16       |          | 1        | 6        | 3        |

|                               |  |          |          |          |          |          |
|-------------------------------|--|----------|----------|----------|----------|----------|
| .m:Missing                    |  | 38       | 25       | 40       | 17       |          |
| .p:Proxy interview, not asked |  | 1032     | 1162     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 44       | 1        | 2        | 2        | 13       |
| .x:Doesn't do                 |  | 29       | 51       | 169      | 183      | 61       |
| 0.No                          |  | 13692    | 12193    | 13944    | 13143    | 15328    |
| 1.Yes                         |  | 335      | 272      | 332      | 476      | 364      |
| Value-----                    |  | S1MEDSA  | S2MEDSA  | S3MEDSA  | S4MEDSA  | S5MEDSA  |
| .d:DK                         |  | 11       |          | 1        | 6        |          |
| .m:Missing                    |  | 13       | 6        |          | 10       | 5        |
| .p:Proxy interview, not asked |  | 660      | 814      | 726      | 470      | 563      |
| .r:Refuse                     |  | 30       | 1        | 1        | 1        | 8        |
| .u:Unmar                      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do                 |  | 17       | 36       | 116      | 115      | 19       |
| 0.No                          |  | 9745     | 8568     | 9573     | 8815     | 6896     |
| 1.Yes                         |  | 172      | 139      | 175      | 235      | 147      |
| Value-----                    |  | R1SHOPA  | R2SHOPA  | R3SHOPA  | R4SHOPA  | R5SHOPA  |
| .d:DK                         |  | 30       |          | 3        | 8        | 2        |
| .m:Missing                    |  | 38       | 25       |          | 40       | 17       |
| .p:Proxy interview, not asked |  | 1032     | 1162     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 70       | 2        | 5        | 1        | 13       |
| .x:Doesn't do                 |  | 314      | 254      | 245      | 276      | 185      |
| 0.No                          |  | 12858    | 11435    | 12924    | 12119    | 14362    |
| 1.Yes                         |  | 844      | 826      | 1271     | 1406     | 1207     |
| Value-----                    |  | S1SHOPA  | S2SHOPA  | S3SHOPA  | S4SHOPA  | S5SHOPA  |
| .d:DK                         |  | 21       |          | 1        | 6        | 1        |
| .m:Missing                    |  | 13       | 6        |          | 10       | 5        |
| .p:Proxy interview, not asked |  | 660      | 814      | 726      | 470      | 563      |
| .r:Refuse                     |  | 56       | 2        | 2        |          | 7        |
| .u:Unmar                      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do                 |  | 231      | 182      | 162      | 154      | 86       |
| 0.No                          |  | 9207     | 8158     | 9062     | 8331     | 6462     |
| 1.Yes                         |  | 460      | 402      | 639      | 681      | 514      |
| Value-----                    |  | R1MEALSA | R2MEALSA | R3MEALSA | R4MEALSA | R5MEALSA |
| .d:DK                         |  | 34       |          | 3        | 7        | 315      |
| .m:Missing                    |  | 38       | 25       |          | 40       | 17       |
| .p:Proxy interview, not asked |  | 1032     | 1162     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 81       | 3        | 5        | 2        | 14       |
| .x:Doesn't do                 |  | 658      | 600      | 635      | 520      | 77       |
| 0.No                          |  | 12841    | 11420    | 13190    | 12560    | 14701    |
| 1.Yes                         |  | 502      | 494      | 615      | 721      | 662      |
| Value-----                    |  | S1MEALSA | S2MEALSA | S3MEALSA | S4MEALSA | S5MEALSA |
| .d:DK                         |  | 28       |          | 3        | 7        | 182      |
| .m:Missing                    |  | 13       | 6        |          | 10       | 5        |
| .p:Proxy interview, not asked |  | 660      | 814      | 726      | 470      | 563      |
| .r:Refuse                     |  | 67       | 2        | 3        |          | 7        |
| .u:Unmar                      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do                 |  | 548      | 490      | 511      | 386      | 39       |
| 0.No                          |  | 9053     | 8016     | 9048     | 8452     | 6578     |
| 1.Yes                         |  | 279      | 236      | 301      | 327      | 264      |

## How Constructed

These variables indicate difficulty with instrumental activities of daily living (IADLs). The IADL variables include managing money (RwMONEYA), taking medications (RwMEDSA), shopping for groceries (RwSHOPA), and preparing meals (RwMEALSA). A code of 0 indicates that the respondent did not report any problems with the activity. A code of 1 indicates that either the respondent reported some difficulty with the activity or the respondent answered "Can't Do" or "Don't do" to the initial question about the activity and they answered that this was because of a health problem in the follow-up question. A special missing value of .x indicates that the respondent answered "Can't Do" or "Don't do" to the initial question about the activity and they answered that this was not because of a health problem in the follow-up question. When respondents indicated "don't know" or refused to answer the Rw[iadl]A variables are assigned special missing values .d or .r, respectively. RwMONEYA, RwMEDSA, RwSHOPA, and RwMEALSA are

set to special missing .p for proxy interviews, to .m for other missing answers, and to plain missing (.) for respondents who did not respond to the current wave.

SwMONEYA, SwMEDSA, SwSHOPA, and SwMEALSA indicate whether the respondent's spouse reported any difficulty with each one of these instrumental activities of daily living and are taken directly from the spouse's Rw[iadl]A variables, respectively. In addition to the special missing codes used in the Rw[iadl]A variables, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

These variables are used to construct a number of IADL summary indices. Please see "IADLs Summary" and "Other Summary Indices".

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

Unlike the HRS, the MHAS does not include the instrumental activities of daily living (IADLs) regarding using the phone and using a map.

The HRS includes an additional question after the initial taking medication question if the respondent answered don't do to the first question. For these respondents the HRS asks "Do you think you would have any difficulty taking medications if you needed to do so?" If the respondent answered no, RwMEDSA in the RAND HRS is set to .z to indicate the respondent doesn't take medications but says they wouldn't have difficulty if they did. If the respondent answered yes, they are then asked the follow up question of whether this is because of a health problem. For respondents who answered that they would have difficulty taking medication and answered that this was because of a health problem, RwMEDSA in the RAND HRS is set to 1 for "yes". For respondents who answered that they would have difficulty taking medication and answered that this was not because of a health problem, RwMEDSA in the RAND HRS is set to .x. The MHAS does not include a question about whether the respondent would have difficulty taking medication if they don't take medication so RwMEDSA in the Harmonized MHAS does include any recoding based on this sort of question.

## MHAS Variables Used

### Wave 1:

|       |                                    |
|-------|------------------------------------|
| H26_1 | hot meal                           |
| H26_2 | health prevents preparing hot meal |
| H27_1 | shopping                           |
| H27_2 | health prevents shopping           |
| H28_1 | taking medication                  |
| H28_2 | health prevents taking medication  |
| H29_1 | managing money                     |
| H29_2 | health prevents managing money     |

### Wave 2:

|      |                                 |
|------|---------------------------------|
| H26A | trouble preparing hot food      |
| H26B | this is due to a health problem |
| H27A | trouble shopping                |
| H27B | this is due to a health problem |
| H28A | trouble taking medicine         |
| H28B | this is due to a health problem |
| H29A | trouble managing money          |
| H29B | this is due to a health problem |

### Wave 3:

|         |   |
|---------|---|
| H26A_12 | Difficulty preparing hot food                         |
| H26B_12 | Difficulty preparing hot food due to a health problem |
| H27A_12 | Difficulty shopping                                   |
| H27B_12 | Difficulty shopping due to a health problem           |
| H28A_12 | Difficulty taking medications                         |
| H28B_12 | Difficulty taking medications due to a health problem |
| H29A_12 | Difficulty managing money                             |

|         |   |
|---------|---|
| H29B_12 | Difficulty managing money due to a health problem       |
| Wave 4: |   |
| H26A_15 | Because of health problem, does respondent have any dif |
| H26B_15 | Is this (difficulty preparing a hot meal) because of a  |
| H27A_15 | Because of health problem, does respondent have any dif |
| H27B_15 | Is this (shopping for groceries) because of a health pr |
| H28A_15 | Because of health problem, does respondent have any dif |
| H28B_15 | Is this (taking medications) because of a health proble |
| H29A_15 | Because of health problem, does respondent have any dif |
| H29B_15 | Is this (managing his/her money) because of a health pr |
| Wave 5: |   |
| H26A_18 | Because of health problem, does R have any difficulty p |
| H26B_18 | Is this (difficulty preparing a hot meal) because of a  |
| H27A_18 | Because of health problem, does R have any difficulty s |
| H27B_18 | Is this (difficulty shopping for groceries) because of  |
| H28A_18 | Because of health problem, does R have any difficulty t |
| H28B_18 | Is this (difficulty taking medications) because of a he |
| H29A_18 | Because of health problem, does R have any difficulty m |
| H29B_18 | Is this (difficulty managing his/her money) because of  |

|  |
|--|
| <b>Other Functional Limitations: Raw Recodes</b> |
|--|

| Wave | Variable | Label   | Type  |
|------|----------|---|-------|
| 1    | R1WALKS  | r1walks: w1 R Difficulty-Walking several blocks | Categ |
| 2    | R2WALKS  | r2walks: w2 R Difficulty-Walking several blocks | Categ |
| 3    | R3WALKS  | r3walks: w3 R Difficulty-Walking several blocks | Categ |
| 4    | R4WALKS  | r4walks: w4 R Difficulty-Walking several blocks | Categ |
| 5    | R5WALKS  | r5walks: w5 R Difficulty-Walking several blocks | Categ |
| 1    | S1WALKS  | s1walks: w1 S Difficulty-Walking several blocks | Categ |
| 2    | S2WALKS  | s2walks: w2 S Difficulty-Walking several blocks | Categ |
| 3    | S3WALKS  | s3walks: w3 S Difficulty-Walking several blocks | Categ |
| 4    | S4WALKS  | s4walks: w4 S Difficulty-Walking several blocks | Categ |
| 5    | S5WALKS  | s5walks: w5 S Difficulty-Walking several blocks | Categ |
| 1    | R1JOG    | r1jog: w1 R Difficulty-Run/Jogging one km       | Categ |
| 2    | R2JOG    | r2jog: w2 R Difficulty-Run/Jogging one km       | Categ |
| 3    | R3JOG    | r3jog: w3 R Difficulty-Run/Jogging one km       | Categ |
| 4    | R4JOG    | r4jog: w4 R Difficulty-Run/Jogging one km       | Categ |
| 5    | R5JOG    | r5jog: w5 R Difficulty-Run/Jogging one km       | Categ |
| 1    | S1JOG    | s1jog: w1 S Difficulty-Run/Jogging one km       | Categ |
| 2    | S2JOG    | s2jog: w2 S Difficulty-Run/Jogging one km       | Categ |
| 3    | S3JOG    | s3jog: w3 S Difficulty-Run/Jogging one km       | Categ |
| 4    | S4JOG    | s4jog: w4 S Difficulty-Run/Jogging one km       | Categ |
| 5    | S5JOG    | s5jog: w5 S Difficulty-Run/Jogging one km       | Categ |
| 1    | R1WALK1  | r1walk1: w1 R Difficulty-Walking one block      | Categ |
| 2    | R2WALK1  | r2walk1: w2 R Difficulty-Walking one block      | Categ |
| 3    | R3WALK1  | r3walk1: w3 R Difficulty-Walking one block      | Categ |
| 4    | R4WALK1  | r4walk1: w4 R Difficulty-Walking one block      | Categ |
| 5    | R5WALK1  | r5walk1: w5 R Difficulty-Walking one block      | Categ |
| 1    | S1WALK1  | s1walk1: w1 S Difficulty-Walking one block      | Categ |
| 2    | S2WALK1  | s2walk1: w2 S Difficulty-Walking one block      | Categ |
| 3    | S3WALK1  | s3walk1: w3 S Difficulty-Walking one block      | Categ |
| 4    | S4WALK1  | s4walk1: w4 S Difficulty-Walking one block      | Categ |
| 5    | S5WALK1  | s5walk1: w5 S Difficulty-Walking one block      | Categ |
| 1    | R1SIT    | r1sit: w1 R Difficulty-Sitting for 2 hours      | Categ |
| 2    | R2SIT    | r2sit: w2 R Difficulty-Sitting for 2 hours      | Categ |
| 3    | R3SIT    | r3sit: w3 R Difficulty-Sitting for 2 hours      | Categ |
| 4    | R4SIT    | r4sit: w4 R Difficulty-Sitting for 2 hours      | Categ |
| 5    | R5SIT    | r5sit: w5 R Difficulty-Sitting for 2 hours      | Categ |
| 1    | S1SIT    | s1sit: w1 S Difficulty-Sitting for 2 hours      | Categ |
| 2    | S2SIT    | s2sit: w2 S Difficulty-Sitting for 2 hours      | Categ |
| 3    | S3SIT    | s3sit: w3 S Difficulty-Sitting for 2 hours      | Categ |
| 4    | S4SIT    | s4sit: w4 S Difficulty-Sitting for 2 hours      | Categ |
| 5    | S5SIT    | s5sit: w5 S Difficulty-Sitting for 2 hours      | Categ |
| 1    | R1CHAIR  | r1chair: w1 R Difficulty-Getting up from chair  | Categ |
| 2    | R2CHAIR  | r2chair: w2 R Difficulty-Getting up from chair  | Categ |
| 3    | R3CHAIR  | r3chair: w3 R Difficulty-Getting up from chair  | Categ |
| 4    | R4CHAIR  | r4chair: w4 R Difficulty-Getting up from chair  | Categ |
| 5    | R5CHAIR  | r5chair: w5 R Difficulty-Getting up from chair  | Categ |
| 1    | S1CHAIR  | s1chair: w1 S Difficulty-Getting up from chair  | Categ |
| 2    | S2CHAIR  | s2chair: w2 S Difficulty-Getting up from chair  | Categ |
| 3    | S3CHAIR  | s3chair: w3 S Difficulty-Getting up from chair  | Categ |
| 4    | S4CHAIR  | s4chair: w4 S Difficulty-Getting up from chair  | Categ |
| 5    | S5CHAIR  | s5chair: w5 S Difficulty-Getting up from chair  | Categ |

|   |         |   |       |
|---|---------|---|-------|
| 1 | R1CLIMS | r1clims: w1 R Difficulty-Climbing sev flts stairs | Categ |
| 2 | R2CLIMS | r2clims: w2 R Difficulty-Climbing sev flts stairs | Categ |
| 3 | R3CLIMS | r3clims: w3 R Difficulty-Climbing sev flts stairs | Categ |
| 4 | R4CLIMS | r4clims: w4 R Difficulty-Climbing sev flts stairs | Categ |
| 5 | R5CLIMS | r5clims: w5 R Difficulty-Climbing sev flts stairs | Categ |
| 1 | S1CLIMS | s1clims: w1 S Difficulty-Climbing sev flts stairs | Categ |
| 2 | S2CLIMS | s2clims: w2 S Difficulty-Climbing sev flts stairs | Categ |
| 3 | S3CLIMS | s3clims: w3 S Difficulty-Climbing sev flts stairs | Categ |
| 4 | S4CLIMS | s4clims: w4 S Difficulty-Climbing sev flts stairs | Categ |
| 5 | S5CLIMS | s5clims: w5 S Difficulty-Climbing sev flts stairs | Categ |
| 1 | R1CLIM1 | r1clim1: w1 R Difficulty-Climbing one flt stairs  | Categ |
| 2 | R2CLIM1 | r2clim1: w2 R Difficulty-Climbing one flt stairs  | Categ |
| 3 | R3CLIM1 | r3clim1: w3 R Difficulty-Climbing one flt stairs  | Categ |
| 4 | R4CLIM1 | r4clim1: w4 R Difficulty-Climbing one flt stairs  | Categ |
| 5 | R5CLIM1 | r5clim1: w5 R Difficulty-Climbing one flt stairs  | Categ |
| 1 | S1CLIM1 | s1clim1: w1 S Difficulty-Climbing one flt stairs  | Categ |
| 2 | S2CLIM1 | s2clim1: w2 S Difficulty-Climbing one flt stairs  | Categ |
| 3 | S3CLIM1 | s3clim1: w3 S Difficulty-Climbing one flt stairs  | Categ |
| 4 | S4CLIM1 | s4clim1: w4 S Difficulty-Climbing one flt stairs  | Categ |
| 5 | S5CLIM1 | s5clim1: w5 S Difficulty-Climbing one flt stairs  | Categ |
| 1 | R1STOOP | r1stoop: w1 R Difficulty-Stoop/kneel/crouching    | Categ |
| 2 | R2STOOP | r2stoop: w2 R Difficulty-Stoop/kneel/crouching    | Categ |
| 3 | R3STOOP | r3stoop: w3 R Difficulty-Stoop/kneel/crouching    | Categ |
| 4 | R4STOOP | r4stoop: w4 R Difficulty-Stoop/kneel/crouching    | Categ |
| 5 | R5STOOP | r5stoop: w5 R Difficulty-Stoop/kneel/crouching    | Categ |
| 1 | S1STOOP | s1stoop: w1 S Difficulty-Stoop/kneel/crouching    | Categ |
| 2 | S2STOOP | s2stoop: w2 S Difficulty-Stoop/kneel/crouching    | Categ |
| 3 | S3STOOP | s3stoop: w3 S Difficulty-Stoop/kneel/crouching    | Categ |
| 4 | S4STOOP | s4stoop: w4 S Difficulty-Stoop/kneel/crouching    | Categ |
| 5 | S5STOOP | s5stoop: w5 S Difficulty-Stoop/kneel/crouching    | Categ |
| 1 | R1LIFT  | r1lift: w1 R Difficulty-Lift/carrying 5 kgs       | Categ |
| 2 | R2LIFT  | r2lift: w2 R Difficulty-Lift/carrying 5 kgs       | Categ |
| 3 | R3LIFT  | r3lift: w3 R Difficulty-Lift/carrying 5 kgs       | Categ |
| 4 | R4LIFT  | r4lift: w4 R Difficulty-Lift/carrying 5 kgs       | Categ |
| 5 | R5LIFT  | r5lift: w5 R Difficulty-Lift/carrying 5 kgs       | Categ |
| 1 | S1LIFT  | s1lift: w1 S Difficulty-Lift/carrying 5 kgs       | Categ |
| 2 | S2LIFT  | s2lift: w2 S Difficulty-Lift/carrying 5 kgs       | Categ |
| 3 | S3LIFT  | s3lift: w3 S Difficulty-Lift/carrying 5 kgs       | Categ |
| 4 | S4LIFT  | s4lift: w4 S Difficulty-Lift/carrying 5 kgs       | Categ |
| 5 | S5LIFT  | s5lift: w5 S Difficulty-Lift/carrying 5 kgs       | Categ |
| 1 | R1DIME  | r1dime: w1 R Difficulty-Picking up a coin         | Categ |
| 2 | R2DIME  | r2dime: w2 R Difficulty-Picking up a coin         | Categ |
| 3 | R3DIME  | r3dime: w3 R Difficulty-Picking up a coin         | Categ |
| 4 | R4DIME  | r4dime: w4 R Difficulty-Picking up a coin         | Categ |
| 5 | R5DIME  | r5dime: w5 R Difficulty-Picking up a coin         | Categ |
| 1 | S1DIME  | s1dime: w1 S Difficulty-Picking up a coin         | Categ |
| 2 | S2DIME  | s2dime: w2 S Difficulty-Picking up a coin         | Categ |
| 3 | S3DIME  | s3dime: w3 S Difficulty-Picking up a coin         | Categ |
| 4 | S4DIME  | s4dime: w4 S Difficulty-Picking up a coin         | Categ |
| 5 | S5DIME  | s5dime: w5 S Difficulty-Picking up a coin         | Categ |
| 1 | R1ARMS  | r1arms: w1 R Difficulty-Reach/extending arms up   | Categ |
| 2 | R2ARMS  | r2arms: w2 R Difficulty-Reach/extending arms up   | Categ |
| 3 | R3ARMS  | r3arms: w3 R Difficulty-Reach/extending arms up   | Categ |

|   |        |            |   |       |
|---|--------|------------|---|-------|
| 4 | R4ARMS | r4arms: w4 | R Difficulty-Reach/extending arms up    | Categ |
| 5 | R5ARMS | r5arms: w5 | R Difficulty-Reach/extending arms up    | Categ |
| 1 | S1ARMS | s1arms: w1 | S Difficulty-Reach/extending arms up    | Categ |
| 2 | S2ARMS | s2arms: w2 | S Difficulty-Reach/extending arms up    | Categ |
| 3 | S3ARMS | s3arms: w3 | S Difficulty-Reach/extending arms up    | Categ |
| 4 | S4ARMS | s4arms: w4 | S Difficulty-Reach/extending arms up    | Categ |
| 5 | S5ARMS | s5arms: w5 | S Difficulty-Reach/extending arms up    | Categ |
| 1 | R1PUSH | r1push: w1 | R Difficulty-Push/pulling large objects | Categ |
| 2 | R2PUSH | r2push: w2 | R Difficulty-Push/pulling large objects | Categ |
| 3 | R3PUSH | r3push: w3 | R Difficulty-Push/pulling large objects | Categ |
| 4 | R4PUSH | r4push: w4 | R Difficulty-Push/pulling large objects | Categ |
| 5 | R5PUSH | r5push: w5 | R Difficulty-Push/pulling large objects | Categ |
| 1 | S1PUSH | s1push: w1 | S Difficulty-Push/pulling large objects | Categ |
| 2 | S2PUSH | s2push: w2 | S Difficulty-Push/pulling large objects | Categ |
| 3 | S3PUSH | s3push: w3 | S Difficulty-Push/pulling large objects | Categ |
| 4 | S4PUSH | s4push: w4 | S Difficulty-Push/pulling large objects | Categ |
| 5 | S5PUSH | s5push: w5 | S Difficulty-Push/pulling large objects | Categ |

## Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1WALKS  | 14098 | 0.30 | 0.80    | 0.00    | 9.00    |
| R2WALKS  | 12500 | 0.33 | 0.93    | 0.00    | 9.00    |
| R3WALKS  | 14444 | 0.32 | 0.76    | 0.00    | 9.00    |
| R4WALKS  | 13804 | 0.39 | 1.00    | 0.00    | 9.00    |
| R5WALKS  | 15763 | 0.30 | 0.73    | 0.00    | 9.00    |
| S1WALKS  | 9964  | 0.26 | 0.73    | 0.00    | 9.00    |
| S2WALKS  | 8736  | 0.28 | 0.82    | 0.00    | 9.00    |
| S3WALKS  | 9865  | 0.27 | 0.67    | 0.00    | 9.00    |
| S4WALKS  | 9167  | 0.33 | 0.87    | 0.00    | 9.00    |
| S5WALKS  | 7066  | 0.31 | 0.64    | 0.00    | 9.00    |
| R1JOG    | 13931 | 2.26 | 3.42    | 0.00    | 9.00    |
| R2JOG    | 12431 | 2.35 | 3.46    | 0.00    | 9.00    |
| R3JOG    | 14393 | 1.68 | 2.90    | 0.00    | 9.00    |
| R4JOG    | 13790 | 1.90 | 3.06    | 0.00    | 9.00    |
| R5JOG    | 15730 | 1.14 | 2.27    | 0.00    | 9.00    |
| S1JOG    | 9845  | 2.20 | 3.41    | 0.00    | 9.00    |
| S2JOG    | 8689  | 2.27 | 3.44    | 0.00    | 9.00    |
| S3JOG    | 9828  | 1.61 | 2.87    | 0.00    | 9.00    |
| S4JOG    | 9160  | 1.80 | 3.03    | 0.00    | 9.00    |
| S5JOG    | 7047  | 1.16 | 2.25    | 0.00    | 9.00    |
| R1WALK1  | 13999 | 0.16 | 0.73    | 0.00    | 9.00    |
| R2WALK1  | 12500 | 0.16 | 0.75    | 0.00    | 9.00    |
| R3WALK1  | 14443 | 0.15 | 0.56    | 0.00    | 9.00    |
| R4WALK1  | 13804 | 0.19 | 0.72    | 0.00    | 9.00    |
| R5WALK1  | 15761 | 0.16 | 0.56    | 0.00    | 9.00    |
| S1WALK1  | 9894  | 0.13 | 0.68    | 0.00    | 9.00    |
| S2WALK1  | 8736  | 0.13 | 0.62    | 0.00    | 9.00    |
| S3WALK1  | 9864  | 0.12 | 0.46    | 0.00    | 9.00    |
| S4WALK1  | 9167  | 0.15 | 0.61    | 0.00    | 9.00    |
| S5WALK1  | 7065  | 0.16 | 0.53    | 0.00    | 9.00    |
| R1SIT    | 14094 | 0.21 | 0.65    | 0.00    | 9.00    |
| R2SIT    | 12501 | 0.18 | 0.55    | 0.00    | 9.00    |
| R3SIT    | 14445 | 0.23 | 0.65    | 0.00    | 9.00    |

|         |       |      |      |      |      |
|---------|-------|------|------|------|------|
| R4SIT   | 13801 | 0.24 | 0.62 | 0.00 | 9.00 |
| R5SIT   | 15763 | 0.22 | 0.54 | 0.00 | 9.00 |
| S1SIT   | 9958  | 0.19 | 0.63 | 0.00 | 9.00 |
| S2SIT   | 8737  | 0.17 | 0.56 | 0.00 | 9.00 |
| S3SIT   | 9864  | 0.21 | 0.64 | 0.00 | 9.00 |
| S4SIT   | 9166  | 0.22 | 0.58 | 0.00 | 9.00 |
| S5SIT   | 7066  | 0.22 | 0.50 | 0.00 | 9.00 |
| R1CHAIR | 14095 | 0.29 | 0.58 | 0.00 | 9.00 |
| R2CHAIR | 12499 | 0.25 | 0.54 | 0.00 | 9.00 |
| R3CHAIR | 14446 | 0.31 | 0.55 | 0.00 | 9.00 |
| R4CHAIR | 13803 | 0.36 | 0.60 | 0.00 | 9.00 |
| R5CHAIR | 15762 | 0.34 | 0.59 | 0.00 | 9.00 |
| S1CHAIR | 9959  | 0.27 | 0.57 | 0.00 | 9.00 |
| S2CHAIR | 8736  | 0.23 | 0.53 | 0.00 | 9.00 |
| S3CHAIR | 9865  | 0.29 | 0.57 | 0.00 | 9.00 |
| S4CHAIR | 9167  | 0.34 | 0.55 | 0.00 | 9.00 |
| S5CHAIR | 7065  | 0.34 | 0.55 | 0.00 | 9.00 |
| R1CLIMS | 13915 | 1.32 | 2.64 | 0.00 | 9.00 |
| R2CLIMS | 12437 | 1.42 | 2.80 | 0.00 | 9.00 |
| R3CLIMS | 14416 | 1.13 | 2.38 | 0.00 | 9.00 |
| R4CLIMS | 13794 | 1.14 | 2.32 | 0.00 | 9.00 |
| R5CLIMS | 15696 | 0.71 | 1.60 | 0.00 | 9.00 |
| S1CLIMS | 9828  | 1.29 | 2.66 | 0.00 | 9.00 |
| S2CLIMS | 8698  | 1.34 | 2.74 | 0.00 | 9.00 |
| S3CLIMS | 9845  | 1.06 | 2.34 | 0.00 | 9.00 |
| S4CLIMS | 9159  | 1.01 | 2.18 | 0.00 | 9.00 |
| S5CLIMS | 7029  | 0.73 | 1.62 | 0.00 | 9.00 |
| R1CLIM1 | 13973 | 0.46 | 1.53 | 0.00 | 9.00 |
| R2CLIM1 | 12477 | 0.48 | 1.59 | 0.00 | 9.00 |
| R3CLIM1 | 14426 | 0.64 | 1.87 | 0.00 | 9.00 |
| R4CLIM1 | 13798 | 0.61 | 1.75 | 0.00 | 9.00 |
| R5CLIM1 | 15735 | 0.37 | 1.11 | 0.00 | 9.00 |
| S1CLIM1 | 9871  | 0.41 | 1.46 | 0.00 | 9.00 |
| S2CLIM1 | 8723  | 0.42 | 1.51 | 0.00 | 9.00 |
| S3CLIM1 | 9853  | 0.59 | 1.82 | 0.00 | 9.00 |
| S4CLIM1 | 9163  | 0.51 | 1.59 | 0.00 | 9.00 |
| S5CLIM1 | 7053  | 0.37 | 1.09 | 0.00 | 9.00 |
| R1STOOP | 14095 | 0.40 | 0.78 | 0.00 | 9.00 |
| R2STOOP | 12496 | 0.39 | 0.81 | 0.00 | 9.00 |
| R3STOOP | 14445 | 0.47 | 0.82 | 0.00 | 9.00 |
| R4STOOP | 13803 | 0.54 | 0.92 | 0.00 | 9.00 |
| R5STOOP | 15760 | 0.46 | 0.79 | 0.00 | 9.00 |
| S1STOOP | 9958  | 0.37 | 0.74 | 0.00 | 9.00 |
| S2STOOP | 8734  | 0.35 | 0.76 | 0.00 | 9.00 |
| S3STOOP | 9865  | 0.42 | 0.74 | 0.00 | 9.00 |
| S4STOOP | 9167  | 0.48 | 0.79 | 0.00 | 9.00 |
| S5STOOP | 7064  | 0.48 | 0.76 | 0.00 | 9.00 |
| R1LIFT  | 14102 | 0.29 | 1.02 | 0.00 | 9.00 |
| R2LIFT  | 12494 | 0.30 | 1.04 | 0.00 | 9.00 |
| R3LIFT  | 14442 | 0.37 | 1.14 | 0.00 | 9.00 |
| R4LIFT  | 13803 | 0.49 | 1.41 | 0.00 | 9.00 |
| R5LIFT  | 15760 | 0.34 | 0.96 | 0.00 | 9.00 |
| S1LIFT  | 9967  | 0.23 | 0.87 | 0.00 | 9.00 |



|        |       |      |      |      |      |
|--------|-------|------|------|------|------|
| S2LIFT | 8734  | 0.23 | 0.88 | 0.00 | 9.00 |
| S3LIFT | 9864  | 0.30 | 0.99 | 0.00 | 9.00 |
| S4LIFT | 9167  | 0.37 | 1.18 | 0.00 | 9.00 |
| S5LIFT | 7065  | 0.32 | 0.89 | 0.00 | 9.00 |
| R1DIME | 14091 | 0.07 | 0.39 | 0.00 | 9.00 |
| R2DIME | 12501 | 0.07 | 0.37 | 0.00 | 9.00 |
| R3DIME | 14445 | 0.08 | 0.34 | 0.00 | 9.00 |
| R4DIME | 13802 | 0.08 | 0.40 | 0.00 | 9.00 |
| R5DIME | 15759 | 0.09 | 0.39 | 0.00 | 9.00 |
| S1DIME | 9960  | 0.05 | 0.34 | 0.00 | 9.00 |
| S2DIME | 8737  | 0.05 | 0.33 | 0.00 | 9.00 |
| S3DIME | 9864  | 0.07 | 0.31 | 0.00 | 9.00 |
| S4DIME | 9165  | 0.07 | 0.38 | 0.00 | 9.00 |
| S5DIME | 7064  | 0.10 | 0.35 | 0.00 | 9.00 |
| R1ARMS | 14097 | 0.12 | 0.47 | 0.00 | 9.00 |
| R2ARMS | 12500 | 0.11 | 0.36 | 0.00 | 9.00 |
| R3ARMS | 14446 | 0.14 | 0.39 | 0.00 | 9.00 |
| R4ARMS | 13804 | 0.16 | 0.44 | 0.00 | 9.00 |
| R5ARMS | 15761 | 0.15 | 0.45 | 0.00 | 9.00 |
| S1ARMS | 9961  | 0.11 | 0.41 | 0.00 | 9.00 |
| S2ARMS | 8736  | 0.09 | 0.31 | 0.00 | 9.00 |
| S3ARMS | 9865  | 0.12 | 0.36 | 0.00 | 9.00 |
| S4ARMS | 9167  | 0.14 | 0.40 | 0.00 | 9.00 |
| S5ARMS | 7065  | 0.15 | 0.44 | 0.00 | 9.00 |
| R1PUSH | 14098 | 0.35 | 1.19 | 0.00 | 9.00 |
| R2PUSH | 12499 | 0.34 | 1.21 | 0.00 | 9.00 |
| R3PUSH | 14445 | 0.43 | 1.32 | 0.00 | 9.00 |
| R4PUSH | 13803 | 0.49 | 1.41 | 0.00 | 9.00 |
| R5PUSH | 15757 | 0.35 | 1.05 | 0.00 | 9.00 |
| S1PUSH | 9963  | 0.28 | 1.04 | 0.00 | 9.00 |
| S2PUSH | 8737  | 0.28 | 1.08 | 0.00 | 9.00 |
| S3PUSH | 9865  | 0.36 | 1.17 | 0.00 | 9.00 |
| S4PUSH | 9166  | 0.39 | 1.22 | 0.00 | 9.00 |
| S5PUSH | 7063  | 0.35 | 1.01 | 0.00 | 9.00 |

Categorical Variable Codes

|                               |         |         |         |         |         |
|-------------------------------|---------|---------|---------|---------|---------|
| Value-----                    | R1WALKS | R2WALKS | R3WALKS | R4WALKS | R5WALKS |
| .d:DK                         | 6       | 1       | 3       | 5       |         |
| .m:Missing                    | 38      | 25      |         | 40      | 17      |
| .p:Proxy interview, not asked | 1032    | 1178    | 1275    | 929     | 1328    |
| .r:Refuse                     | 12      |         | 1       | 1       | 6       |
| 0.No                          | 10634   | 9382    | 10487   | 9638    | 11576   |
| 1.Yes                         | 3322    | 2950    | 3847    | 3893    | 4050    |
| 2.Can't Do                    | 60      | 57      | 40      | 130     | 69      |
| 9.Don't Do                    | 82      | 111     | 70      | 143     | 68      |
| Value-----                    | S1WALKS | S2WALKS | S3WALKS | S4WALKS | S5WALKS |
| .d:DK                         | 5       | 1       | 1       | 5       |         |
| .m:Missing                    | 13      | 6       |         | 10      | 5       |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 6       |         |         |         | 4       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| 0.No                          | 7769    | 6811    | 7446    | 6722    | 5068    |
| 1.Yes                         | 2116    | 1838    | 2365    | 2306    | 1956    |
| 2.Can't Do                    | 33      | 31      | 20      | 73      | 23      |
| 9.Don't Do                    | 46      | 56      | 34      | 66      | 19      |
| Value-----                    | R1JOG   | R2JOG   | R3JOG   | R4JOG   | R5JOG   |

|                               |         |         |         |         |         |
|-------------------------------|---------|---------|---------|---------|---------|
| .d:DK                         | 114     | 52      | 46      | 17      | 21      |
| .m:Missing                    | 38      | 25      |         | 40      | 17      |
| .p:Proxy interview, not asked | 1032    | 1178    | 1275    | 929     | 1328    |
| .r:Refuse                     | 71      | 18      | 9       | 3       | 18      |
| 0.No                          | 5102    | 4358    | 5631    | 4881    | 7215    |
| 1.Yes                         | 5802    | 5170    | 6694    | 6476    | 7212    |
| 2.Can't Do                    | 219     | 299     | 164     | 320     | 148     |
| 9.Don't Do                    | 2808    | 2604    | 1904    | 2113    | 1155    |
| Value-----                    | S1JOG   | S2JOG   | S3JOG   | S4JOG   | S5JOG   |
| .d:DK                         | 85      | 35      | 34      | 10      | 11      |
| .m:Missing                    | 13      | 6       |         | 10      | 5       |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 45      | 13      | 4       | 2       | 12      |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| 0.No                          | 3887    | 3340    | 4191    | 3588    | 2993    |
| 1.Yes                         | 3867    | 3380    | 4279    | 4026    | 3485    |
| 2.Can't Do                    | 142     | 194     | 100     | 201     | 57      |
| 9.Don't Do                    | 1949    | 1775    | 1258    | 1345    | 512     |
| Value-----                    | R1WALK1 | R2WALK1 | R3WALK1 | R4WALK1 | R5WALK1 |
| .d:DK                         | 26      |         | 3       | 5       | 1       |
| .m:Missing                    | 38      | 25      |         | 40      | 17      |
| .p:Proxy interview, not asked | 1032    | 1178    | 1275    | 929     | 1328    |
| .r:Refuse                     | 91      | 1       | 2       | 1       | 7       |
| 0.No                          | 12476   | 11067   | 12559   | 11772   | 13695   |
| 1.Yes                         | 1395    | 1311    | 1816    | 1856    | 1914    |
| 2.Can't Do                    | 51      | 50      | 32      | 109     | 115     |
| 9.Don't Do                    | 77      | 72      | 36      | 67      | 37      |
| Value-----                    | S1WALK1 | S2WALK1 | S3WALK1 | S4WALK1 | S5WALK1 |
| .d:DK                         | 16      |         | 1       | 5       |         |
| .m:Missing                    | 13      | 6       |         | 10      | 5       |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 65      | 1       | 1       |         | 5       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| 0.No                          | 8972    | 7929    | 8791    | 8049    | 6090    |
| 1.Yes                         | 845     | 741     | 1045    | 1029    | 917     |
| 2.Can't Do                    | 30      | 33      | 14      | 60      | 45      |
| 9.Don't Do                    | 47      | 33      | 14      | 29      | 13      |
| Value-----                    | R1SIT   | R2SIT   | R3SIT   | R4SIT   | R5SIT   |
| .d:DK                         | 7       |         | 2       | 8       | 1       |
| .m:Missing                    | 38      | 25      |         | 40      | 17      |
| .p:Proxy interview, not asked | 1032    | 1178    | 1275    | 929     | 1328    |
| .r:Refuse                     | 15      |         | 1       | 1       | 5       |
| 0.No                          | 11560   | 10504   | 11594   | 10856   | 12677   |
| 1.Yes                         | 2473    | 1945    | 2783    | 2890    | 2873    |
| 2.Can't Do                    | 12      | 25      | 18      | 17      | 191     |
| 9.Don't Do                    | 49      | 27      | 50      | 38      | 22      |
| Value-----                    | S1SIT   | S2SIT   | S3SIT   | S4SIT   | S5SIT   |
| .d:DK                         | 4       |         | 2       | 6       | 1       |
| .m:Missing                    | 13      | 6       |         | 10      | 5       |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 13      |         |         |         | 3       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| 0.No                          | 8318    | 7430    | 8036    | 7289    | 5652    |
| 1.Yes                         | 1599    | 1271    | 1782    | 1847    | 1332    |
| 2.Can't Do                    | 7       | 15      | 13      | 9       | 76      |
| 9.Don't Do                    | 34      | 21      | 33      | 21      | 6       |
| Value-----                    | R1CHAIR | R2CHAIR | R3CHAIR | R4CHAIR | R5CHAIR |
| .d:DK                         | 7       | 2       | 1       | 6       |         |
| .m:Missing                    | 38      | 25      |         | 40      | 17      |
| .p:Proxy interview, not asked | 1032    | 1178    | 1275    | 929     | 1328    |
| .r:Refuse                     | 14      |         | 1       | 1       | 7       |
| 0.No                          | 10272   | 9526    | 10089   | 9058    | 10747   |
| 1.Yes                         | 3784    | 2933    | 4318    | 4675    | 4837    |
| 2.Can't Do                    | 13      | 22      | 21      | 46      | 156     |

|                               |         |         |         |         |         |
|-------------------------------|---------|---------|---------|---------|---------|
| 9.Don't Do                    | 26      | 18      | 18      | 24      | 22      |
| Value-----                    | S1CHAIR | S2CHAIR | S3CHAIR | S4CHAIR | S5CHAIR |
| .d:DK                         | 5       | 1       | 1       | 5       |         |
| .m:Missing                    | 13      | 6       |         | 10      | 5       |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 11      |         |         |         | 5       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| 0.No                          | 7459    | 6825    | 7089    | 6159    | 4756    |
| 1.Yes                         | 2475    | 1885    | 2749    | 2976    | 2239    |
| 2.Can't Do                    | 7       | 14      | 12      | 22      | 64      |
| 9.Don't Do                    | 18      | 12      | 15      | 10      | 6       |
| Value-----                    | R1CLIMS | R2CLIMS | R3CLIMS | R4CLIMS | R5CLIMS |
| .d:DK                         | 115     | 61      | 30      | 15      | 33      |
| .m:Missing                    | 38      | 25      |         | 40      | 17      |
| .p:Proxy interview, not asked | 1032    | 1178    | 1275    | 929     | 1328    |
| .r:Refuse                     | 86      | 3       | 2       | 1       | 40      |
| 0.No                          | 7158    | 6523    | 7491    | 6762    | 8864    |
| 1.Yes                         | 5178    | 4275    | 5659    | 5715    | 6149    |
| 2.Can't Do                    | 152     | 188     | 109     | 263     | 175     |
| 9.Don't Do                    | 1427    | 1451    | 1157    | 1054    | 508     |
| Value-----                    | S1CLIMS | S2CLIMS | S3CLIMS | S4CLIMS | S5CLIMS |
| .d:DK                         | 85      | 36      | 20      | 13      | 16      |
| .m:Missing                    | 13      | 6       |         | 10      | 5       |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 62      | 3       | 1       |         | 25      |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| 0.No                          | 5346    | 4842    | 5465    | 4875    | 3816    |
| 1.Yes                         | 3370    | 2783    | 3576    | 3547    | 2903    |
| 2.Can't Do                    | 95      | 115     | 50      | 138     | 76      |
| 9.Don't Do                    | 1017    | 958     | 754     | 599     | 234     |
| Value-----                    | R1CLIM1 | R2CLIM1 | R3CLIM1 | R4CLIM1 | R5CLIM1 |
| .d:DK                         | 58      | 19      | 20      | 10      | 15      |
| .m:Missing                    | 38      | 25      |         | 40      | 17      |
| .p:Proxy interview, not asked | 1032    | 1178    | 1275    | 929     | 1328    |
| .r:Refuse                     | 85      | 5       | 2       | 2       | 19      |
| 0.No                          | 10848   | 9710    | 10474   | 9831    | 11871   |
| 1.Yes                         | 2631    | 2283    | 3210    | 3224    | 3455    |
| 2.Can't Do                    | 88      | 89      | 91      | 205     | 197     |
| 9.Don't Do                    | 406     | 395     | 651     | 538     | 212     |
| Value-----                    | S1CLIM1 | S2CLIM1 | S3CLIM1 | S4CLIM1 | S5CLIM1 |
| .d:DK                         | 46      | 10      | 12      | 9       | 9       |
| .m:Missing                    | 13      | 6       |         | 10      | 5       |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 58      | 4       | 1       |         | 8       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| 0.No                          | 7947    | 7053    | 7474    | 6900    | 5255    |
| 1.Yes                         | 1614    | 1369    | 1918    | 1870    | 1631    |
| 2.Can't Do                    | 52      | 57      | 41      | 108     | 76      |
| 9.Don't Do                    | 258     | 244     | 420     | 285     | 91      |
| Value-----                    | R1STOOP | R2STOOP | R3STOOP | R4STOOP | R5STOOP |
| .d:DK                         | 9       | 4       | 2       | 5       | 1       |
| .m:Missing                    | 38      | 25      |         | 40      | 17      |
| .p:Proxy interview, not asked | 1032    | 1178    | 1275    | 929     | 1328    |
| .r:Refuse                     | 12      | 1       | 1       | 2       | 8       |
| 0.No                          | 9071    | 8292    | 8446    | 7504    | 9238    |
| 1.Yes                         | 4844    | 4036    | 5785    | 5935    | 6301    |
| 2.Can't Do                    | 112     | 98      | 134     | 256     | 142     |
| 9.Don't Do                    | 68      | 70      | 80      | 108     | 79      |
| Value-----                    | S1STOOP | S2STOOP | S3STOOP | S4STOOP | S5STOOP |
| .d:DK                         | 7       | 2       | 1       | 5       | 1       |
| .m:Missing                    | 13      | 6       |         | 10      | 5       |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 10      | 1       |         |         | 5       |

|                               |  |        |        |        |        |        |
|-------------------------------|--|--------|--------|--------|--------|--------|
| .u:Unmar                      |  | 4205   | 4009   | 4782   | 4847   | 5227   |
| .v:SP NR                      |  | 333    | 131    | 349    | 280    | 501    |
| 0.No                          |  | 6704   | 6039   | 6114   | 5264   | 3966   |
| 1.Yes                         |  | 3148   | 2598   | 3637   | 3731   | 3002   |
| 2.Can't Do                    |  | 65     | 57     | 74     | 127    | 66     |
| 9.Don't Do                    |  | 41     | 40     | 40     | 45     | 30     |
| Value-----                    |  | R1LIFT | R2LIFT | R3LIFT | R4LIFT | R5LIFT |
| .d:DK                         |  | 6      | 7      | 3      | 6      | 1      |
| .m:Missing                    |  | 38     | 25     |        | 40     | 17     |
| .p:Proxy interview, not asked |  | 1032   | 1178   | 1275   | 929    | 1328   |
| .r:Refuse                     |  | 8      |        | 3      | 1      | 8      |
| 0.No                          |  | 11355  | 10094  | 10837  | 9855   | 11772  |
| 1.Yes                         |  | 2500   | 2169   | 3289   | 3395   | 3730   |
| 2.Can't Do                    |  | 88     | 80     | 104    | 224    | 109    |
| 9.Don't Do                    |  | 159    | 151    | 212    | 329    | 149    |
| Value-----                    |  | S1LIFT | S2LIFT | S3LIFT | S4LIFT | S5LIFT |
| .d:DK                         |  | 3      | 3      | 2      | 5      |        |
| .m:Missing                    |  | 13     | 6      |        | 10     | 5      |
| .p:Proxy interview, not asked |  | 660    | 821    | 726    | 470    | 563    |
| .r:Refuse                     |  | 5      |        |        |        | 5      |
| .u:Unmar                      |  | 4205   | 4009   | 4782   | 4847   | 5227   |
| .v:SP NR                      |  | 333    | 131    | 349    | 280    | 501    |
| 0.No                          |  | 8378   | 7364   | 7803   | 7018   | 5295   |
| 1.Yes                         |  | 1456   | 1253   | 1907   | 1900   | 1669   |
| 2.Can't Do                    |  | 53     | 45     | 51     | 105    | 46     |
| 9.Don't Do                    |  | 80     | 72     | 103    | 144    | 55     |
| Value-----                    |  | R1DIME | R2DIME | R3DIME | R4DIME | R5DIME |
| .d:DK                         |  | 9      |        | 2      | 7      |        |
| .m:Missing                    |  | 38     | 25     |        | 40     | 17     |
| .p:Proxy interview, not asked |  | 1032   | 1178   | 1275   | 929    | 1328   |
| .r:Refuse                     |  | 16     |        | 1      | 1      | 10     |
| 0.No                          |  | 13324  | 11785  | 13391  | 12796  | 14469  |
| 1.Yes                         |  | 731    | 683    | 1014   | 956    | 1217   |
| 2.Can't Do                    |  | 19     | 21     | 32     | 35     | 59     |
| 9.Don't Do                    |  | 17     | 12     | 8      | 15     | 14     |
| Value-----                    |  | S1DIME | S2DIME | S3DIME | S4DIME | S5DIME |
| .d:DK                         |  | 5      |        | 2      | 7      |        |
| .m:Missing                    |  | 13     | 6      |        | 10     | 5      |
| .p:Proxy interview, not asked |  | 660    | 821    | 726    | 470    | 563    |
| .r:Refuse                     |  | 10     |        |        |        | 6      |
| .u:Unmar                      |  | 4205   | 4009   | 4782   | 4847   | 5227   |
| .v:SP NR                      |  | 333    | 131    | 349    | 280    | 501    |
| 0.No                          |  | 9513   | 8341   | 9245   | 8579   | 6437   |
| 1.Yes                         |  | 431    | 378    | 596    | 557    | 600    |
| 2.Can't Do                    |  | 7      | 11     | 19     | 20     | 24     |
| 9.Don't Do                    |  | 9      | 7      | 4      | 9      | 3      |
| Value-----                    |  | R1ARMS | R2ARMS | R3ARMS | R4ARMS | R5ARMS |
| .d:DK                         |  | 7      |        | 1      | 5      |        |
| .m:Missing                    |  | 38     | 25     |        | 40     | 17     |
| .p:Proxy interview, not asked |  | 1032   | 1178   | 1275   | 929    | 1328   |
| .r:Refuse                     |  | 12     | 1      | 1      | 1      | 8      |
| 0.No                          |  | 12539  | 11238  | 12488  | 11721  | 13603  |
| 1.Yes                         |  | 1514   | 1238   | 1921   | 2020   | 2094   |
| 2.Can't Do                    |  | 23     | 18     | 32     | 53     | 49     |
| 9.Don't Do                    |  | 21     | 6      | 5      | 10     | 15     |
| Value-----                    |  | S1ARMS | S2ARMS | S3ARMS | S4ARMS | S5ARMS |
| .d:DK                         |  | 4      |        | 1      | 5      |        |
| .m:Missing                    |  | 13     | 6      |        | 10     | 5      |
| .p:Proxy interview, not asked |  | 660    | 821    | 726    | 470    | 563    |
| .r:Refuse                     |  | 10     | 1      |        |        | 5      |
| .u:Unmar                      |  | 4205   | 4009   | 4782   | 4847   | 5227   |
| .v:SP NR                      |  | 333    | 131    | 349    | 280    | 501    |
| 0.No                          |  | 8990   | 7946   | 8672   | 7942   | 6071   |
| 1.Yes                         |  | 944    | 777    | 1172   | 1192   | 971    |
| 2.Can't Do                    |  | 17     | 12     | 19     | 29     | 17     |
| 9.Don't Do                    |  | 10     | 1      | 2      | 4      | 6      |

| Value-----                    | R1PUSH | R2PUSH | R3PUSH | R4PUSH | R5PUSH |
|-------------------------------|--------|--------|--------|--------|--------|
| .d:DK                         | 7      | 2      | 2      | 5      | 2      |
| .m:Missing                    | 38     | 25     |        | 40     | 17     |
| .p:Proxy interview, not asked | 1032   | 1178   | 1275   | 929    | 1328   |
| .r:Refuse                     | 11     |        | 1      | 2      | 10     |
| 0.No                          | 11096  | 10000  | 10663  | 9838   | 11790  |
| 1.Yes                         | 2680   | 2210   | 3378   | 3429   | 3677   |
| 2.Can't Do                    | 94     | 77     | 109    | 206    | 101    |
| 9.Don't Do                    | 228    | 212    | 295    | 330    | 189    |

| Value-----                    | S1PUSH | S2PUSH | S3PUSH | S4PUSH | S5PUSH |
|-------------------------------|--------|--------|--------|--------|--------|
| .d:DK                         | 4      |        | 1      | 5      | 1      |
| .m:Missing                    | 13     | 6      |        | 10     | 5      |
| .p:Proxy interview, not asked | 660    | 821    | 726    | 470    | 563    |
| .r:Refuse                     | 8      |        |        | 1      | 6      |
| .u:Unmar                      | 4205   | 4009   | 4782   | 4847   | 5227   |
| .v:SP NR                      | 333    | 131    | 349    | 280    | 501    |
| 0.No                          | 8175   | 7261   | 7641   | 6926   | 5231   |
| 1.Yes                         | 1612   | 1316   | 2020   | 1978   | 1713   |
| 2.Can't Do                    | 57     | 44     | 48     | 105    | 42     |
| 9.Don't Do                    | 119    | 116    | 156    | 157    | 77     |

## How Constructed

These variables recode the raw variables for difficulty with functional limitations other than ADLs and IADLs as they appear in the MHAS data except for missing values and accounting for skip patterns. The other functional limitations include walking several blocks (RwWALKS), running and jogging one kilometer (RwJOG), walking one block (RwWALK1), sitting for about 2 hours (RwSIT), getting up from a chair after sitting for long periods (RwCHAIR), climbing several flights of stairs without resting (RwCLIMS), climbing one flight of stairs without resting (RwCLIM1), stooping/kneeling/or crouching (RwSTOOP), reaching arms above shoulder level (RwARMS), pushing or pulling large objects (RwPUSH), lifting or carrying weights over 5 kilos (RwLIFT), and picking up a small coin (one peso) from the table (RwDIME).

A code of 0 indicates that the respondent did not report any problems with the activity. A code of 1 indicates some difficulty with the activity, and 2 or 9 indicate "can't do" or "don't do", respectively. RwWALKS, RwJOG, RwWALK1, RwSIT, RwCHAIR, RwCLIMS, RwCLIM1, RwSTOOP, RwARMS, RwPUSH, RwLIFT, and RwDIME are assigned special missing values .d for "don't know", .r for refusals, .p for proxy interviews, .m for missing, and are set to plain missing (.) for respondents who did not respond to the current wave.

SwWALKS, SwJOG, SwWALK1, SwSIT, SwCHAIR, SwCLIMS, SwCLIM1, SwSTOOP, SwARMS, SwPUSH, SwLIFT, and SwDIME indicate whether the respondent's spouse reported any difficulty with such activities and are taken directly from the spouse's RwWALKS, RwJOG, RwWALK1, RwSIT, RwCHAIR, RwCLIMS, RwCLIM1, RwSTOOP, RwARMS, RwPUSH, RwLIFT, and RwDIME variables, respectively. In addition to the special missing codes used in the respondent variables, the spouse variables employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

In the HRS introductory questions, respondents are asked whether they have difficulty jogging one mile. However, in the MHAS they ask if the respondent has any difficulty running or jogging one kilometer.

## MHAS Variables Used

|         |                   |
|---------|-------------------|
| Wave 1: |                   |
| H1      | long walk         |
| H10     | pulling           |
| H11     | picking up        |
| H12     | picking up a coin |
| H2      | running           |
| H3      | short walk        |
| H4      | sitting 2 hours   |

|         |   |
|---------|---|
| H5      | getting up  |
| H6      | long climbing   |
| H7      | short climbing  |
| H8      | bending   |
| H9      | extending arms  |
| Wave 2: |   |
| H1      | health problems-trouble walking blocks                  |
| H10     | health problems-trouble pushing or pulling              |
| H11     | health problems-trouble carrying objects                |
| H12     | health problems-trouble picking up a coin               |
| H2      | health problems-trouble running                         |
| H3      | health problems-trouble walking a block                 |
| H4      | health problems-trouble staying seated                  |
| H5      | health problems-trouble getting up from chair           |
| H6      | health problems-trouble with flights of stairs          |
| H7      | health problems-trouble with 1 flight of stairs         |
| H8      | health problems-trouble sitting up                      |
| H9      | health problems-trouble lifting arms                    |
| Wave 3: |   |
| H10_12  | Because of health problem, difficulty pushing or pullin |
| H11_12  | Because of health problem, difficulty carrying objects  |
| H12_12  | Because of health problem, difficulty picking up a coin |
| H1_12   | Because of health problem, difficulty walking blocks    |
| H2_12   | Because of health problem, difficulty running           |
| H3_12   | Because of health problem, difficulty walking a block   |
| H4_12   | Because of health problem, difficulty staying seated    |
| H5_12   | Because of health problem, difficulty getting up from c |
| H6_12   | Because of health problem, difficulty with flights of s |
| H7_12   | Because of health problem, difficulty with 1 flight of  |
| H8_12   | Because of health problem, difficulty sitting up        |
| H9_12   | Because of health problem, difficulty lifting arms      |
| Wave 4: |   |
| H10_15  | Because of health problem, does respondent have difficu |
| H11_15  | Because of health problem, does respondent have difficu |
| H12_15  | Because of health problem, does respondent have difficu |
| H1_15   | Because of health problem, does respondent have difficu |
| H2_15   | Because of health problem, does respondent have difficu |
| H3_15   | Because of health problem, does respondent have difficu |
| H4_15   | Because of health problem, does respondent have difficu |
| H5_15   | Because of health problem, does respondent have difficu |
| H6_15   | Because of health problem, does respondent have difficu |
| H7_15   | Because of health problem, does respondent have difficu |
| H8_15   | Because of health problem, does respondent have difficu |
| H9_15   | Because of health problem, does respondent have difficu |
| Wave 5: |   |
| H10_18  | Because of health problem, does R have difficulty pushi |
| H11_18  | Due to health problem, difficult for R to lift/carry ob |
| H12_18  | Due to health problem, does R have difficulty picking u |
| H1_18   | Because of health problem, does R have difficulty walki |
| H2_18   | Because of health problem, does R have difficulty runni |
| H3_18   | Because of health problem, does R have difficulty walki |
| H4_18   | Because of health problem, does R have difficulty sitti |
| H5_18   | Due to health problem, difficult for R to get up from c |
| H6_18   | Due to health problem, hard for R to climb several flig |
| H7_18   | Due to health problem, difficult for R to climb 1 fligh |
| H8_18   | Due to health problem, does R have difficulty stooping, |
| H9_18   | Due to health problem, difficult for R to reach/extend  |

|  |
|--|
| <b>Other Functional Limitations: Some Difficulty</b> |
|--|

| Wave | Variable | Label   | Type  |
|------|----------|---|-------|
| 1    | R1WALKSA | r1walksa: w1 R Some difficulty-Walking several blocks | Categ |
| 2    | R2WALKSA | r2walksa: w2 R Some difficulty-Walking several blocks | Categ |
| 3    | R3WALKSA | r3walksa: w3 R Some difficulty-Walking several blocks | Categ |
| 4    | R4WALKSA | r4walksa: w4 R Some difficulty-Walking several blocks | Categ |
| 5    | R5WALKSA | r5walksa: w5 R Some difficulty-Walking several blocks | Categ |
| 1    | S1WALKSA | s1walksa: w1 S Some difficulty-Walking several blocks | Categ |
| 2    | S2WALKSA | s2walksa: w2 S Some difficulty-Walking several blocks | Categ |
| 3    | S3WALKSA | s3walksa: w3 S Some difficulty-Walking several blocks | Categ |
| 4    | S4WALKSA | s4walksa: w4 S Some difficulty-Walking several blocks | Categ |
| 5    | S5WALKSA | s5walksa: w5 S Some difficulty-Walking several blocks | Categ |
| 1    | R1JOGA   | r1joga: w1 R Some difficulty-Run/Jogging one km       | Categ |
| 2    | R2JOGA   | r2joga: w2 R Some difficulty-Run/Jogging one km       | Categ |
| 3    | R3JOGA   | r3joga: w3 R Some difficulty-Run/Jogging one km       | Categ |
| 4    | R4JOGA   | r4joga: w4 R Some difficulty-Run/Jogging one km       | Categ |
| 5    | R5JOGA   | r5joga: w5 R Some difficulty-Run/Jogging one km       | Categ |
| 1    | S1JOGA   | s1joga: w1 S Some difficulty-Run/Jogging one km       | Categ |
| 2    | S2JOGA   | s2joga: w2 S Some difficulty-Run/Jogging one km       | Categ |
| 3    | S3JOGA   | s3joga: w3 S Some difficulty-Run/Jogging one km       | Categ |
| 4    | S4JOGA   | s4joga: w4 S Some difficulty-Run/Jogging one km       | Categ |
| 5    | S5JOGA   | s5joga: w5 S Some difficulty-Run/Jogging one km       | Categ |
| 1    | R1WALK1A | r1walk1a: w1 R Some difficulty-Walking one block      | Categ |
| 2    | R2WALK1A | r2walk1a: w2 R Some difficulty-Walking one block      | Categ |
| 3    | R3WALK1A | r3walk1a: w3 R Some difficulty-Walking one block      | Categ |
| 4    | R4WALK1A | r4walk1a: w4 R Some difficulty-Walking one block      | Categ |
| 5    | R5WALK1A | r5walk1a: w5 R Some difficulty-Walking one block      | Categ |
| 1    | S1WALK1A | s1walk1a: w1 S Some difficulty-Walking one block      | Categ |
| 2    | S2WALK1A | s2walk1a: w2 S Some difficulty-Walking one block      | Categ |
| 3    | S3WALK1A | s3walk1a: w3 S Some difficulty-Walking one block      | Categ |
| 4    | S4WALK1A | s4walk1a: w4 S Some difficulty-Walking one block      | Categ |
| 5    | S5WALK1A | s5walk1a: w5 S Some difficulty-Walking one block      | Categ |
| 1    | R1SITA   | r1sita: w1 R Some difficulty-Sitting for 2 hours      | Categ |
| 2    | R2SITA   | r2sita: w2 R Some difficulty-Sitting for 2 hours      | Categ |
| 3    | R3SITA   | r3sita: w3 R Some difficulty-Sitting for 2 hours      | Categ |
| 4    | R4SITA   | r4sita: w4 R Some difficulty-Sitting for 2 hours      | Categ |
| 5    | R5SITA   | r5sita: w5 R Some difficulty-Sitting for 2 hours      | Categ |
| 1    | S1SITA   | s1sita: w1 S Some difficulty-Sitting for 2 hours      | Categ |
| 2    | S2SITA   | s2sita: w2 S Some difficulty-Sitting for 2 hours      | Categ |
| 3    | S3SITA   | s3sita: w3 S Some difficulty-Sitting for 2 hours      | Categ |
| 4    | S4SITA   | s4sita: w4 S Some difficulty-Sitting for 2 hours      | Categ |
| 5    | S5SITA   | s5sita: w5 S Some difficulty-Sitting for 2 hours      | Categ |
| 1    | R1CHAIRA | r1chaira: w1 R Some difficulty-Getting up from chair  | Categ |
| 2    | R2CHAIRA | r2chaira: w2 R Some difficulty-Getting up from chair  | Categ |
| 3    | R3CHAIRA | r3chaira: w3 R Some difficulty-Getting up from chair  | Categ |
| 4    | R4CHAIRA | r4chaira: w4 R Some difficulty-Getting up from chair  | Categ |
| 5    | R5CHAIRA | r5chaira: w5 R Some difficulty-Getting up from chair  | Categ |
| 1    | S1CHAIRA | s1chaira: w1 S Some difficulty-Getting up from chair  | Categ |
| 2    | S2CHAIRA | s2chaira: w2 S Some difficulty-Getting up from chair  | Categ |
| 3    | S3CHAIRA | s3chaira: w3 S Some difficulty-Getting up from chair  | Categ |
| 4    | S4CHAIRA | s4chaira: w4 S Some difficulty-Getting up from chair  | Categ |
| 5    | S5CHAIRA | s5chaira: w5 S Some difficulty-Getting up from chair  | Categ |

|   |          |              |   |   |                 |       |
|---|----------|--------------|---|---|-----------------|-------|
| 1 | R1CLIMSA | r1climsa: w1 | R | Some difficulty-Climbing                | sev flts stairs | Categ |
| 2 | R2CLIMSA | r2climsa: w2 | R | Some difficulty-Climbing                | sev flts stairs | Categ |
| 3 | R3CLIMSA | r3climsa: w3 | R | Some difficulty-Climbing                | sev flts stairs | Categ |
| 4 | R4CLIMSA | r4climsa: w4 | R | Some difficulty-Climbing                | sev flts stairs | Categ |
| 5 | R5CLIMSA | r5climsa: w5 | R | Some difficulty-Climbing                | sev flts stairs | Categ |
| 1 | S1CLIMSA | s1climsa: w1 | S | Some difficulty-Climbing                | sev flts stairs | Categ |
| 2 | S2CLIMSA | s2climsa: w2 | S | Some difficulty-Climbing                | sev flts stairs | Categ |
| 3 | S3CLIMSA | s3climsa: w3 | S | Some difficulty-Climbing                | sev flts stairs | Categ |
| 4 | S4CLIMSA | s4climsa: w4 | S | Some difficulty-Climbing                | sev flts stairs | Categ |
| 5 | S5CLIMSA | s5climsa: w5 | S | Some difficulty-Climbing                | sev flts stairs | Categ |
| 1 | R1CLIM1A | r1clim1a: w1 | R | Some difficulty-Climbing                | one flt stairs  | Categ |
| 2 | R2CLIM1A | r2clim1a: w2 | R | Some difficulty-Climbing                | one flt stairs  | Categ |
| 3 | R3CLIM1A | r3clim1a: w3 | R | Some difficulty-Climbing                | one flt stairs  | Categ |
| 4 | R4CLIM1A | r4clim1a: w4 | R | Some difficulty-Climbing                | one flt stairs  | Categ |
| 5 | R5CLIM1A | r5clim1a: w5 | R | Some difficulty-Climbing                | one flt stairs  | Categ |
| 1 | S1CLIM1A | s1clim1a: w1 | S | Some difficulty-Climbing                | one flt stairs  | Categ |
| 2 | S2CLIM1A | s2clim1a: w2 | S | Some difficulty-Climbing                | one flt stairs  | Categ |
| 3 | S3CLIM1A | s3clim1a: w3 | S | Some difficulty-Climbing                | one flt stairs  | Categ |
| 4 | S4CLIM1A | s4clim1a: w4 | S | Some difficulty-Climbing                | one flt stairs  | Categ |
| 5 | S5CLIM1A | s5clim1a: w5 | S | Some difficulty-Climbing                | one flt stairs  | Categ |
| 1 | R1STOOPA | r1stoopa: w1 | R | Some difficulty-Stoop/kneel/crouching   |                 | Categ |
| 2 | R2STOOPA | r2stoopa: w2 | R | Some difficulty-Stoop/kneel/crouching   |                 | Categ |
| 3 | R3STOOPA | r3stoopa: w3 | R | Some difficulty-Stoop/kneel/crouching   |                 | Categ |
| 4 | R4STOOPA | r4stoopa: w4 | R | Some difficulty-Stoop/kneel/crouching   |                 | Categ |
| 5 | R5STOOPA | r5stoopa: w5 | R | Some difficulty-Stoop/kneel/crouching   |                 | Categ |
| 1 | S1STOOPA | s1stoopa: w1 | S | Some difficulty-Stoop/kneel/crouching   |                 | Categ |
| 2 | S2STOOPA | s2stoopa: w2 | S | Some difficulty-Stoop/kneel/crouching   |                 | Categ |
| 3 | S3STOOPA | s3stoopa: w3 | S | Some difficulty-Stoop/kneel/crouching   |                 | Categ |
| 4 | S4STOOPA | s4stoopa: w4 | S | Some difficulty-Stoop/kneel/crouching   |                 | Categ |
| 5 | S5STOOPA | s5stoopa: w5 | S | Some difficulty-Stoop/kneel/crouching   |                 | Categ |
| 1 | R1LIFTA  | r1lifta: w1  | R | Some difficulty-Lift/carrying           | 5 kgs           | Categ |
| 2 | R2LIFTA  | r2lifta: w2  | R | Some difficulty-Lift/carrying           | 5 kgs           | Categ |
| 3 | R3LIFTA  | r3lifta: w3  | R | Some difficulty-Lift/carrying           | 5 kgs           | Categ |
| 4 | R4LIFTA  | r4lifta: w4  | R | Some difficulty-Lift/carrying           | 5 kgs           | Categ |
| 5 | R5LIFTA  | r5lifta: w5  | R | Some difficulty-Lift/carrying           | 5 kgs           | Categ |
| 1 | S1LIFTA  | s1lifta: w1  | S | Some difficulty-Lift/carrying           | 5 kgs           | Categ |
| 2 | S2LIFTA  | s2lifta: w2  | S | Some difficulty-Lift/carrying           | 5 kgs           | Categ |
| 3 | S3LIFTA  | s3lifta: w3  | S | Some difficulty-Lift/carrying           | 5 kgs           | Categ |
| 4 | S4LIFTA  | s4lifta: w4  | S | Some difficulty-Lift/carrying           | 5 kgs           | Categ |
| 5 | S5LIFTA  | s5lifta: w5  | S | Some difficulty-Lift/carrying           | 5 kgs           | Categ |
| 1 | R1DIMEA  | r1dimea: w1  | R | Some difficulty-Picking up a coin       |                 | Categ |
| 2 | R2DIMEA  | r2dimea: w2  | R | Some difficulty-Picking up a coin       |                 | Categ |
| 3 | R3DIMEA  | r3dimea: w3  | R | Some difficulty-Picking up a coin       |                 | Categ |
| 4 | R4DIMEA  | r4dimea: w4  | R | Some difficulty-Picking up a coin       |                 | Categ |
| 5 | R5DIMEA  | r5dimea: w5  | R | Some difficulty-Picking up a coin       |                 | Categ |
| 1 | S1DIMEA  | s1dimea: w1  | S | Some difficulty-Picking up a coin       |                 | Categ |
| 2 | S2DIMEA  | s2dimea: w2  | S | Some difficulty-Picking up a coin       |                 | Categ |
| 3 | S3DIMEA  | s3dimea: w3  | S | Some difficulty-Picking up a coin       |                 | Categ |
| 4 | S4DIMEA  | s4dimea: w4  | S | Some difficulty-Picking up a coin       |                 | Categ |
| 5 | S5DIMEA  | s5dimea: w5  | S | Some difficulty-Picking up a coin       |                 | Categ |
| 1 | R1ARMSA  | r1armsa: w1  | R | Some difficulty-Reach/extending arms up |                 | Categ |
| 2 | R2ARMSA  | r2armsa: w2  | R | Some difficulty-Reach/extending arms up |                 | Categ |
| 3 | R3ARMSA  | r3armsa: w3  | R | Some difficulty-Reach/extending arms up |                 | Categ |



|   |         |             |   |                        |                       |       |
|---|---------|-------------|---|------------------------|-----------------------|-------|
| 4 | R4ARMSA | r4armsa: w4 | R | Some difficulty-Reach/ | extending arms up     | Categ |
| 5 | R5ARMSA | r5armsa: w5 | R | Some difficulty-Reach/ | extending arms up     | Categ |
| 1 | S1ARMSA | s1armsa: w1 | S | Some difficulty-Reach/ | extending arms up     | Categ |
| 2 | S2ARMSA | s2armsa: w2 | S | Some difficulty-Reach/ | extending arms up     | Categ |
| 3 | S3ARMSA | s3armsa: w3 | S | Some difficulty-Reach/ | extending arms up     | Categ |
| 4 | S4ARMSA | s4armsa: w4 | S | Some difficulty-Reach/ | extending arms up     | Categ |
| 5 | S5ARMSA | s5armsa: w5 | S | Some difficulty-Reach/ | extending arms up     | Categ |
| 1 | R1PUSHA | r1pusha: w1 | R | Some difficulty-Push/  | pulling large objects | Categ |
| 2 | R2PUSHA | r2pusha: w2 | R | Some difficulty-Push/  | pulling large objects | Categ |
| 3 | R3PUSHA | r3pusha: w3 | R | Some difficulty-Push/  | pulling large objects | Categ |
| 4 | R4PUSHA | r4pusha: w4 | R | Some difficulty-Push/  | pulling large objects | Categ |
| 5 | R5PUSHA | r5pusha: w5 | R | Some difficulty-Push/  | pulling large objects | Categ |
| 1 | S1PUSHA | s1pusha: w1 | S | Some difficulty-Push/  | pulling large objects | Categ |
| 2 | S2PUSHA | s2pusha: w2 | S | Some difficulty-Push/  | pulling large objects | Categ |
| 3 | S3PUSHA | s3pusha: w3 | S | Some difficulty-Push/  | pulling large objects | Categ |
| 4 | S4PUSHA | s4pusha: w4 | S | Some difficulty-Push/  | pulling large objects | Categ |
| 5 | S5PUSHA | s5pusha: w5 | S | Some difficulty-Push/  | pulling large objects | Categ |

## Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1WALKSA | 14016 | 0.24 | 0.43    | 0.00    | 1.00    |
| R2WALKSA | 12389 | 0.24 | 0.43    | 0.00    | 1.00    |
| R3WALKSA | 14374 | 0.27 | 0.44    | 0.00    | 1.00    |
| R4WALKSA | 13661 | 0.29 | 0.46    | 0.00    | 1.00    |
| R5WALKSA | 15695 | 0.26 | 0.44    | 0.00    | 1.00    |
| S1WALKSA | 9918  | 0.22 | 0.41    | 0.00    | 1.00    |
| S2WALKSA | 8680  | 0.22 | 0.41    | 0.00    | 1.00    |
| S3WALKSA | 9831  | 0.24 | 0.43    | 0.00    | 1.00    |
| S4WALKSA | 9101  | 0.26 | 0.44    | 0.00    | 1.00    |
| S5WALKSA | 7047  | 0.28 | 0.45    | 0.00    | 1.00    |
| R1JOGA   | 11123 | 0.54 | 0.50    | 0.00    | 1.00    |
| R2JOGA   | 9827  | 0.56 | 0.50    | 0.00    | 1.00    |
| R3JOGA   | 12489 | 0.55 | 0.50    | 0.00    | 1.00    |
| R4JOGA   | 11677 | 0.58 | 0.49    | 0.00    | 1.00    |
| R5JOGA   | 14575 | 0.50 | 0.50    | 0.00    | 1.00    |
| S1JOGA   | 7896  | 0.51 | 0.50    | 0.00    | 1.00    |
| S2JOGA   | 6914  | 0.52 | 0.50    | 0.00    | 1.00    |
| S3JOGA   | 8570  | 0.51 | 0.50    | 0.00    | 1.00    |
| S4JOGA   | 7815  | 0.54 | 0.50    | 0.00    | 1.00    |
| S5JOGA   | 6535  | 0.54 | 0.50    | 0.00    | 1.00    |
| R1WALK1A | 13922 | 0.10 | 0.31    | 0.00    | 1.00    |
| R2WALK1A | 12428 | 0.11 | 0.31    | 0.00    | 1.00    |
| R3WALK1A | 14407 | 0.13 | 0.33    | 0.00    | 1.00    |
| R4WALK1A | 13737 | 0.14 | 0.35    | 0.00    | 1.00    |
| R5WALK1A | 15724 | 0.13 | 0.34    | 0.00    | 1.00    |
| S1WALK1A | 9847  | 0.09 | 0.28    | 0.00    | 1.00    |
| S2WALK1A | 8703  | 0.09 | 0.28    | 0.00    | 1.00    |
| S3WALK1A | 9850  | 0.11 | 0.31    | 0.00    | 1.00    |
| S4WALK1A | 9138  | 0.12 | 0.32    | 0.00    | 1.00    |
| S5WALK1A | 7052  | 0.14 | 0.34    | 0.00    | 1.00    |
| R1SITA   | 14045 | 0.18 | 0.38    | 0.00    | 1.00    |
| R2SITA   | 12474 | 0.16 | 0.36    | 0.00    | 1.00    |
| R3SITA   | 14395 | 0.19 | 0.40    | 0.00    | 1.00    |

|          |       |      |      |      |      |
|----------|-------|------|------|------|------|
| R4SITA   | 13763 | 0.21 | 0.41 | 0.00 | 1.00 |
| R5SITA   | 15741 | 0.19 | 0.40 | 0.00 | 1.00 |
| S1SITA   | 9924  | 0.16 | 0.37 | 0.00 | 1.00 |
| S2SITA   | 8716  | 0.15 | 0.35 | 0.00 | 1.00 |
| S3SITA   | 9831  | 0.18 | 0.39 | 0.00 | 1.00 |
| S4SITA   | 9145  | 0.20 | 0.40 | 0.00 | 1.00 |
| S5SITA   | 7060  | 0.20 | 0.40 | 0.00 | 1.00 |
| R1CHAIRA | 14069 | 0.27 | 0.44 | 0.00 | 1.00 |
| R2CHAIRA | 12481 | 0.24 | 0.43 | 0.00 | 1.00 |
| R3CHAIRA | 14428 | 0.30 | 0.46 | 0.00 | 1.00 |
| R4CHAIRA | 13779 | 0.34 | 0.47 | 0.00 | 1.00 |
| R5CHAIRA | 15740 | 0.32 | 0.47 | 0.00 | 1.00 |
| S1CHAIRA | 9941  | 0.25 | 0.43 | 0.00 | 1.00 |
| S2CHAIRA | 8724  | 0.22 | 0.41 | 0.00 | 1.00 |
| S3CHAIRA | 9850  | 0.28 | 0.45 | 0.00 | 1.00 |
| S4CHAIRA | 9157  | 0.33 | 0.47 | 0.00 | 1.00 |
| S5CHAIRA | 7059  | 0.33 | 0.47 | 0.00 | 1.00 |
| R1CLIMSA | 12488 | 0.43 | 0.49 | 0.00 | 1.00 |
| R2CLIMSA | 10986 | 0.41 | 0.49 | 0.00 | 1.00 |
| R3CLIMSA | 13259 | 0.44 | 0.50 | 0.00 | 1.00 |
| R4CLIMSA | 12740 | 0.47 | 0.50 | 0.00 | 1.00 |
| R5CLIMSA | 15188 | 0.42 | 0.49 | 0.00 | 1.00 |
| S1CLIMSA | 8811  | 0.39 | 0.49 | 0.00 | 1.00 |
| S2CLIMSA | 7740  | 0.37 | 0.48 | 0.00 | 1.00 |
| S3CLIMSA | 9091  | 0.40 | 0.49 | 0.00 | 1.00 |
| S4CLIMSA | 8560  | 0.43 | 0.50 | 0.00 | 1.00 |
| S5CLIMSA | 6795  | 0.44 | 0.50 | 0.00 | 1.00 |
| R1CLIM1A | 13567 | 0.20 | 0.40 | 0.00 | 1.00 |
| R2CLIM1A | 12082 | 0.20 | 0.40 | 0.00 | 1.00 |
| R3CLIM1A | 13775 | 0.24 | 0.43 | 0.00 | 1.00 |
| R4CLIM1A | 13260 | 0.26 | 0.44 | 0.00 | 1.00 |
| R5CLIM1A | 15523 | 0.24 | 0.42 | 0.00 | 1.00 |
| S1CLIM1A | 9613  | 0.17 | 0.38 | 0.00 | 1.00 |
| S2CLIM1A | 8479  | 0.17 | 0.37 | 0.00 | 1.00 |
| S3CLIM1A | 9433  | 0.21 | 0.41 | 0.00 | 1.00 |
| S4CLIM1A | 8878  | 0.22 | 0.42 | 0.00 | 1.00 |
| S5CLIM1A | 6962  | 0.25 | 0.43 | 0.00 | 1.00 |
| R1STOOPA | 14027 | 0.35 | 0.48 | 0.00 | 1.00 |
| R2STOOPA | 12426 | 0.33 | 0.47 | 0.00 | 1.00 |
| R3STOOPA | 14365 | 0.41 | 0.49 | 0.00 | 1.00 |
| R4STOOPA | 13695 | 0.45 | 0.50 | 0.00 | 1.00 |
| R5STOOPA | 15681 | 0.41 | 0.49 | 0.00 | 1.00 |
| S1STOOPA | 9917  | 0.32 | 0.47 | 0.00 | 1.00 |
| S2STOOPA | 8694  | 0.31 | 0.46 | 0.00 | 1.00 |
| S3STOOPA | 9825  | 0.38 | 0.48 | 0.00 | 1.00 |
| S4STOOPA | 9122  | 0.42 | 0.49 | 0.00 | 1.00 |
| S5STOOPA | 7034  | 0.44 | 0.50 | 0.00 | 1.00 |
| R1LIFTA  | 13943 | 0.19 | 0.39 | 0.00 | 1.00 |
| R2LIFTA  | 12343 | 0.18 | 0.39 | 0.00 | 1.00 |
| R3LIFTA  | 14230 | 0.24 | 0.43 | 0.00 | 1.00 |
| R4LIFTA  | 13474 | 0.27 | 0.44 | 0.00 | 1.00 |
| R5LIFTA  | 15611 | 0.25 | 0.43 | 0.00 | 1.00 |
| S1LIFTA  | 9887  | 0.15 | 0.36 | 0.00 | 1.00 |

|         |       |      |      |      |      |
|---------|-------|------|------|------|------|
| S2LIFTA | 8662  | 0.15 | 0.36 | 0.00 | 1.00 |
| S3LIFTA | 9761  | 0.20 | 0.40 | 0.00 | 1.00 |
| S4LIFTA | 9023  | 0.22 | 0.42 | 0.00 | 1.00 |
| S5LIFTA | 7010  | 0.24 | 0.43 | 0.00 | 1.00 |
| R1DIMEA | 14074 | 0.05 | 0.22 | 0.00 | 1.00 |
| R2DIMEA | 12489 | 0.06 | 0.23 | 0.00 | 1.00 |
| R3DIMEA | 14437 | 0.07 | 0.26 | 0.00 | 1.00 |
| R4DIMEA | 13787 | 0.07 | 0.26 | 0.00 | 1.00 |
| R5DIMEA | 15745 | 0.08 | 0.27 | 0.00 | 1.00 |
| S1DIMEA | 9951  | 0.04 | 0.21 | 0.00 | 1.00 |
| S2DIMEA | 8730  | 0.04 | 0.21 | 0.00 | 1.00 |
| S3DIMEA | 9860  | 0.06 | 0.24 | 0.00 | 1.00 |
| S4DIMEA | 9156  | 0.06 | 0.24 | 0.00 | 1.00 |
| S5DIMEA | 7061  | 0.09 | 0.28 | 0.00 | 1.00 |
| R1ARMSA | 14076 | 0.11 | 0.31 | 0.00 | 1.00 |
| R2ARMSA | 12494 | 0.10 | 0.30 | 0.00 | 1.00 |
| R3ARMSA | 14441 | 0.14 | 0.34 | 0.00 | 1.00 |
| R4ARMSA | 13794 | 0.15 | 0.36 | 0.00 | 1.00 |
| R5ARMSA | 15746 | 0.14 | 0.34 | 0.00 | 1.00 |
| S1ARMSA | 9951  | 0.10 | 0.30 | 0.00 | 1.00 |
| S2ARMSA | 8735  | 0.09 | 0.29 | 0.00 | 1.00 |
| S3ARMSA | 9863  | 0.12 | 0.33 | 0.00 | 1.00 |
| S4ARMSA | 9163  | 0.13 | 0.34 | 0.00 | 1.00 |
| S5ARMSA | 7059  | 0.14 | 0.35 | 0.00 | 1.00 |
| R1PUSHA | 13870 | 0.20 | 0.40 | 0.00 | 1.00 |
| R2PUSHA | 12287 | 0.19 | 0.39 | 0.00 | 1.00 |
| R3PUSHA | 14150 | 0.25 | 0.43 | 0.00 | 1.00 |
| R4PUSHA | 13473 | 0.27 | 0.44 | 0.00 | 1.00 |
| R5PUSHA | 15568 | 0.24 | 0.43 | 0.00 | 1.00 |
| S1PUSHA | 9844  | 0.17 | 0.38 | 0.00 | 1.00 |
| S2PUSHA | 8621  | 0.16 | 0.36 | 0.00 | 1.00 |
| S3PUSHA | 9709  | 0.21 | 0.41 | 0.00 | 1.00 |
| S4PUSHA | 9009  | 0.23 | 0.42 | 0.00 | 1.00 |
| S5PUSHA | 6986  | 0.25 | 0.43 | 0.00 | 1.00 |

Categorical Variable Codes

|                               |          |          |          |          |          |
|-------------------------------|----------|----------|----------|----------|----------|
| Value-----                    | R1WALKSA | R2WALKSA | R3WALKSA | R4WALKSA | R5WALKSA |
| .d:DK                         | 6        | 1        | 3        | 5        |          |
| .m:Missing                    | 38       | 25       |          | 40       | 17       |
| .p:Proxy interview, not asked | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     | 12       |          | 1        | 1        | 6        |
| .x:Doesn't do                 | 82       | 111      | 70       | 143      | 68       |
| 0.No                          | 10634    | 9382     | 10487    | 9638     | 11576    |
| 1.Yes                         | 3382     | 3007     | 3887     | 4023     | 4119     |
| Value-----                    | S1WALKSA | S2WALKSA | S3WALKSA | S4WALKSA | S5WALKSA |
| .d:DK                         | 5        | 1        | 1        | 5        |          |
| .m:Missing                    | 13       | 6        |          | 10       | 5        |
| .p:Proxy interview, not asked | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     | 6        |          |          |          | 4        |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do                 | 46       | 56       | 34       | 66       | 19       |
| 0.No                          | 7769     | 6811     | 7446     | 6722     | 5068     |
| 1.Yes                         | 2149     | 1869     | 2385     | 2379     | 1979     |
| Value-----                    | R1JOGA   | R2JOGA   | R3JOGA   | R4JOGA   | R5JOGA   |
| .d:DK                         | 114      | 52       | 46       | 17       | 21       |
| .m:Missing                    | 38       | 25       |          | 40       | 17       |

|                               |  |          |          |          |          |          |
|-------------------------------|--|----------|----------|----------|----------|----------|
| .p:Proxy interview, not asked |  | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 71       | 18       | 9        | 3        | 18       |
| .x:Doesn't do                 |  | 2808     | 2604     | 1904     | 2113     | 1155     |
| 0.No                          |  | 5102     | 4358     | 5631     | 4881     | 7215     |
| 1.Yes                         |  | 6021     | 5469     | 6858     | 6796     | 7360     |
| Value-----                    |  | S1JOGA   | S2JOGA   | S3JOGA   | S4JOGA   | S5JOGA   |
| .d:DK                         |  | 85       | 35       | 34       | 10       | 11       |
| .m:Missing                    |  | 13       | 6        |          | 10       | 5        |
| .p:Proxy interview, not asked |  | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     |  | 45       | 13       | 4        | 2        | 12       |
| .u:Unmar                      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do                 |  | 1949     | 1775     | 1258     | 1345     | 512      |
| 0.No                          |  | 3887     | 3340     | 4191     | 3588     | 2993     |
| 1.Yes                         |  | 4009     | 3574     | 4379     | 4227     | 3542     |
| Value-----                    |  | R1WALK1A | R2WALK1A | R3WALK1A | R4WALK1A | R5WALK1A |
| .d:DK                         |  | 26       |          | 3        | 5        | 1        |
| .m:Missing                    |  | 38       | 25       |          | 40       | 17       |
| .p:Proxy interview, not asked |  | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 91       | 1        | 2        | 1        | 7        |
| .x:Doesn't do                 |  | 77       | 72       | 36       | 67       | 37       |
| 0.No                          |  | 12476    | 11067    | 12559    | 11772    | 13695    |
| 1.Yes                         |  | 1446     | 1361     | 1848     | 1965     | 2029     |
| Value-----                    |  | S1WALK1A | S2WALK1A | S3WALK1A | S4WALK1A | S5WALK1A |
| .d:DK                         |  | 16       |          | 1        | 5        |          |
| .m:Missing                    |  | 13       | 6        |          | 10       | 5        |
| .p:Proxy interview, not asked |  | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     |  | 65       | 1        | 1        |          | 5        |
| .u:Unmar                      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do                 |  | 47       | 33       | 14       | 29       | 13       |
| 0.No                          |  | 8972     | 7929     | 8791     | 8049     | 6090     |
| 1.Yes                         |  | 875      | 774      | 1059     | 1089     | 962      |
| Value-----                    |  | R1SITA   | R2SITA   | R3SITA   | R4SITA   | R5SITA   |
| .d:DK                         |  | 7        |          | 2        | 8        | 1        |
| .m:Missing                    |  | 38       | 25       |          | 40       | 17       |
| .p:Proxy interview, not asked |  | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 15       |          | 1        | 1        | 5        |
| .x:Doesn't do                 |  | 49       | 27       | 50       | 38       | 22       |
| 0.No                          |  | 11560    | 10504    | 11594    | 10856    | 12677    |
| 1.Yes                         |  | 2485     | 1970     | 2801     | 2907     | 3064     |
| Value-----                    |  | S1SITA   | S2SITA   | S3SITA   | S4SITA   | S5SITA   |
| .d:DK                         |  | 4        |          | 2        | 6        | 1        |
| .m:Missing                    |  | 13       | 6        |          | 10       | 5        |
| .p:Proxy interview, not asked |  | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     |  | 13       |          |          |          | 3        |
| .u:Unmar                      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do                 |  | 34       | 21       | 33       | 21       | 6        |
| 0.No                          |  | 8318     | 7430     | 8036     | 7289     | 5652     |
| 1.Yes                         |  | 1606     | 1286     | 1795     | 1856     | 1408     |
| Value-----                    |  | R1CHAIRA | R2CHAIRA | R3CHAIRA | R4CHAIRA | R5CHAIRA |
| .d:DK                         |  | 7        | 2        | 1        | 6        |          |
| .m:Missing                    |  | 38       | 25       |          | 40       | 17       |
| .p:Proxy interview, not asked |  | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 14       |          | 1        | 1        | 7        |
| .x:Doesn't do                 |  | 26       | 18       | 18       | 24       | 22       |
| 0.No                          |  | 10272    | 9526     | 10089    | 9058     | 10747    |
| 1.Yes                         |  | 3797     | 2955     | 4339     | 4721     | 4993     |
| Value-----                    |  | S1CHAIRA | S2CHAIRA | S3CHAIRA | S4CHAIRA | S5CHAIRA |
| .d:DK                         |  | 5        | 1        | 1        | 5        |          |
| .m:Missing                    |  | 13       | 6        |          | 10       | 5        |
| .p:Proxy interview, not asked |  | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     |  | 11       |          |          |          | 5        |
| .u:Unmar                      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |

|                               |  |          |          |          |          |          |
|-------------------------------|--|----------|----------|----------|----------|----------|
| .x:Doesn't do                 |  | 18       | 12       | 15       | 10       | 6        |
| 0.No                          |  | 7459     | 6825     | 7089     | 6159     | 4756     |
| 1.Yes                         |  | 2482     | 1899     | 2761     | 2998     | 2303     |
| Value-----                    |  | R1CLIMSA | R2CLIMSA | R3CLIMSA | R4CLIMSA | R5CLIMSA |
| .d:DK                         |  | 115      | 61       | 30       | 15       | 33       |
| .m:Missing                    |  | 38       | 25       |          | 40       | 17       |
| .p:Proxy interview, not asked |  | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 86       | 3        | 2        | 1        | 40       |
| .x:Doesn't do                 |  | 1427     | 1451     | 1157     | 1054     | 508      |
| 0.No                          |  | 7158     | 6523     | 7491     | 6762     | 8864     |
| 1.Yes                         |  | 5330     | 4463     | 5768     | 5978     | 6324     |
| Value-----                    |  | S1CLIMSA | S2CLIMSA | S3CLIMSA | S4CLIMSA | S5CLIMSA |
| .d:DK                         |  | 85       | 36       | 20       | 13       | 16       |
| .m:Missing                    |  | 13       | 6        |          | 10       | 5        |
| .p:Proxy interview, not asked |  | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     |  | 62       | 3        | 1        |          | 25       |
| .u:Unmar                      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do                 |  | 1017     | 958      | 754      | 599      | 234      |
| 0.No                          |  | 5346     | 4842     | 5465     | 4875     | 3816     |
| 1.Yes                         |  | 3465     | 2898     | 3626     | 3685     | 2979     |
| Value-----                    |  | R1CLIM1A | R2CLIM1A | R3CLIM1A | R4CLIM1A | R5CLIM1A |
| .d:DK                         |  | 58       | 19       | 20       | 10       | 15       |
| .m:Missing                    |  | 38       | 25       |          | 40       | 17       |
| .p:Proxy interview, not asked |  | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 85       | 5        | 2        | 2        | 19       |
| .x:Doesn't do                 |  | 406      | 395      | 651      | 538      | 212      |
| 0.No                          |  | 10848    | 9710     | 10474    | 9831     | 11871    |
| 1.Yes                         |  | 2719     | 2372     | 3301     | 3429     | 3652     |
| Value-----                    |  | S1CLIM1A | S2CLIM1A | S3CLIM1A | S4CLIM1A | S5CLIM1A |
| .d:DK                         |  | 46       | 10       | 12       | 9        | 9        |
| .m:Missing                    |  | 13       | 6        |          | 10       | 5        |
| .p:Proxy interview, not asked |  | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     |  | 58       | 4        | 1        |          | 8        |
| .u:Unmar                      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do                 |  | 258      | 244      | 420      | 285      | 91       |
| 0.No                          |  | 7947     | 7053     | 7474     | 6900     | 5255     |
| 1.Yes                         |  | 1666     | 1426     | 1959     | 1978     | 1707     |
| Value-----                    |  | R1STOOPA | R2STOOPA | R3STOOPA | R4STOOPA | R5STOOPA |
| .d:DK                         |  | 9        | 4        | 2        | 5        | 1        |
| .m:Missing                    |  | 38       | 25       |          | 40       | 17       |
| .p:Proxy interview, not asked |  | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 12       | 1        | 1        | 2        | 8        |
| .x:Doesn't do                 |  | 68       | 70       | 80       | 108      | 79       |
| 0.No                          |  | 9071     | 8292     | 8446     | 7504     | 9238     |
| 1.Yes                         |  | 4956     | 4134     | 5919     | 6191     | 6443     |
| Value-----                    |  | S1STOOPA | S2STOOPA | S3STOOPA | S4STOOPA | S5STOOPA |
| .d:DK                         |  | 7        | 2        | 1        | 5        | 1        |
| .m:Missing                    |  | 13       | 6        |          | 10       | 5        |
| .p:Proxy interview, not asked |  | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     |  | 10       | 1        |          |          | 5        |
| .u:Unmar                      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |
| .x:Doesn't do                 |  | 41       | 40       | 40       | 45       | 30       |
| 0.No                          |  | 6704     | 6039     | 6114     | 5264     | 3966     |
| 1.Yes                         |  | 3213     | 2655     | 3711     | 3858     | 3068     |
| Value-----                    |  | R1LIFTA  | R2LIFTA  | R3LIFTA  | R4LIFTA  | R5LIFTA  |
| .d:DK                         |  | 6        | 7        | 3        | 6        | 1        |
| .m:Missing                    |  | 38       | 25       |          | 40       | 17       |
| .p:Proxy interview, not asked |  | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 8        |          | 3        | 1        | 8        |
| .x:Doesn't do                 |  | 159      | 151      | 212      | 329      | 149      |
| 0.No                          |  | 11355    | 10094    | 10837    | 9855     | 11772    |
| 1.Yes                         |  | 2588     | 2249     | 3393     | 3619     | 3839     |

|                               |         |         |         |         |         |
|-------------------------------|---------|---------|---------|---------|---------|
| Value-----                    | S1LIFTA | S2LIFTA | S3LIFTA | S4LIFTA | S5LIFTA |
| .d:DK                         | 3       | 3       | 2       | 5       |         |
| .m:Missing                    | 13      | 6       |         | 10      | 5       |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 5       |         |         |         | 5       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| .x:Doesn't do                 | 80      | 72      | 103     | 144     | 55      |
| 0.No                          | 8378    | 7364    | 7803    | 7018    | 5295    |
| 1.Yes                         | 1509    | 1298    | 1958    | 2005    | 1715    |
| Value-----                    | R1DIMEA | R2DIMEA | R3DIMEA | R4DIMEA | R5DIMEA |
| .d:DK                         | 9       |         | 2       | 7       |         |
| .m:Missing                    | 38      | 25      |         | 40      | 17      |
| .p:Proxy interview, not asked | 1032    | 1178    | 1275    | 929     | 1328    |
| .r:Refuse                     | 16      |         | 1       | 1       | 10      |
| .x:Doesn't do                 | 17      | 12      | 8       | 15      | 14      |
| 0.No                          | 13324   | 11785   | 13391   | 12796   | 14469   |
| 1.Yes                         | 750     | 704     | 1046    | 991     | 1276    |
| Value-----                    | S1DIMEA | S2DIMEA | S3DIMEA | S4DIMEA | S5DIMEA |
| .d:DK                         | 5       |         | 2       | 7       |         |
| .m:Missing                    | 13      | 6       |         | 10      | 5       |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 10      |         |         |         | 6       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| .x:Doesn't do                 | 9       | 7       | 4       | 9       | 3       |
| 0.No                          | 9513    | 8341    | 9245    | 8579    | 6437    |
| 1.Yes                         | 438     | 389     | 615     | 577     | 624     |
| Value-----                    | R1ARMSA | R2ARMSA | R3ARMSA | R4ARMSA | R5ARMSA |
| .d:DK                         | 7       |         | 1       | 5       |         |
| .m:Missing                    | 38      | 25      |         | 40      | 17      |
| .p:Proxy interview, not asked | 1032    | 1178    | 1275    | 929     | 1328    |
| .r:Refuse                     | 12      | 1       | 1       | 1       | 8       |
| .x:Doesn't do                 | 21      | 6       | 5       | 10      | 15      |
| 0.No                          | 12539   | 11238   | 12488   | 11721   | 13603   |
| 1.Yes                         | 1537    | 1256    | 1953    | 2073    | 2143    |
| Value-----                    | S1ARMSA | S2ARMSA | S3ARMSA | S4ARMSA | S5ARMSA |
| .d:DK                         | 4       |         | 1       | 5       |         |
| .m:Missing                    | 13      | 6       |         | 10      | 5       |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 10      | 1       |         |         | 5       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| .x:Doesn't do                 | 10      | 1       | 2       | 4       | 6       |
| 0.No                          | 8990    | 7946    | 8672    | 7942    | 6071    |
| 1.Yes                         | 961     | 789     | 1191    | 1221    | 988     |
| Value-----                    | R1PUSHA | R2PUSHA | R3PUSHA | R4PUSHA | R5PUSHA |
| .d:DK                         | 7       | 2       | 2       | 5       | 2       |
| .m:Missing                    | 38      | 25      |         | 40      | 17      |
| .p:Proxy interview, not asked | 1032    | 1178    | 1275    | 929     | 1328    |
| .r:Refuse                     | 11      |         | 1       | 2       | 10      |
| .x:Doesn't do                 | 228     | 212     | 295     | 330     | 189     |
| 0.No                          | 11096   | 10000   | 10663   | 9838    | 11790   |
| 1.Yes                         | 2774    | 2287    | 3487    | 3635    | 3778    |
| Value-----                    | S1PUSHA | S2PUSHA | S3PUSHA | S4PUSHA | S5PUSHA |
| .d:DK                         | 4       |         | 1       | 5       | 1       |
| .m:Missing                    | 13      | 6       |         | 10      | 5       |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 8       |         |         | 1       | 6       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| .x:Doesn't do                 | 119     | 116     | 156     | 157     | 77      |
| 0.No                          | 8175    | 7261    | 7641    | 6926    | 5231    |
| 1.Yes                         | 1669    | 1360    | 2068    | 2083    | 1755    |

## How Constructed

These variables indicate difficulty with functional limitations other than ADLs and IADLs. The other functional limitations include walking several blocks (RwWALKSA), running and jogging one kilometer (RwJOGA), walking one block (RwWALK1A), sitting for about 2 hours (RwSITA), getting up from a chair after sitting for long periods (RwCHAIRA), climbing several flights of stairs without resting (RwCLIMSA), climbing one flight of stairs without resting (RwCLIM1A), stooping/ kneeling/or crouching (RwSTOOPA), reaching arms above shoulder level (RwARMSA), pushing or pulling large objects (RwPUSHA), lifting or carrying weights over 5 kilos (RwLIFTA), and picking up a small coin (one peso) from the table (RwDIMEA).

A code of 0 indicates that the respondent did not report any problems with the activity. A code of 1 indicates that the respondent reported some difficulty with the activity or if they reported "can't do". When respondents indicated "don't know" or refused to answer, the RwWALKSA, RwJOGA, RwWALK1A, RwSITA, RwCHAIRA, RwCLIMSA, RwCLIM1A, RwSTOOPA, RwARMSA, RwPUSHA, RwLIFTA, and RwDIMEA variables are assigned special missing values .d or .r, respectively. Also, if the respondent reported "don't do" they are set to special missing value .x, missing answers are set to special missing .m, and they are set to plain missing (.) for respondents who did not respond to the current wave.

SwWALKSA, SwJOGA, SwWALK1A, SwSITA, SwCHAIRA, SwCLIMSA, SwCLIM1A, SwSTOOPA, SwARMSA, SwPUSHA, SwLIFTA, and SwDIMEA indicate whether the respondent's spouse reported any difficulty with such activities and are taken directly from the spouse's RwWALKSA, RwJOGA, RwWALK1A, RwSITA, RwCHAIRA, RwCLIMSA, RwCLIM1A, RwSTOOPA, RwARMSA, RwPUSHA, RwLIFTA, and RwDIMEA variables, respectively. In addition to the special missing codes used in the respondent variables, the spouse variables employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

In the HRS introductory questions, respondents are asked whether they have difficulty jogging one mile. However, in the MHAS they ask if the respondent has any difficulty running or jogging one kilometer.

## MHAS Variables Used

### Wave 1:

|     |                   |
|-----|-------------------|
| H1  | long walk         |
| H10 | pulling           |
| H11 | picking up        |
| H12 | picking up a coin |
| H2  | running           |
| H3  | short walk        |
| H4  | sitting 2 hours   |
| H5  | getting up        |
| H6  | long climbing     |
| H7  | short climbing    |
| H8  | bending           |
| H9  | extending arms    |

### Wave 2:

|     |   |
|-----|---|
| H1  | health problems-trouble walking blocks          |
| H10 | health problems-trouble pushing or pulling      |
| H11 | health problems-trouble carrying objects        |
| H12 | health problems-trouble picking up a coin       |
| H2  | health problems-trouble running                 |
| H3  | health problems-trouble walking a block         |
| H4  | health problems-trouble staying seated          |
| H5  | health problems-trouble getting up from chair   |
| H6  | health problems-trouble with flights of stairs  |
| H7  | health problems-trouble with 1 flight of stairs |
| H8  | health problems-trouble sitting up              |
| H9  | health problems-trouble lifting arms            |

## Wave 3:

|        |   |
|--------|---|
| H10_12 | Because of health problem, difficulty pushing or pullin |
| H11_12 | Because of health problem, difficulty carrying objects  |
| H12_12 | Because of health problem, difficulty picking up a coin |
| H1_12  | Because of health problem, difficulty walking blocks    |
| H2_12  | Because of health problem, difficulty running           |
| H3_12  | Because of health problem, difficulty walking a block   |
| H4_12  | Because of health problem, difficulty staying seated    |
| H5_12  | Because of health problem, difficulty getting up from c |
| H6_12  | Because of health problem, difficulty with flights of s |
| H7_12  | Because of health problem, difficulty with 1 flight of  |
| H8_12  | Because of health problem, difficulty sitting up        |
| H9_12  | Because of health problem, difficulty lifting arms      |

## Wave 4:

|        |   |
|--------|---|
| H10_15 | Because of health problem, does respondent have difficu |
| H11_15 | Because of health problem, does respondent have difficu |
| H12_15 | Because of health problem, does respondent have difficu |
| H1_15  | Because of health problem, does respondent have difficu |
| H2_15  | Because of health problem, does respondent have difficu |
| H3_15  | Because of health problem, does respondent have difficu |
| H4_15  | Because of health problem, does respondent have difficu |
| H5_15  | Because of health problem, does respondent have difficu |
| H6_15  | Because of health problem, does respondent have difficu |
| H7_15  | Because of health problem, does respondent have difficu |
| H8_15  | Because of health problem, does respondent have difficu |
| H9_15  | Because of health problem, does respondent have difficu |

## Wave 5:

|        |   |
|--------|---|
| H10_18 | Because of health problem, does R have difficulty pushi |
| H11_18 | Due to health problem, difficult for R to lift/carry ob |
| H12_18 | Due to health problem, does R have difficulty picking u |
| H1_18  | Because of health problem, does R have difficulty walki |
| H2_18  | Because of health problem, does R have difficulty runni |
| H3_18  | Because of health problem, does R have difficulty walki |
| H4_18  | Because of health problem, does R have difficulty sitti |
| H5_18  | Due to health problem, difficult for R to get up from c |
| H6_18  | Due to health problem, hard for R to climb several flig |
| H7_18  | Due to health problem, difficult for R to climb 1 fligh |
| H8_18  | Due to health problem, does R have difficulty stooping, |
| H9_18  | Due to health problem, difficult for R to reach/extend  |



|  |
|--|
| <b>ADL Summary: Sum ADLs Where Respondent Reports Any Difficulty</b> |
|--|

| Wave | Variable    | Label  | Type  |
|------|-------------|--|-------|
| 1    | R1ADLTOT_M  | r1adltot_m: w1 R Some difficulty-Total ADLs 0-6              | Cont  |
| 2    | R2ADLTOT_M  | r2adltot_m: w2 R Some difficulty-Total ADLs 0-6              | Cont  |
| 3    | R3ADLTOT_M  | r3adltot_m: w3 R Some difficulty-Total ADLs 0-6              | Cont  |
| 4    | R4ADLTOT_M  | r4adltot_m: w4 R Some difficulty-Total ADLs 0-6              | Cont  |
| 5    | R5ADLTOT_M  | r5adltot_m: w5 R Some difficulty-Total ADLs 0-6              | Cont  |
|      |             |  |       |
| 1    | S1ADLTOT_M  | s1adltot_m: w1 S Some difficulty-Total ADLs 0-6              | Cont  |
| 2    | S2ADLTOT_M  | s2adltot_m: w2 S Some difficulty-Total ADLs 0-6              | Cont  |
| 3    | S3ADLTOT_M  | s3adltot_m: w3 S Some difficulty-Total ADLs 0-6              | Cont  |
| 4    | S4ADLTOT_M  | s4adltot_m: w4 S Some difficulty-Total ADLs 0-6              | Cont  |
| 5    | S5ADLTOT_M  | s5adltot_m: w5 S Some difficulty-Total ADLs 0-6              | Cont  |
|      |             |  |       |
| 1    | R1ADLTOTM_M | r1adltotm_m: w1 R Some difficulty-Missings in Total ADLs 0-6 | Cont  |
| 2    | R2ADLTOTM_M | r2adltotm_m: w2 R Some difficulty-Missings in Total ADLs 0-6 | Cont  |
| 3    | R3ADLTOTM_M | r3adltotm_m: w3 R Some difficulty-Missings in Total ADLs 0-6 | Cont  |
| 4    | R4ADLTOTM_M | r4adltotm_m: w4 R Some difficulty-Missings in Total ADLs 0-6 | Cont  |
| 5    | R5ADLTOTM_M | r5adltotm_m: w5 R Some difficulty-Missings in Total ADLs 0-6 | Cont  |
|      |             |  |       |
| 1    | S1ADLTOTM_M | s1adltotm_m: w1 S Some difficulty-Missings in Total ADLs 0-6 | Cont  |
| 2    | S2ADLTOTM_M | s2adltotm_m: w2 S Some difficulty-Missings in Total ADLs 0-6 | Cont  |
| 3    | S3ADLTOTM_M | s3adltotm_m: w3 S Some difficulty-Missings in Total ADLs 0-6 | Cont  |
| 4    | S4ADLTOTM_M | s4adltotm_m: w4 S Some difficulty-Missings in Total ADLs 0-6 | Cont  |
| 5    | S5ADLTOTM_M | s5adltotm_m: w5 S Some difficulty-Missings in Total ADLs 0-6 | Cont  |
|      |             |  |       |
| 1    | R1ADLTOTA_M | r1adltota_m: w1 R Any difficulty ADLs 0-6                    | Categ |
| 2    | R2ADLTOTA_M | r2adltota_m: w2 R Any difficulty ADLs 0-6                    | Categ |
| 3    | R3ADLTOTA_M | r3adltota_m: w3 R Any difficulty ADLs 0-6                    | Categ |
| 4    | R4ADLTOTA_M | r4adltota_m: w4 R Any difficulty ADLs 0-6                    | Categ |
| 5    | R5ADLTOTA_M | r5adltota_m: w5 R Any difficulty ADLs 0-6                    | Categ |
|      |             |  |       |
| 1    | S1ADLTOTA_M | s1adltota_m: w1 S Any difficulty ADLs 0-6                    | Categ |
| 2    | S2ADLTOTA_M | s2adltota_m: w2 S Any difficulty ADLs 0-6                    | Categ |
| 3    | S3ADLTOTA_M | s3adltota_m: w3 S Any difficulty ADLs 0-6                    | Categ |
| 4    | S4ADLTOTA_M | s4adltota_m: w4 S Any difficulty ADLs 0-6                    | Categ |
| 5    | S5ADLTOTA_M | s5adltota_m: w5 S Any difficulty ADLs 0-6                    | Categ |
|      |             |  |       |
| 1    | R1ADLA      | r1adla: w1 R Some difficulty-ADLs 0-5                        | Cont  |
| 2    | R2ADLA      | r2adla: w2 R Some difficulty-ADLs 0-5                        | Cont  |
| 3    | R3ADLA      | r3adla: w3 R Some difficulty-ADLs 0-5                        | Cont  |
| 4    | R4ADLA      | r4adla: w4 R Some difficulty-ADLs 0-5                        | Cont  |
| 5    | R5ADLA      | r5adla: w5 R Some difficulty-ADLs 0-5                        | Cont  |
|      |             |  |       |
| 1    | S1ADLA      | s1adla: w1 S Some difficulty-ADLs 0-5                        | Cont  |
| 2    | S2ADLA      | s2adla: w2 S Some difficulty-ADLs 0-5                        | Cont  |
| 3    | S3ADLA      | s3adla: w3 S Some difficulty-ADLs 0-5                        | Cont  |
| 4    | S4ADLA      | s4adla: w4 S Some difficulty-ADLs 0-5                        | Cont  |
| 5    | S5ADLA      | s5adla: w5 S Some difficulty-ADLs 0-5                        | Cont  |
|      |             |  |       |
| 1    | R1ADLAM     | r1adlam: w1 R Some difficulty-Missings in ADLs 0-5 Score     | Cont  |
| 2    | R2ADLAM     | r2adlam: w2 R Some difficulty-Missings in ADLs 0-5 Score     | Cont  |
| 3    | R3ADLAM     | r3adlam: w3 R Some difficulty-Missings in ADLs 0-5 Score     | Cont  |
| 4    | R4ADLAM     | r4adlam: w4 R Some difficulty-Missings in ADLs 0-5 Score     | Cont  |
| 5    | R5ADLAM     | r5adlam: w5 R Some difficulty-Missings in ADLs 0-5 Score     | Cont  |
|      |             |  |       |
| 1    | S1ADLAM     | s1adlam: w1 S Some difficulty-Missings in ADLs 0-5 Score     | Cont  |
| 2    | S2ADLAM     | s2adlam: w2 S Some difficulty-Missings in ADLs 0-5 Score     | Cont  |
| 3    | S3ADLAM     | s3adlam: w3 S Some difficulty-Missings in ADLs 0-5 Score     | Cont  |
| 4    | S4ADLAM     | s4adlam: w4 S Some difficulty-Missings in ADLs 0-5 Score     | Cont  |
| 5    | S5ADLAM     | s5adlam: w5 S Some difficulty-Missings in ADLs 0-5 Score     | Cont  |

|   |            |   |       |
|---|------------|---|-------|
| 1 | R1ADLAA    | r1adlaa: w1 R Any difficulty ADLs 0-5                       | Categ |
| 2 | R2ADLAA    | r2adlaa: w2 R Any difficulty ADLs 0-5                       | Categ |
| 3 | R3ADLAA    | r3adlaa: w3 R Any difficulty ADLs 0-5                       | Categ |
| 4 | R4ADLAA    | r4adlaa: w4 R Any difficulty ADLs 0-5                       | Categ |
| 5 | R5ADLAA    | r5adlaa: w5 R Any difficulty ADLs 0-5                       | Categ |
| 1 | S1ADLAA    | s1adlaa: w1 S Any difficulty ADLs 0-5                       | Categ |
| 2 | S2ADLAA    | s2adlaa: w2 S Any difficulty ADLs 0-5                       | Categ |
| 3 | S3ADLAA    | s3adlaa: w3 S Any difficulty ADLs 0-5                       | Categ |
| 4 | S4ADLAA    | s4adlaa: w4 S Any difficulty ADLs 0-5                       | Categ |
| 5 | S5ADLAA    | s5adlaa: w5 S Any difficulty ADLs 0-5                       | Categ |
| 1 | R1ADLFIVE  | r1adlfive: w1 R Some difficulty-ADLs 0-5 Alternate          | Cont  |
| 2 | R2ADLFIVE  | r2adlfive: w2 R Some difficulty-ADLs 0-5 Alternate          | Cont  |
| 3 | R3ADLFIVE  | r3adlfive: w3 R Some difficulty-ADLs 0-5 Alternate          | Cont  |
| 4 | R4ADLFIVE  | r4adlfive: w4 R Some difficulty-ADLs 0-5 Alternate          | Cont  |
| 5 | R5ADLFIVE  | r5adlfive: w5 R Some difficulty-ADLs 0-5 Alternate          | Cont  |
| 1 | S1ADLFIVE  | s1adlfive: w1 S Some difficulty-ADLs 0-5 Alternate          | Cont  |
| 2 | S2ADLFIVE  | s2adlfive: w2 S Some difficulty-ADLs 0-5 Alternate          | Cont  |
| 3 | S3ADLFIVE  | s3adlfive: w3 S Some difficulty-ADLs 0-5 Alternate          | Cont  |
| 4 | S4ADLFIVE  | s4adlfive: w4 S Some difficulty-ADLs 0-5 Alternate          | Cont  |
| 5 | S5ADLFIVE  | s5adlfive: w5 S Some difficulty-ADLs 0-5 Alternate          | Cont  |
| 1 | R1ADLFIVEM | r1adlfivem: w1 R Some difficulty-Missings in ADLs 0-5 Score | Cont  |
| 2 | R2ADLFIVEM | r2adlfivem: w2 R Some difficulty-Missings in ADLs 0-5 Score | Cont  |
| 3 | R3ADLFIVEM | r3adlfivem: w3 R Some difficulty-Missings in ADLs 0-5 Score | Cont  |
| 4 | R4ADLFIVEM | r4adlfivem: w4 R Some difficulty-Missings in ADLs 0-5 Score | Cont  |
| 5 | R5ADLFIVEM | r5adlfivem: w5 R Some difficulty-Missings in ADLs 0-5 Score | Cont  |
| 1 | S1ADLFIVEM | s1adlfivem: w1 S Some difficulty-Missings in ADLs 0-5 Score | Cont  |
| 2 | S2ADLFIVEM | s2adlfivem: w2 S Some difficulty-Missings in ADLs 0-5 Score | Cont  |
| 3 | S3ADLFIVEM | s3adlfivem: w3 S Some difficulty-Missings in ADLs 0-5 Score | Cont  |
| 4 | S4ADLFIVEM | s4adlfivem: w4 S Some difficulty-Missings in ADLs 0-5 Score | Cont  |
| 5 | S5ADLFIVEM | s5adlfivem: w5 S Some difficulty-Missings in ADLs 0-5 Score | Cont  |
| 1 | R1ADLFIVEA | r1adlfivea: w1 R Any difficulty ADLs 0-5 Alternate          | Categ |
| 2 | R2ADLFIVEA | r2adlfivea: w2 R Any difficulty ADLs 0-5 Alternate          | Categ |
| 3 | R3ADLFIVEA | r3adlfivea: w3 R Any difficulty ADLs 0-5 Alternate          | Categ |
| 4 | R4ADLFIVEA | r4adlfivea: w4 R Any difficulty ADLs 0-5 Alternate          | Categ |
| 5 | R5ADLFIVEA | r5adlfivea: w5 R Any difficulty ADLs 0-5 Alternate          | Categ |
| 1 | S1ADLFIVEA | s1adlfivea: w1 S Any difficulty ADLs 0-5 Alternate          | Categ |
| 2 | S2ADLFIVEA | s2adlfivea: w2 S Any difficulty ADLs 0-5 Alternate          | Categ |
| 3 | S3ADLFIVEA | s3adlfivea: w3 S Any difficulty ADLs 0-5 Alternate          | Categ |
| 4 | S4ADLFIVEA | s4adlfivea: w4 S Any difficulty ADLs 0-5 Alternate          | Categ |
| 5 | S5ADLFIVEA | s5adlfivea: w5 S Any difficulty ADLs 0-5 Alternate          | Categ |
| 1 | R1ADLA_M   | r1adla_m: w1 R Some difficulty-ADLs 0-4                     | Cont  |
| 2 | R2ADLA_M   | r2adla_m: w2 R Some difficulty-ADLs 0-4                     | Cont  |
| 3 | R3ADLA_M   | r3adla_m: w3 R Some difficulty-ADLs 0-4                     | Cont  |
| 4 | R4ADLA_M   | r4adla_m: w4 R Some difficulty-ADLs 0-4                     | Cont  |
| 5 | R5ADLA_M   | r5adla_m: w5 R Some difficulty-ADLs 0-4                     | Cont  |
| 1 | S1ADLA_M   | s1adla_m: w1 S Some difficulty-ADLs 0-4                     | Cont  |
| 2 | S2ADLA_M   | s2adla_m: w2 S Some difficulty-ADLs 0-4                     | Cont  |
| 3 | S3ADLA_M   | s3adla_m: w3 S Some difficulty-ADLs 0-4                     | Cont  |
| 4 | S4ADLA_M   | s4adla_m: w4 S Some difficulty-ADLs 0-4                     | Cont  |
| 5 | S5ADLA_M   | s5adla_m: w5 S Some difficulty-ADLs 0-4                     | Cont  |
| 1 | R1ADLAM_M  | r1adlam_m: w1 R Some difficulty-Missings in ADLs 0-4 Score  | Cont  |
| 2 | R2ADLAM_M  | r2adlam_m: w2 R Some difficulty-Missings in ADLs 0-4 Score  | Cont  |
| 3 | R3ADLAM_M  | r3adlam_m: w3 R Some difficulty-Missings in ADLs 0-4 Score  | Cont  |

|   |           |               |   |  |       |       |
|---|-----------|---------------|---|--|-------|-------|
| 4 | R4ADLAM_M | r4adlam_m: w4 | R | Some difficulty-Missings in ADLs 0-4       | Score | Cont  |
| 5 | R5ADLAM_M | r5adlam_m: w5 | R | Some difficulty-Missings in ADLs 0-4       | Score | Cont  |
| 1 | S1ADLAM_M | s1adlam_m: w1 | S | Some difficulty-Missings in ADLs 0-4       | Score | Cont  |
| 2 | S2ADLAM_M | s2adlam_m: w2 | S | Some difficulty-Missings in ADLs 0-4       | Score | Cont  |
| 3 | S3ADLAM_M | s3adlam_m: w3 | S | Some difficulty-Missings in ADLs 0-4       | Score | Cont  |
| 4 | S4ADLAM_M | s4adlam_m: w4 | S | Some difficulty-Missings in ADLs 0-4       | Score | Cont  |
| 5 | S5ADLAM_M | s5adlam_m: w5 | S | Some difficulty-Missings in ADLs 0-4       | Score | Cont  |
| 1 | R1ADLAA_M | rladlaa_m: w1 | R | Any difficulty ADLs 0-4                    |       | Categ |
| 2 | R2ADLAA_M | r2adlaa_m: w2 | R | Any difficulty ADLs 0-4                    |       | Categ |
| 3 | R3ADLAA_M | r3adlaa_m: w3 | R | Any difficulty ADLs 0-4                    |       | Categ |
| 4 | R4ADLAA_M | r4adlaa_m: w4 | R | Any difficulty ADLs 0-4                    |       | Categ |
| 5 | R5ADLAA_M | r5adlaa_m: w5 | R | Any difficulty ADLs 0-4                    |       | Categ |
| 1 | S1ADLAA_M | s1adlaa_m: w1 | S | Any difficulty ADLs 0-4                    |       | Categ |
| 2 | S2ADLAA_M | s2adlaa_m: w2 | S | Any difficulty ADLs 0-4                    |       | Categ |
| 3 | S3ADLAA_M | s3adlaa_m: w3 | S | Any difficulty ADLs 0-4                    |       | Categ |
| 4 | S4ADLAA_M | s4adlaa_m: w4 | S | Any difficulty ADLs 0-4                    |       | Categ |
| 5 | S5ADLAA_M | s5adlaa_m: w5 | S | Any difficulty ADLs 0-4                    |       | Categ |
| 1 | R1ADLWA   | rladlwa: w1   | R | Some difficulty-ADLs: Wallace 0-3          |       | Cont  |
| 2 | R2ADLWA   | r2adlwa: w2   | R | Some difficulty-ADLs: Wallace 0-3          |       | Cont  |
| 3 | R3ADLWA   | r3adlwa: w3   | R | Some difficulty-ADLs: Wallace 0-3          |       | Cont  |
| 4 | R4ADLWA   | r4adlwa: w4   | R | Some difficulty-ADLs: Wallace 0-3          |       | Cont  |
| 5 | R5ADLWA   | r5adlwa: w5   | R | Some difficulty-ADLs: Wallace 0-3          |       | Cont  |
| 1 | S1ADLWA   | s1adlwa: w1   | S | Some difficulty-ADLs: Wallace 0-3          |       | Cont  |
| 2 | S2ADLWA   | s2adlwa: w2   | S | Some difficulty-ADLs: Wallace 0-3          |       | Cont  |
| 3 | S3ADLWA   | s3adlwa: w3   | S | Some difficulty-ADLs: Wallace 0-3          |       | Cont  |
| 4 | S4ADLWA   | s4adlwa: w4   | S | Some difficulty-ADLs: Wallace 0-3          |       | Cont  |
| 5 | S5ADLWA   | s5adlwa: w5   | S | Some difficulty-ADLs: Wallace 0-3          |       | Cont  |
| 1 | R1ADLWAM  | rladlwam: w1  | R | Some difficulty-Missings Wallace Score 0-3 |       | Cont  |
| 2 | R2ADLWAM  | r2adlwam: w2  | R | Some difficulty-Missings Wallace Score 0-3 |       | Cont  |
| 3 | R3ADLWAM  | r3adlwam: w3  | R | Some difficulty-Missings Wallace Score 0-3 |       | Cont  |
| 4 | R4ADLWAM  | r4adlwam: w4  | R | Some difficulty-Missings Wallace Score 0-3 |       | Cont  |
| 5 | R5ADLWAM  | r5adlwam: w5  | R | Some difficulty-Missings Wallace Score 0-3 |       | Cont  |
| 1 | S1ADLWAM  | s1adlwam: w1  | S | Some difficulty-Missings Wallace Score 0-3 |       | Cont  |
| 2 | S2ADLWAM  | s2adlwam: w2  | S | Some difficulty-Missings Wallace Score 0-3 |       | Cont  |
| 3 | S3ADLWAM  | s3adlwam: w3  | S | Some difficulty-Missings Wallace Score 0-3 |       | Cont  |
| 4 | S4ADLWAM  | s4adlwam: w4  | S | Some difficulty-Missings Wallace Score 0-3 |       | Cont  |
| 5 | S5ADLWAM  | s5adlwam: w5  | S | Some difficulty-Missings Wallace Score 0-3 |       | Cont  |
| 1 | R1ADLWAA  | rladlwaa: w1  | R | Any difficulty ADLs 0-3                    |       | Categ |
| 2 | R2ADLWAA  | r2adlwaa: w2  | R | Any difficulty ADLs 0-3                    |       | Categ |
| 3 | R3ADLWAA  | r3adlwaa: w3  | R | Any difficulty ADLs 0-3                    |       | Categ |
| 4 | R4ADLWAA  | r4adlwaa: w4  | R | Any difficulty ADLs 0-3                    |       | Categ |
| 5 | R5ADLWAA  | r5adlwaa: w5  | R | Any difficulty ADLs 0-3                    |       | Categ |
| 1 | S1ADLWAA  | s1adlwaa: w1  | S | Any difficulty ADLs 0-3                    |       | Categ |
| 2 | S2ADLWAA  | s2adlwaa: w2  | S | Any difficulty ADLs 0-3                    |       | Categ |
| 3 | S3ADLWAA  | s3adlwaa: w3  | S | Any difficulty ADLs 0-3                    |       | Categ |
| 4 | S4ADLWAA  | s4adlwaa: w4  | S | Any difficulty ADLs 0-3                    |       | Categ |
| 5 | S5ADLWAA  | s5adlwaa: w5  | S | Any difficulty ADLs 0-3                    |       | Categ |

## Descriptive Statistics

| Variable   | N     | Mean | Std Dev | Minimum | Maximum |
|------------|-------|------|---------|---------|---------|
| R1ADLTOT_M | 14113 | 0.23 | 0.84    | 0.00    | 6.00    |
| R2ADLTOT_M | 12501 | 0.22 | 0.82    | 0.00    | 6.00    |
| R3ADLTOT_M | 14446 | 0.32 | 0.90    | 0.00    | 6.00    |

|             |       |      |      |      |      |
|-------------|-------|------|------|------|------|
| R4ADLTOT_M  | 13804 | 0.38 | 1.02 | 0.00 | 6.00 |
| R5ADLTOT_M  | 15762 | 0.33 | 0.96 | 0.00 | 6.00 |
| S1ADLTOT_M  | 9974  | 0.19 | 0.76 | 0.00 | 6.00 |
| S2ADLTOT_M  | 8737  | 0.18 | 0.72 | 0.00 | 6.00 |
| S3ADLTOT_M  | 9865  | 0.27 | 0.81 | 0.00 | 6.00 |
| S4ADLTOT_M  | 9167  | 0.32 | 0.94 | 0.00 | 6.00 |
| S5ADLTOT_M  | 7065  | 0.33 | 0.96 | 0.00 | 6.00 |
| R1ADLTOTM_M | 15186 | 0.15 | 0.66 | 0.00 | 6.00 |
| R2ADLTOTM_M | 13704 | 0.11 | 0.44 | 0.00 | 6.00 |
| R3ADLTOTM_M | 15723 | 0.10 | 0.37 | 0.00 | 6.00 |
| R4ADLTOTM_M | 14779 | 0.09 | 0.42 | 0.00 | 6.00 |
| R5ADLTOTM_M | 17114 | 0.11 | 0.53 | 0.00 | 6.00 |
| S1ADLTOTM_M | 10648 | 0.13 | 0.60 | 0.00 | 6.00 |
| S2ADLTOTM_M | 9564  | 0.10 | 0.39 | 0.00 | 6.00 |
| S3ADLTOTM_M | 10592 | 0.09 | 0.36 | 0.00 | 6.00 |
| S4ADLTOTM_M | 9652  | 0.06 | 0.33 | 0.00 | 6.00 |
| S5ADLTOTM_M | 7638  | 0.12 | 0.59 | 0.00 | 6.00 |
| R1ADLTOTA_M | 14113 | 0.10 | 0.30 | 0.00 | 1.00 |
| R2ADLTOTA_M | 12501 | 0.10 | 0.30 | 0.00 | 1.00 |
| R3ADLTOTA_M | 14446 | 0.16 | 0.37 | 0.00 | 1.00 |
| R4ADLTOTA_M | 13804 | 0.18 | 0.39 | 0.00 | 1.00 |
| R5ADLTOTA_M | 15762 | 0.16 | 0.37 | 0.00 | 1.00 |
| S1ADLTOTA_M | 9974  | 0.09 | 0.29 | 0.00 | 1.00 |
| S2ADLTOTA_M | 8737  | 0.08 | 0.28 | 0.00 | 1.00 |
| S3ADLTOTA_M | 9865  | 0.14 | 0.35 | 0.00 | 1.00 |
| S4ADLTOTA_M | 9167  | 0.16 | 0.36 | 0.00 | 1.00 |
| S5ADLTOTA_M | 7065  | 0.16 | 0.36 | 0.00 | 1.00 |
| R1ADLA      | 14113 | 0.20 | 0.72 | 0.00 | 5.00 |
| R2ADLA      | 12501 | 0.19 | 0.70 | 0.00 | 5.00 |
| R3ADLA      | 14446 | 0.27 | 0.77 | 0.00 | 5.00 |
| R4ADLA      | 13804 | 0.33 | 0.89 | 0.00 | 5.00 |
| R5ADLA      | 15762 | 0.28 | 0.82 | 0.00 | 5.00 |
| S1ADLA      | 9974  | 0.17 | 0.65 | 0.00 | 5.00 |
| S2ADLA      | 8737  | 0.15 | 0.62 | 0.00 | 5.00 |
| S3ADLA      | 9865  | 0.23 | 0.70 | 0.00 | 5.00 |
| S4ADLA      | 9167  | 0.28 | 0.81 | 0.00 | 5.00 |
| S5ADLA      | 7065  | 0.28 | 0.81 | 0.00 | 5.00 |
| R1ADLAM     | 15186 | 0.13 | 0.56 | 0.00 | 5.00 |
| R2ADLAM     | 13704 | 0.10 | 0.39 | 0.00 | 5.00 |
| R3ADLAM     | 15723 | 0.09 | 0.34 | 0.00 | 5.00 |
| R4ADLAM     | 14779 | 0.08 | 0.38 | 0.00 | 5.00 |
| R5ADLAM     | 17114 | 0.11 | 0.47 | 0.00 | 5.00 |
| S1ADLAM     | 10648 | 0.12 | 0.50 | 0.00 | 5.00 |
| S2ADLAM     | 9564  | 0.10 | 0.36 | 0.00 | 5.00 |
| S3ADLAM     | 10592 | 0.08 | 0.33 | 0.00 | 5.00 |
| S4ADLAM     | 9652  | 0.06 | 0.30 | 0.00 | 5.00 |
| S5ADLAM     | 7638  | 0.11 | 0.51 | 0.00 | 5.00 |
| R1ADLAA     | 14113 | 0.10 | 0.30 | 0.00 | 1.00 |
| R2ADLAA     | 12501 | 0.10 | 0.30 | 0.00 | 1.00 |
| R3ADLAA     | 14446 | 0.15 | 0.36 | 0.00 | 1.00 |
| R4ADLAA     | 13804 | 0.17 | 0.38 | 0.00 | 1.00 |
| R5ADLAA     | 15762 | 0.15 | 0.36 | 0.00 | 1.00 |
| S1ADLAA     | 9974  | 0.09 | 0.28 | 0.00 | 1.00 |

|            |       |      |      |      |      |
|------------|-------|------|------|------|------|
| S2ADLAA    | 8737  | 0.08 | 0.27 | 0.00 | 1.00 |
| S3ADLAA    | 9865  | 0.13 | 0.34 | 0.00 | 1.00 |
| S4ADLAA    | 9167  | 0.15 | 0.36 | 0.00 | 1.00 |
| S5ADLAA    | 7065  | 0.15 | 0.36 | 0.00 | 1.00 |
| R1ADLFIVE  | 14113 | 0.18 | 0.69 | 0.00 | 5.00 |
| R2ADLFIVE  | 12501 | 0.18 | 0.67 | 0.00 | 5.00 |
| R3ADLFIVE  | 14446 | 0.26 | 0.75 | 0.00 | 5.00 |
| R4ADLFIVE  | 13804 | 0.32 | 0.86 | 0.00 | 5.00 |
| R5ADLFIVE  | 15762 | 0.27 | 0.80 | 0.00 | 5.00 |
| S1ADLFIVE  | 9974  | 0.16 | 0.63 | 0.00 | 5.00 |
| S2ADLFIVE  | 8737  | 0.14 | 0.60 | 0.00 | 5.00 |
| S3ADLFIVE  | 9865  | 0.22 | 0.68 | 0.00 | 5.00 |
| S4ADLFIVE  | 9167  | 0.27 | 0.79 | 0.00 | 5.00 |
| S5ADLFIVE  | 7065  | 0.27 | 0.79 | 0.00 | 5.00 |
| R1ADLFIVEM | 15186 | 0.13 | 0.56 | 0.00 | 5.00 |
| R2ADLFIVEM | 13704 | 0.10 | 0.39 | 0.00 | 5.00 |
| R3ADLFIVEM | 15723 | 0.09 | 0.34 | 0.00 | 5.00 |
| R4ADLFIVEM | 14779 | 0.08 | 0.38 | 0.00 | 5.00 |
| R5ADLFIVEM | 17114 | 0.11 | 0.47 | 0.00 | 5.00 |
| S1ADLFIVEM | 10648 | 0.12 | 0.50 | 0.00 | 5.00 |
| S2ADLFIVEM | 9564  | 0.10 | 0.36 | 0.00 | 5.00 |
| S3ADLFIVEM | 10592 | 0.08 | 0.33 | 0.00 | 5.00 |
| S4ADLFIVEM | 9652  | 0.06 | 0.30 | 0.00 | 5.00 |
| S5ADLFIVEM | 7638  | 0.11 | 0.51 | 0.00 | 5.00 |
| R1ADLFIVEA | 14113 | 0.10 | 0.29 | 0.00 | 1.00 |
| R2ADLFIVEA | 12501 | 0.09 | 0.29 | 0.00 | 1.00 |
| R3ADLFIVEA | 14446 | 0.15 | 0.36 | 0.00 | 1.00 |
| R4ADLFIVEA | 13804 | 0.17 | 0.37 | 0.00 | 1.00 |
| R5ADLFIVEA | 15762 | 0.14 | 0.35 | 0.00 | 1.00 |
| S1ADLFIVEA | 9974  | 0.08 | 0.28 | 0.00 | 1.00 |
| S2ADLFIVEA | 8737  | 0.07 | 0.26 | 0.00 | 1.00 |
| S3ADLFIVEA | 9865  | 0.13 | 0.34 | 0.00 | 1.00 |
| S4ADLFIVEA | 9167  | 0.15 | 0.35 | 0.00 | 1.00 |
| S5ADLFIVEA | 7065  | 0.15 | 0.35 | 0.00 | 1.00 |
| R1ADLA_M   | 14971 | 0.16 | 0.64 | 0.00 | 4.00 |
| R2ADLA_M   | 13652 | 0.16 | 0.63 | 0.00 | 4.00 |
| R3ADLA_M   | 15690 | 0.24 | 0.71 | 0.00 | 4.00 |
| R4ADLA_M   | 14732 | 0.28 | 0.79 | 0.00 | 4.00 |
| R5ADLA_M   | 17009 | 0.24 | 0.74 | 0.00 | 4.00 |
| S1ADLA_M   | 10524 | 0.13 | 0.56 | 0.00 | 4.00 |
| S2ADLA_M   | 9538  | 0.13 | 0.55 | 0.00 | 4.00 |
| S3ADLA_M   | 10566 | 0.18 | 0.60 | 0.00 | 4.00 |
| S4ADLA_M   | 9637  | 0.22 | 0.68 | 0.00 | 4.00 |
| S5ADLA_M   | 7576  | 0.22 | 0.71 | 0.00 | 4.00 |
| R1ADLAM_M  | 15186 | 0.06 | 0.47 | 0.00 | 4.00 |
| R2ADLAM_M  | 13704 | 0.02 | 0.25 | 0.00 | 4.00 |
| R3ADLAM_M  | 15723 | 0.01 | 0.19 | 0.00 | 4.00 |
| R4ADLAM_M  | 14779 | 0.02 | 0.23 | 0.00 | 4.00 |
| R5ADLAM_M  | 17114 | 0.03 | 0.32 | 0.00 | 4.00 |
| S1ADLAM_M  | 10648 | 0.05 | 0.43 | 0.00 | 4.00 |
| S2ADLAM_M  | 9564  | 0.01 | 0.21 | 0.00 | 4.00 |
| S3ADLAM_M  | 10592 | 0.01 | 0.21 | 0.00 | 4.00 |
| S4ADLAM_M  | 9652  | 0.01 | 0.16 | 0.00 | 4.00 |
| S5ADLAM_M  | 7638  | 0.03 | 0.36 | 0.00 | 4.00 |

|           |       |      |      |      |      |
|-----------|-------|------|------|------|------|
| R1ADLAA_M | 14971 | 0.08 | 0.27 | 0.00 | 1.00 |
| R2ADLAA_M | 13652 | 0.08 | 0.28 | 0.00 | 1.00 |
| R3ADLAA_M | 15690 | 0.13 | 0.34 | 0.00 | 1.00 |
| R4ADLAA_M | 14732 | 0.15 | 0.36 | 0.00 | 1.00 |
| R5ADLAA_M | 17009 | 0.12 | 0.33 | 0.00 | 1.00 |
| S1ADLAA_M | 10524 | 0.07 | 0.25 | 0.00 | 1.00 |
| S2ADLAA_M | 9538  | 0.07 | 0.25 | 0.00 | 1.00 |
| S3ADLAA_M | 10566 | 0.11 | 0.31 | 0.00 | 1.00 |
| S4ADLAA_M | 9637  | 0.12 | 0.33 | 0.00 | 1.00 |
| S5ADLAA_M | 7576  | 0.11 | 0.32 | 0.00 | 1.00 |
| R1ADLWA   | 14113 | 0.11 | 0.42 | 0.00 | 3.00 |
| R2ADLWA   | 12501 | 0.10 | 0.42 | 0.00 | 3.00 |
| R3ADLWA   | 14446 | 0.15 | 0.46 | 0.00 | 3.00 |
| R4ADLWA   | 13804 | 0.18 | 0.53 | 0.00 | 3.00 |
| R5ADLWA   | 15762 | 0.16 | 0.49 | 0.00 | 3.00 |
| S1ADLWA   | 9974  | 0.09 | 0.38 | 0.00 | 3.00 |
| S2ADLWA   | 8737  | 0.08 | 0.37 | 0.00 | 3.00 |
| S3ADLWA   | 9865  | 0.12 | 0.41 | 0.00 | 3.00 |
| S4ADLWA   | 9167  | 0.16 | 0.49 | 0.00 | 3.00 |
| S5ADLWA   | 7065  | 0.16 | 0.48 | 0.00 | 3.00 |
| R1ADLWAM  | 15186 | 0.10 | 0.37 | 0.00 | 3.00 |
| R2ADLWAM  | 13704 | 0.10 | 0.32 | 0.00 | 3.00 |
| R3ADLWAM  | 15723 | 0.09 | 0.29 | 0.00 | 3.00 |
| R4ADLWAM  | 14779 | 0.07 | 0.30 | 0.00 | 3.00 |
| R5ADLWAM  | 17114 | 0.09 | 0.35 | 0.00 | 3.00 |
| S1ADLWAM  | 10648 | 0.09 | 0.34 | 0.00 | 3.00 |
| S2ADLWAM  | 9564  | 0.09 | 0.30 | 0.00 | 3.00 |
| S3ADLWAM  | 10592 | 0.08 | 0.28 | 0.00 | 3.00 |
| S4ADLWAM  | 9652  | 0.06 | 0.25 | 0.00 | 3.00 |
| S5ADLWAM  | 7638  | 0.09 | 0.36 | 0.00 | 3.00 |
| R1ADLWAA  | 14113 | 0.08 | 0.26 | 0.00 | 1.00 |
| R2ADLWAA  | 12501 | 0.07 | 0.26 | 0.00 | 1.00 |
| R3ADLWAA  | 14446 | 0.11 | 0.31 | 0.00 | 1.00 |
| R4ADLWAA  | 13804 | 0.13 | 0.34 | 0.00 | 1.00 |
| R5ADLWAA  | 15762 | 0.11 | 0.32 | 0.00 | 1.00 |
| S1ADLWAA  | 9974  | 0.07 | 0.25 | 0.00 | 1.00 |
| S2ADLWAA  | 8737  | 0.06 | 0.24 | 0.00 | 1.00 |
| S3ADLWAA  | 9865  | 0.10 | 0.30 | 0.00 | 1.00 |
| S4ADLWAA  | 9167  | 0.11 | 0.32 | 0.00 | 1.00 |
| S5ADLWAA  | 7065  | 0.12 | 0.32 | 0.00 | 1.00 |

Categorical Variable Codes

|                               |             |             |             |             |             |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|
| Value-----                    | R1ADLTOTA_M | R2ADLTOTA_M | R3ADLTOTA_M | R4ADLTOTA_M | R5ADLTOTA_M |
| .d:DK                         | 1           |             | 1           | 5           |             |
| .m:Missing                    | 38          | 25          |             | 40          | 17          |
| .p:Proxy interview, not asked | 1032        | 1178        | 1275        | 929         | 1328        |
| .r:Refuse                     | 2           |             | 1           | 1           | 7           |
| 0.No                          | 12659       | 11224       | 12096       | 11305       | 13265       |
| 1.Yes                         | 1454        | 1277        | 2350        | 2499        | 2497        |
| Value-----                    | S1ADLTOTA_M | S2ADLTOTA_M | S3ADLTOTA_M | S4ADLTOTA_M | S5ADLTOTA_M |
| .d:DK                         |             |             | 1           | 5           |             |
| .m:Missing                    | 13          | 6           |             | 10          | 5           |
| .p:Proxy interview, not asked | 660         | 821         | 726         | 470         | 563         |
| .r:Refuse                     | 1           |             |             |             | 5           |
| .u:Unmar                      | 4205        | 4009        | 4782        | 4847        | 5227        |

|                               |            |            |            |            |            |
|-------------------------------|------------|------------|------------|------------|------------|
| .v:SP NR                      | 333        | 131        | 349        | 280        | 501        |
| 0.No                          | 9073       | 8007       | 8446       | 7722       | 5947       |
| 1.Yes                         | 901        | 730        | 1419       | 1445       | 1118       |
| Value-----                    | R1ADLAA    | R2ADLAA    | R3ADLAA    | R4ADLAA    | R5ADLAA    |
| .d:DK                         | 1          |            | 1          | 5          |            |
| .m:Missing                    | 38         | 25         |            | 40         | 17         |
| .p:Proxy interview, not asked | 1032       | 1178       | 1275       | 929        | 1328       |
| .r:Refuse                     | 2          |            | 1          | 1          | 7          |
| 0.No                          | 12723      | 11266      | 12275      | 11435      | 13427      |
| 1.Yes                         | 1390       | 1235       | 2171       | 2369       | 2335       |
| Value-----                    | S1ADLAA    | S2ADLAA    | S3ADLAA    | S4ADLAA    | S5ADLAA    |
| .d:DK                         |            |            | 1          | 5          |            |
| .m:Missing                    | 13         | 6          |            | 10         | 5          |
| .p:Proxy interview, not asked | 660        | 821        | 726        | 470        | 563        |
| .r:Refuse                     | 1          |            |            |            | 5          |
| .u:Unmar                      | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      | 333        | 131        | 349        | 280        | 501        |
| 0.No                          | 9119       | 8026       | 8554       | 7805       | 6019       |
| 1.Yes                         | 855        | 711        | 1311       | 1362       | 1046       |
| Value-----                    | R1ADLFIVEA | R2ADLFIVEA | R3ADLFIVEA | R4ADLFIVEA | R5ADLFIVEA |
| .d:DK                         | 1          |            | 1          | 5          |            |
| .m:Missing                    | 38         | 25         |            | 40         | 17         |
| .p:Proxy interview, not asked | 1032       | 1178       | 1275       | 929        | 1328       |
| .r:Refuse                     | 2          |            | 1          | 1          | 7          |
| 0.No                          | 12764      | 11370      | 12271      | 11493      | 13490      |
| 1.Yes                         | 1349       | 1131       | 2175       | 2311       | 2272       |
| Value-----                    | S1ADLFIVEA | S2ADLFIVEA | S3ADLFIVEA | S4ADLFIVEA | S5ADLFIVEA |
| .d:DK                         |            |            | 1          | 5          |            |
| .m:Missing                    | 13         | 6          |            | 10         | 5          |
| .p:Proxy interview, not asked | 660        | 821        | 726        | 470        | 563        |
| .r:Refuse                     | 1          |            |            |            | 5          |
| .u:Unmar                      | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      | 333        | 131        | 349        | 280        | 501        |
| 0.No                          | 9132       | 8082       | 8543       | 7821       | 6032       |
| 1.Yes                         | 842        | 655        | 1322       | 1346       | 1033       |
| Value-----                    | R1ADLAA_M  | R2ADLAA_M  | R3ADLAA_M  | R4ADLAA_M  | R5ADLAA_M  |
| .d:DK                         | 38         |            | 31         | 6          | 2          |
| .m:Missing                    | 40         | 47         |            | 40         | 18         |
| .r:Refuse                     | 137        | 5          | 2          | 1          | 85         |
| 0.No                          | 13767      | 12520      | 13639      | 12492      | 14943      |
| 1.Yes                         | 1204       | 1132       | 2051       | 2240       | 2066       |
| Value-----                    | S1ADLAA_M  | S2ADLAA_M  | S3ADLAA_M  | S4ADLAA_M  | S5ADLAA_M  |
| .d:DK                         | 22         |            | 25         | 5          |            |
| .m:Missing                    | 14         | 23         |            | 10         | 6          |
| .r:Refuse                     | 88         | 3          | 1          |            | 56         |
| .u:Unmar                      | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      | 333        | 131        | 349        | 280        | 501        |
| 0.No                          | 9838       | 8916       | 9452       | 8462       | 6727       |
| 1.Yes                         | 686        | 622        | 1114       | 1175       | 849        |
| Value-----                    | R1ADLWAA   | R2ADLWAA   | R3ADLWAA   | R4ADLWAA   | R5ADLWAA   |
| .d:DK                         | 1          |            | 1          | 5          |            |
| .m:Missing                    | 38         | 25         |            | 40         | 17         |
| .p:Proxy interview, not asked | 1032       | 1178       | 1275       | 929        | 1328       |
| .r:Refuse                     | 2          |            | 1          | 1          | 7          |
| 0.No                          | 13043      | 11603      | 12853      | 12025      | 13963      |
| 1.Yes                         | 1070       | 898        | 1593       | 1779       | 1799       |
| Value-----                    | S1ADLWAA   | S2ADLWAA   | S3ADLWAA   | S4ADLWAA   | S5ADLWAA   |
| .d:DK                         |            |            | 1          | 5          |            |
| .m:Missing                    | 13         | 6          |            | 10         | 5          |
| .p:Proxy interview, not asked | 660        | 821        | 726        | 470        | 563        |
| .r:Refuse                     | 1          |            |            |            | 5          |
| .u:Unmar                      | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      | 333        | 131        | 349        | 280        | 501        |
| 0.No                          | 9310       | 8213       | 8907       | 8141       | 6235       |
| 1.Yes                         | 664        | 524        | 958        | 1026       | 830        |

## How Constructed

Five activities of daily living (ADL) summaries are derived from the `Rw[adl]A` variables.

The first one (`RwADLTOT_M`) includes all available ADL measures: `RwBATHA`, `RwDRESSA`, `RwEATA`, `RwBEDA`, `RwWALKRA`, and `RwTOILTA`. The second one (`RwADLA`) includes the following five ADL measures: `RwBATHA`, `RwDRESSA`, `RwEATA`, `RwBEDA`, and `RwWALKRA`. The third one (`RwADLFIVE`) includes an alternative grouping of five ADL measures: `RwBATHA`, `RwDRESSA`, `RwEATA`, `RwBEDA`, and `RwTOILTA`. The fourth one (`RwADLA_M`) is an MHAS specific summary variable that includes the following four variables: `RwBATHA`, `RwEATA`, `RwBEDA`, and `RwWALKRA`. This variable was created excluding `RwDRESSA` since the difficulty with dressing variable was skipped for proxy interviews. The fifth summary measure uses the ADLs proposed by Wallace and Herzog in their paper (Wallace and Herzog, 1995) to define an ADL summary (`RwADLWA`): bathe, dress, and eat. In all waves the indicators of "some difficulty" are used to construct these summary measures. Each limitation adds one to the summary measures even if one or more measures have missing special values as long as at least one of the ADL components was completed, that is:

```
RwADLTOT_M = sum (RwBATHA, RwDRESSA, RwEATA, RwBEDA, RwWALKRA, RwTOILTA).
```

```
RwADLA = sum (RwBATHA, RwDRESSA, RwEATA, RwBEDA, RwWALKRA).
```

```
RwADLFIVE = sum (RwBATHA, RwDRESSA, RwEATA, RwBEDA, RwTOILTA).
```

```
RwADLA_M = sum (RwBATHA, RwEATA, RwBEDA, RwWALKRA).
```

```
RwADLWA = sum (RwBATHA, RwDRESSA, RwEATA).
```

Each of these summary variables is calculated as long as at least one of its components is not missing. `RwADLTOTM_M`, `RwADLAM`, `RwADLFIVEM`, `RwADLAM_M`, and `RwADLWAM` count the number of missing components for each summary score. `RwADLTOTA_M`, `RwADLAA`, `RwADLFIVEA`, `RwADLA_M`, and `RwADLWA` indicate whether the respondent had difficulty with any item in the summary. They are coded as 0 if they had no difficulty and 1 if they had difficulty with at least one item. `RwADLTOT_M`, `RwADLA`, `RwADLFIVE`, `RwADLA_M`, `RwADLWA`, `RwADLTOTA_M`, `RwADLAA`, `RwADLFIVEA`, `RwADLA_M`, and `RwADLWA` are assigned special missing `.d`, `.r`, `.x`, `.p`, `.m`, for don't know, refused, doesn't do, proxy, or otherwise missing responses, respectively. These variables are assigned a blank missing (`.`) for respondents who did not participate in the current wave.

`SwADLTOT_M`, `SwADLA`, `SwADLFIVE`, `SwADLA_M`, and `SwADLWA` are the respondent's spouse's ADL summaries and are taken directly from the spouse's `RwADLTOT_M`, `RwADLA`, `RwADLFIVE`, `RwADLA_M`, and `RwADLWA`, respectively. `SwADLTOTM_M`, `SwADLAM`, `SwADLFIVEM`, `SwADLAM_M`, and `SwADLWAM` are the respondent's spouse's counts of missing values in the corresponding ADL summaries and are taken directly from the spouse's `RwADLTOTM_M`, `RwADLAM`, `RwADLFIVEM`, `RwADLAM_M`, and `RwADLWAM`, respectively. `SwADLTOTA_M`, `SwADLAA`, `SwADLFIVEA`, `SwADLA_M`, and `SwADLWA` are the respondent's spouse's indicators of any difficulty in the ADL summaries and are taken directly from the spouse's `RwADLTOTA_M`, `RwADLAA`, `RwADLFIVEA`, `RwADLA_M`, and `RwADLWA`. In addition to the special missing codes used in the respondent variables, the spouse variables employ the special missing value `.u`, when the respondent does not report being coupled in the current wave, and the special missing value `.v`, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

Please see "Activities of Daily Living (ADLs): Some difficulty" for a description of how the individual 0/1 indicators (`RwBATHA`, `RwDRESSA`, `RwEATA`, `RwBEDA`, `RwWALKRA`, and `RwTOILTA`) are constructed.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

Unlike the HRS, the activities of daily living (ADLs) recodes for comparison to Wallace and Herzog and the ADL summary that includes these variables, were not created in the MHAS. These variables code a yes/no dummy that indicates "any difficulty" in a manner used by Wallace and Herzog in their paper (Wallace and Herzog, 1995). In the HRS, respondents are asked if the activity is "a little difficult", "somewhat difficult" or "very difficult/can't do". The ADL variables are recoded to 1 for "any difficulty" if the respondent answered "a little difficult", "somewhat difficult" or "very



difficult/can't do" according to Wallace and Herzog. However, in the MHAS, respondents are only asked if they have "some difficulty" with the ADLs.

## MHAS Variables Used

### Wave 1:

|       |                                       |
|-------|---------------------------------------|
| H1    | long walk                             |
| H10   | pulling                               |
| H11   | picking up                            |
| H12   | picking up a coin                     |
| H13   | dressing                              |
| H14   | help dressing                         |
| H15_1 | difficult walking                     |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_1 | difficult bathing                     |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_1 | difficult eating                      |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_1 | difficult getting in an out of bed    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H19_1 | difficult using toilet                |
| H19_3 | spouse helps using toilet             |
| H19_4 | other helps using toilet              |
| H4    | sitting 2 hours                       |
| H5    | getting up                            |
| H6    | long climbing                         |
| H7    | short climbing                        |
| H8    | bending                               |
| H9    | extending arms                        |

### Wave 2:

|      |   |
|------|---|
| H1   | health problems-trouble walking blocks          |
| H10  | health problems-trouble pushing or pulling      |
| H11  | health problems-trouble carrying objects        |
| H12  | health problems-trouble picking up a coin       |
| H13  | health problems-trouble dressing self           |
| H14  | someone help you to get dressed                 |
| H15A | health problem-trouble walking                  |
| H15E | spouse helps                                    |
| H15F | additional person helps                         |
| H16A | health problem-have trouble bathing             |
| H16E | spouse helps                                    |
| H16F | additional person helps                         |
| H17A | health problem-trouble eating or cutting        |
| H17E | spouse helps                                    |
| H17F | additional person helps                         |
| H18A | health problem-get in/out of bed                |
| H18E | spouse helps                                    |
| H18F | additional person helps                         |
| H19A | health problem-trouble going to bathroom        |
| H19E | spouse helps                                    |
| H19F | additional person helps                         |
| H4   | health problems-trouble staying seated          |
| H5   | health problems-trouble getting up from chair   |
| H6   | health problems-trouble with flights of stairs  |
| H7   | health problems-trouble with 1 flight of stairs |
| H8   | health problems-trouble sitting up              |
| H9   | health problems-trouble lifting arms            |

### Wave 3:

|        |   |
|--------|---|
| H10_12 | Because of health problem, difficulty pushing or pullin |
| H11_12 | Because of health problem, difficulty carrying objects  |

H12\_12 Because of health problem, difficulty picking up a coin  
 H13\_12 Because of health problem, difficulty dressing self  
 H14\_12 Someone help you to get dressed  
 H15A\_12 Because of health problem, difficulty walking  
 H15D\_12 Someone help you walk across room  
 H16A\_12 Because of health problem, difficulty bathing  
 H16D\_12 Someone help you to bathe or shower  
 H17A\_12 Because of health problem, difficulty eating or cutting  
 H17D\_12 Does someone help you eat your food  
 H18A\_12 Because of health problem, difficulty get in/out of bed  
 H18D\_12 Does someone help you get into or out of bed  
 H19A\_12 Because of health problem, difficulty going to the bath  
 H19D\_12 Does someone help you use toilet, get on off  
 H1\_12 Because of health problem, difficulty walking blocks  
 H4\_12 Because of health problem, difficulty staying seated  
 H5\_12 Because of health problem, difficulty getting up from c  
 H6\_12 Because of health problem, difficulty with flights of s  
 H7\_12 Because of health problem, difficulty with 1 flight of  
 H8\_12 Because of health problem, difficulty sitting up  
 H9\_12 Because of health problem, difficulty lifting arms

## Wave 4:

H10\_15 Because of health problem, does respondent have difficu  
 H11\_15 Because of health problem, does respondent have difficu  
 H12\_15 Because of health problem, does respondent have difficu  
 H13\_15 Because of health problem, does respondent have difficu  
 H14\_15 Does someone help respondent to get dressed  
 H15A\_15 Because of health problem, does respondent have any dif  
 H15D\_15 Does someone help respondent walking across a room  
 H16A\_15 Because of health problem, does respondent have any dif  
 H16D\_15 Does someone help respondent bathing or showering  
 H17A\_15 Because of health problem, does respondent have any dif  
 H17D\_15 Does someone help respondent eating  
 H18A\_15 Because of health problem, does respondent have any dif  
 H18D\_15 Does someone help respondent getting in or out of bed  
 H19A\_15 Because of health problem, does respondent have any dif  
 H19D\_15 Does someone help respondent using the toilet  
 H1\_15 Because of health problem, does respondent have difficu  
 H4\_15 Because of health problem, does respondent have difficu  
 H5\_15 Because of health problem, does respondent have difficu  
 H6\_15 Because of health problem, does respondent have difficu  
 H7\_15 Because of health problem, does respondent have difficu  
 H8\_15 Because of health problem, does respondent have difficu  
 H9\_15 Because of health problem, does respondent have difficu

## Wave 5:

H10\_18 Because of health problem, does R have difficulty pushi  
 H11\_18 Due to health problem, difficult for R to lift/carry ob  
 H12\_18 Due to health problem, does R have difficulty picking u  
 H13\_18 Due to health problem, difficult for R to dress, includ  
 H14\_18 Does someone help R to get dressed  
 H15A\_18 Because of health problem, does R have any difficulty w  
 H15D\_18 Does someone help R walking across a room  
 H16A\_18 Because of health problem, does R have any difficulty b  
 H16D\_18 Does someone help R bathing or showering  
 H17A\_18 Due to health problem, does R have any difficulty eatin  
 H17D\_18 Does someone help R eating  
 H18A\_18 Because of health problem, does R have any difficulty g  
 H18D\_18 Does someone help R getting in or out of bed  
 H19A\_18 Because of health problem, does R have any difficulty u  
 H19D\_18 Does someone help R using the toilet  
 H1\_18 Because of health problem, does R have difficulty walki  
 H4\_18 Because of health problem, does R have difficulty sitti  
 H5\_18 Due to health problem, difficult for R to get up from c  
 H6\_18 Due to health problem, hard for R to climb several flig  
 H7\_18 Due to health problem, difficult for R to climb 1 fligh

|       |   |
|-------|---|
| H8_18 | Due to health problem, does R have difficulty stooping, |
| H9_18 | Due to health problem, difficult for R to reach/extend  |

|  |
|--|
| <b>IADL Summary: Sum IADLs Where Respondent Reports Any Difficulty</b> |
|--|

| Wave | Variable    | Label   | Type  |
|------|-------------|---|-------|
| 1    | R1IADLF0UR  | r1iadlfour: w1 R Some difficulty-IADLs 0-4                | Cont  |
| 2    | R2IADLF0UR  | r2iadlfour: w2 R Some difficulty-IADLs 0-4                | Cont  |
| 3    | R3IADLF0UR  | r3iadlfour: w3 R Some difficulty-IADLs 0-4                | Cont  |
| 4    | R4IADLF0UR  | r4iadlfour: w4 R Some difficulty-IADLs 0-4                | Cont  |
| 5    | R5IADLF0UR  | r5iadlfour: w5 R Some difficulty-IADLs 0-4                | Cont  |
| 1    | S1IADLF0UR  | s1iadlfour: w1 S Some difficulty-IADLs 0-4                | Cont  |
| 2    | S2IADLF0UR  | s2iadlfour: w2 S Some difficulty-IADLs 0-4                | Cont  |
| 3    | S3IADLF0UR  | s3iadlfour: w3 S Some difficulty-IADLs 0-4                | Cont  |
| 4    | S4IADLF0UR  | s4iadlfour: w4 S Some difficulty-IADLs 0-4                | Cont  |
| 5    | S5IADLF0UR  | s5iadlfour: w5 S Some difficulty-IADLs 0-4                | Cont  |
| 1    | R1IADLF0URM | r1iadlfourm: w1 R Some difficulty-Missings in IADLs Score | Cont  |
| 2    | R2IADLF0URM | r2iadlfourm: w2 R Some difficulty-Missings in IADLs Score | Cont  |
| 3    | R3IADLF0URM | r3iadlfourm: w3 R Some difficulty-Missings in IADLs Score | Cont  |
| 4    | R4IADLF0URM | r4iadlfourm: w4 R Some difficulty-Missings in IADLs Score | Cont  |
| 5    | R5IADLF0URM | r5iadlfourm: w5 R Some difficulty-Missings in IADLs Score | Cont  |
| 1    | S1IADLF0URM | s1iadlfourm: w1 S Some difficulty-Missings in IADLs Score | Cont  |
| 2    | S2IADLF0URM | s2iadlfourm: w2 S Some difficulty-Missings in IADLs Score | Cont  |
| 3    | S3IADLF0URM | s3iadlfourm: w3 S Some difficulty-Missings in IADLs Score | Cont  |
| 4    | S4IADLF0URM | s4iadlfourm: w4 S Some difficulty-Missings in IADLs Score | Cont  |
| 5    | S5IADLF0URM | s5iadlfourm: w5 S Some difficulty-Missings in IADLs Score | Cont  |
| 1    | R1IADLF0URA | r1iadlfoura: w1 R Any difficulty IADLs 0-4                | Categ |
| 2    | R2IADLF0URA | r2iadlfoura: w2 R Any difficulty IADLs 0-4                | Categ |
| 3    | R3IADLF0URA | r3iadlfoura: w3 R Any difficulty IADLs 0-4                | Categ |
| 4    | R4IADLF0URA | r4iadlfoura: w4 R Any difficulty IADLs 0-4                | Categ |
| 5    | R5IADLF0URA | r5iadlfoura: w5 R Any difficulty IADLs 0-4                | Categ |
| 1    | S1IADLF0URA | s1iadlfoura: w1 S Any difficulty IADLs 0-4                | Categ |
| 2    | S2IADLF0URA | s2iadlfoura: w2 S Any difficulty IADLs 0-4                | Categ |
| 3    | S3IADLF0URA | s3iadlfoura: w3 S Any difficulty IADLs 0-4                | Categ |
| 4    | S4IADLF0URA | s4iadlfoura: w4 S Any difficulty IADLs 0-4                | Categ |
| 5    | S5IADLF0URA | s5iadlfoura: w5 S Any difficulty IADLs 0-4                | Categ |

### Descriptive Statistics

| Variable    | N     | Mean | Std Dev | Minimum | Maximum |
|-------------|-------|------|---------|---------|---------|
| R1IADLF0UR  | 14085 | 0.14 | 0.58    | 0.00    | 4.00    |
| R2IADLF0UR  | 12494 | 0.15 | 0.60    | 0.00    | 4.00    |
| R3IADLF0UR  | 14445 | 0.18 | 0.60    | 0.00    | 4.00    |
| R4IADLF0UR  | 13803 | 0.22 | 0.67    | 0.00    | 4.00    |
| R5IADLF0UR  | 15755 | 0.17 | 0.59    | 0.00    | 4.00    |
| S1IADLF0UR  | 9952  | 0.11 | 0.49    | 0.00    | 4.00    |
| S2IADLF0UR  | 8732  | 0.11 | 0.50    | 0.00    | 4.00    |
| S3IADLF0UR  | 9864  | 0.13 | 0.52    | 0.00    | 4.00    |
| S4IADLF0UR  | 9167  | 0.16 | 0.57    | 0.00    | 4.00    |
| S5IADLF0UR  | 7062  | 0.15 | 0.56    | 0.00    | 4.00    |
| R1IADLF0URM | 15186 | 0.37 | 1.08    | 0.00    | 4.00    |
| R2IADLF0URM | 13704 | 0.42 | 1.15    | 0.00    | 4.00    |
| R3IADLF0URM | 15723 | 0.40 | 1.11    | 0.00    | 4.00    |
| R4IADLF0URM | 14779 | 0.34 | 1.02    | 0.00    | 4.00    |
| R5IADLF0URM | 17114 | 0.36 | 1.09    | 0.00    | 4.00    |

|             |       |      |      |      |      |
|-------------|-------|------|------|------|------|
| S1IADLF0URM | 10648 | 0.35 | 1.04 | 0.00 | 4.00 |
| S2IADLF0URM | 9564  | 0.42 | 1.15 | 0.00 | 4.00 |
| S3IADLF0URM | 10592 | 0.35 | 1.04 | 0.00 | 4.00 |
| S4IADLF0URM | 9652  | 0.27 | 0.91 | 0.00 | 4.00 |
| S5IADLF0URM | 7638  | 0.35 | 1.07 | 0.00 | 4.00 |
| R1IADLF0URA | 14085 | 0.08 | 0.26 | 0.00 | 1.00 |
| R2IADLF0URA | 12494 | 0.08 | 0.27 | 0.00 | 1.00 |
| R3IADLF0URA | 14445 | 0.11 | 0.31 | 0.00 | 1.00 |
| R4IADLF0URA | 13803 | 0.13 | 0.33 | 0.00 | 1.00 |
| R5IADLF0URA | 15755 | 0.09 | 0.29 | 0.00 | 1.00 |
| S1IADLF0URA | 9952  | 0.06 | 0.24 | 0.00 | 1.00 |
| S2IADLF0URA | 8732  | 0.06 | 0.23 | 0.00 | 1.00 |
| S3IADLF0URA | 9864  | 0.08 | 0.27 | 0.00 | 1.00 |
| S4IADLF0URA | 9167  | 0.09 | 0.29 | 0.00 | 1.00 |
| S5IADLF0URA | 7062  | 0.09 | 0.29 | 0.00 | 1.00 |

## Categorical Variable Codes

| Value-----                    | R1IADLF0URA | R2IADLF0URA | R3IADLF0URA | R4IADLF0URA | R5IADLF0URA |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|
| .d:DK                         | 13          |             | 1           | 5           |             |
| .m:Missing                    | 38          | 25          |             | 40          | 17          |
| .p:Proxy interview, not asked | 1032        | 1178        | 1275        | 929         | 1328        |
| .r:Refuse                     | 10          | 1           | 1           | 1           | 12          |
| .x:Doesn't do                 | 8           | 6           | 1           | 1           | 2           |
| 0.No                          | 13016       | 11504       | 12918       | 12040       | 14283       |
| 1.Yes                         | 1069        | 990         | 1527        | 1763        | 1472        |

| Value-----                    | S1IADLF0URA | S2IADLF0URA | S3IADLF0URA | S4IADLF0URA | S5IADLF0URA |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|
| .d:DK                         | 11          |             | 1           | 5           |             |
| .m:Missing                    | 13          | 6           |             | 10          | 5           |
| .p:Proxy interview, not asked | 660         | 821         | 726         | 470         | 563         |
| .r:Refuse                     | 7           | 1           |             |             | 7           |
| .u:Unmar                      | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                      | 333         | 131         | 349         | 280         | 501         |
| .x:Doesn't do                 | 5           | 4           | 1           |             | 1           |
| 0.No                          | 9355        | 8232        | 9068        | 8299        | 6432        |
| 1.Yes                         | 597         | 500         | 796         | 868         | 630         |

## How Constructed

One instrumental activities of daily living (IADL) summary variable was constructed. RwiADLF0UR summarizes the commonly used IADLs including managing money, taking medications, shopping for groceries, and preparing hot meals. In all waves the indicators of "some difficulty" are used to construct this summary measure. Each limitation adds one to the summary measures even if one or more measures have missing special values and if at least one of the IADL components was completed, that is:

$RwiADLF0UR = \text{sum}(RwMONEYA, RwMEDSA, RwSHOPA, RwMEALSA)$ . RwiADLF0URM is the number of IADL questions with missing values, ranging from 0 to 4. RwiADLF0URA indicates whether the respondent had difficulty with any item in the summary. They are coded as 0 if they had no difficulty and 1 if they had difficulty with at least one item. RwiADLF0UR and RwiADLF0URA are assigned special missing .d, .r, .x, .p, .m, for don't know, refused, doesn't do, proxy, or otherwise missing responses, respectively. RwiADLF0UR, RwiADLF0URM, and RwiADLF0URA are assigned a blank missing (.) for respondents who did not participate in the current wave.

SwiADLF0UR, SwiADLF0URM, and SwiADLF0URA are the respondent's spouse's IADL summary, count of missing values in that summary, and indicator of any difficulty in that summary, and are taken directly from the spouse's RwiADLF0UR, RwiADLF0URM, and RwiADLF0URA, respectively. In addition to the special missing codes used in RwiADLF0UR, RwiADLF0URM, and RwiADLF0URA, SwiADLF0UR, SwiADLF0URM, and SwiADLF0URA employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

Please see "Instrumental Activities of Daily Living (IADLs): Some difficulty" for a description of how the individual 0/1 indicators (RwMONEYA, RwMEDSA, RwSHOPA, and RwMEALSA) are constructed.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

Unlike the HRS, the MHAS does not include the instrumental activities of daily living (IADLs) regarding using the phone and using a map. An IADL summary variable was created including using managing money (RwMONEYA), taking medications (RwMEDSA), shopping for groceries (RwSHOPA), and preparing meals (RwMEALSA), for which a comparable summary variable is available in the Harmonized HRS.

## MHAS Variables Used

### Wave 1:

|       |                                    |
|-------|------------------------------------|
| H26_1 | hot meal                           |
| H26_2 | health prevents preparing hot meal |
| H27_1 | shopping                           |
| H27_2 | health prevents shopping           |
| H28_1 | taking medication                  |
| H28_2 | health prevents taking medication  |
| H29_1 | managing money                     |
| H29_2 | health prevents managing money     |

### Wave 2:

|      |                                 |
|------|---------------------------------|
| H26A | trouble preparing hot food      |
| H26B | this is due to a health problem |
| H27A | trouble shopping                |
| H27B | this is due to a health problem |
| H28A | trouble taking medicine         |
| H28B | this is due to a health problem |
| H29A | trouble managing money          |
| H29B | this is due to a health problem |

### Wave 3:

|         |   |
|---------|---|
| H26A_12 | Difficulty preparing hot food                         |
| H26B_12 | Difficulty preparing hot food due to a health problem |
| H27A_12 | Difficulty shopping                                   |
| H27B_12 | Difficulty shopping due to a health problem           |
| H28A_12 | Difficulty taking medications                         |
| H28B_12 | Difficulty taking medications due to a health problem |
| H29A_12 | Difficulty managing money                             |
| H29B_12 | Difficulty managing money due to a health problem     |

### Wave 4:

|         |   |
|---------|---|
| H26A_15 | Because of health problem, does respondent have any dif |
| H26B_15 | Is this (difficulty preparing a hot meal) because of a  |
| H27A_15 | Because of health problem, does respondent have any dif |
| H27B_15 | Is this (shopping for groceries) because of a health pr |
| H28A_15 | Because of health problem, does respondent have any dif |
| H28B_15 | Is this (taking medications) because of a health proble |
| H29A_15 | Because of health problem, does respondent have any dif |
| H29B_15 | Is this (managing his/her money) because of a health pr |

### Wave 5:

|         |   |
|---------|---|
| H26A_18 | Because of health problem, does R have any difficulty p |
| H26B_18 | Is this (difficulty preparing a hot meal) because of a  |
| H27A_18 | Because of health problem, does R have any difficulty s |
| H27B_18 | Is this (difficulty shopping for groceries) because of  |
| H28A_18 | Because of health problem, does R have any difficulty t |
| H28B_18 | Is this (difficulty taking medications) because of a he |
| H29A_18 | Because of health problem, does R have any difficulty m |
| H29B_18 | Is this (difficulty managing his/her money) because of  |

**Other Summary Indices: Mobility, Large Muscle, Gross, Fine Motor, Total, Upper, Lower Body Mobility, and NAGI Activities**

| Wave | Variable  | Label  | Type  |
|------|-----------|--|-------|
| 1    | R1MOBILA  | r1mobila: w1 R Some difficulty-Mobility 0-5                  | Cont  |
| 2    | R2MOBILA  | r2mobila: w2 R Some difficulty-Mobility 0-5                  | Cont  |
| 3    | R3MOBILA  | r3mobila: w3 R Some difficulty-Mobility 0-5                  | Cont  |
| 4    | R4MOBILA  | r4mobila: w4 R Some difficulty-Mobility 0-5                  | Cont  |
| 5    | R5MOBILA  | r5mobila: w5 R Some difficulty-Mobility 0-5                  | Cont  |
| 1    | S1MOBILA  | s1mobila: w1 S Some difficulty-Mobility 0-5                  | Cont  |
| 2    | S2MOBILA  | s2mobila: w2 S Some difficulty-Mobility 0-5                  | Cont  |
| 3    | S3MOBILA  | s3mobila: w3 S Some difficulty-Mobility 0-5                  | Cont  |
| 4    | S4MOBILA  | s4mobila: w4 S Some difficulty-Mobility 0-5                  | Cont  |
| 5    | S5MOBILA  | s5mobila: w5 S Some difficulty-Mobility 0-5                  | Cont  |
| 1    | R1MOBILAM | r1mobilam: w1 R Some difficulty-Missings in Mobility Score   | Cont  |
| 2    | R2MOBILAM | r2mobilam: w2 R Some difficulty-Missings in Mobility Score   | Cont  |
| 3    | R3MOBILAM | r3mobilam: w3 R Some difficulty-Missings in Mobility Score   | Cont  |
| 4    | R4MOBILAM | r4mobilam: w4 R Some difficulty-Missings in Mobility Score   | Cont  |
| 5    | R5MOBILAM | r5mobilam: w5 R Some difficulty-Missings in Mobility Score   | Cont  |
| 1    | S1MOBILAM | s1mobilam: w1 S Some difficulty-Missings in Mobility Score   | Cont  |
| 2    | S2MOBILAM | s2mobilam: w2 S Some difficulty-Missings in Mobility Score   | Cont  |
| 3    | S3MOBILAM | s3mobilam: w3 S Some difficulty-Missings in Mobility Score   | Cont  |
| 4    | S4MOBILAM | s4mobilam: w4 S Some difficulty-Missings in Mobility Score   | Cont  |
| 5    | S5MOBILAM | s5mobilam: w5 S Some difficulty-Missings in Mobility Score   | Cont  |
| 1    | R1MOBILAA | r1mobilaa: w1 R Any difficulty Mobility 0-5                  | Categ |
| 2    | R2MOBILAA | r2mobilaa: w2 R Any difficulty Mobility 0-5                  | Categ |
| 3    | R3MOBILAA | r3mobilaa: w3 R Any difficulty Mobility 0-5                  | Categ |
| 4    | R4MOBILAA | r4mobilaa: w4 R Any difficulty Mobility 0-5                  | Categ |
| 5    | R5MOBILAA | r5mobilaa: w5 R Any difficulty Mobility 0-5                  | Categ |
| 1    | S1MOBILAA | s1mobilaa: w1 S Any difficulty Mobility 0-5                  | Categ |
| 2    | S2MOBILAA | s2mobilaa: w2 S Any difficulty Mobility 0-5                  | Categ |
| 3    | S3MOBILAA | s3mobilaa: w3 S Any difficulty Mobility 0-5                  | Categ |
| 4    | S4MOBILAA | s4mobilaa: w4 S Any difficulty Mobility 0-5                  | Categ |
| 5    | S5MOBILAA | s5mobilaa: w5 S Any difficulty Mobility 0-5                  | Categ |
| 1    | R1LGMUSA  | r1lgmusa: w1 R Some difficulty-Large Muscle 0-4              | Cont  |
| 2    | R2LGMUSA  | r2lgmusa: w2 R Some difficulty-Large Muscle 0-4              | Cont  |
| 3    | R3LGMUSA  | r3lgmusa: w3 R Some difficulty-Large Muscle 0-4              | Cont  |
| 4    | R4LGMUSA  | r4lgmusa: w4 R Some difficulty-Large Muscle 0-4              | Cont  |
| 5    | R5LGMUSA  | r5lgmusa: w5 R Some difficulty-Large Muscle 0-4              | Cont  |
| 1    | S1LGMUSA  | s1lgmusa: w1 S Some difficulty-Large Muscle 0-4              | Cont  |
| 2    | S2LGMUSA  | s2lgmusa: w2 S Some difficulty-Large Muscle 0-4              | Cont  |
| 3    | S3LGMUSA  | s3lgmusa: w3 S Some difficulty-Large Muscle 0-4              | Cont  |
| 4    | S4LGMUSA  | s4lgmusa: w4 S Some difficulty-Large Muscle 0-4              | Cont  |
| 5    | S5LGMUSA  | s5lgmusa: w5 S Some difficulty-Large Muscle 0-4              | Cont  |
| 1    | R1LGMUSAM | r1lgmusam: w1 R Some difficulty-Missings in Large Muscle Sco | Cont  |
| 2    | R2LGMUSAM | r2lgmusam: w2 R Some difficulty-Missings in Large Muscle Sco | Cont  |
| 3    | R3LGMUSAM | r3lgmusam: w3 R Some difficulty-Missings in Large Muscle Sco | Cont  |
| 4    | R4LGMUSAM | r4lgmusam: w4 R Some difficulty-Missings in Large Muscle Sco | Cont  |
| 5    | R5LGMUSAM | r5lgmusam: w5 R Some difficulty-Missings in Large Muscle Sco | Cont  |
| 1    | S1LGMUSAM | s1lgmusam: w1 S Some difficulty-Missings in Large Muscle Sco | Cont  |
| 2    | S2LGMUSAM | s2lgmusam: w2 S Some difficulty-Missings in Large Muscle Sco | Cont  |
| 3    | S3LGMUSAM | s3lgmusam: w3 S Some difficulty-Missings in Large Muscle Sco | Cont  |

|   |           |               |   |  |       |
|---|-----------|---------------|---|--|-------|
| 4 | S4LGMUSAM | s4lgmusam: w4 | S | Some difficulty-Missings in Large Muscle Sco | Cont  |
| 5 | S5LGMUSAM | s5lgmusam: w5 | S | Some difficulty-Missings in Large Muscle Sco | Cont  |
| 1 | R1LGMUSAA | r1lgmusaa: w1 | R | Any difficulty Large Muscle 0-4              | Categ |
| 2 | R2LGMUSAA | r2lgmusaa: w2 | R | Any difficulty Large Muscle 0-4              | Categ |
| 3 | R3LGMUSAA | r3lgmusaa: w3 | R | Any difficulty Large Muscle 0-4              | Categ |
| 4 | R4LGMUSAA | r4lgmusaa: w4 | R | Any difficulty Large Muscle 0-4              | Categ |
| 5 | R5LGMUSAA | r5lgmusaa: w5 | R | Any difficulty Large Muscle 0-4              | Categ |
| 1 | S1LGMUSAA | s1lgmusaa: w1 | S | Any difficulty Large Muscle 0-4              | Categ |
| 2 | S2LGMUSAA | s2lgmusaa: w2 | S | Any difficulty Large Muscle 0-4              | Categ |
| 3 | S3LGMUSAA | s3lgmusaa: w3 | S | Any difficulty Large Muscle 0-4              | Categ |
| 4 | S4LGMUSAA | s4lgmusaa: w4 | S | Any difficulty Large Muscle 0-4              | Categ |
| 5 | S5LGMUSAA | s5lgmusaa: w5 | S | Any difficulty Large Muscle 0-4              | Categ |
| 1 | R1GROSSA  | r1grossa: w1  | R | Some difficulty-Gross Motor 0-5              | Cont  |
| 2 | R2GROSSA  | r2grossa: w2  | R | Some difficulty-Gross Motor 0-5              | Cont  |
| 3 | R3GROSSA  | r3grossa: w3  | R | Some difficulty-Gross Motor 0-5              | Cont  |
| 4 | R4GROSSA  | r4grossa: w4  | R | Some difficulty-Gross Motor 0-5              | Cont  |
| 5 | R5GROSSA  | r5grossa: w5  | R | Some difficulty-Gross Motor 0-5              | Cont  |
| 1 | S1GROSSA  | s1grossa: w1  | S | Some difficulty-Gross Motor 0-5              | Cont  |
| 2 | S2GROSSA  | s2grossa: w2  | S | Some difficulty-Gross Motor 0-5              | Cont  |
| 3 | S3GROSSA  | s3grossa: w3  | S | Some difficulty-Gross Motor 0-5              | Cont  |
| 4 | S4GROSSA  | s4grossa: w4  | S | Some difficulty-Gross Motor 0-5              | Cont  |
| 5 | S5GROSSA  | s5grossa: w5  | S | Some difficulty-Gross Motor 0-5              | Cont  |
| 1 | R1GROSSAM | r1grossam: w1 | R | Some difficulty-Missings in Gross Motor Scor | Cont  |
| 2 | R2GROSSAM | r2grossam: w2 | R | Some difficulty-Missings in Gross Motor Scor | Cont  |
| 3 | R3GROSSAM | r3grossam: w3 | R | Some difficulty-Missings in Gross Motor Scor | Cont  |
| 4 | R4GROSSAM | r4grossam: w4 | R | Some difficulty-Missings in Gross Motor Scor | Cont  |
| 5 | R5GROSSAM | r5grossam: w5 | R | Some difficulty-Missings in Gross Motor Scor | Cont  |
| 1 | S1GROSSAM | s1grossam: w1 | S | Some difficulty-Missings in Gross Motor Scor | Cont  |
| 2 | S2GROSSAM | s2grossam: w2 | S | Some difficulty-Missings in Gross Motor Scor | Cont  |
| 3 | S3GROSSAM | s3grossam: w3 | S | Some difficulty-Missings in Gross Motor Scor | Cont  |
| 4 | S4GROSSAM | s4grossam: w4 | S | Some difficulty-Missings in Gross Motor Scor | Cont  |
| 5 | S5GROSSAM | s5grossam: w5 | S | Some difficulty-Missings in Gross Motor Scor | Cont  |
| 1 | R1GROSSAA | r1grossaa: w1 | R | Any difficulty Gross Motor 0-5               | Categ |
| 2 | R2GROSSAA | r2grossaa: w2 | R | Any difficulty Gross Motor 0-5               | Categ |
| 3 | R3GROSSAA | r3grossaa: w3 | R | Any difficulty Gross Motor 0-5               | Categ |
| 4 | R4GROSSAA | r4grossaa: w4 | R | Any difficulty Gross Motor 0-5               | Categ |
| 5 | R5GROSSAA | r5grossaa: w5 | R | Any difficulty Gross Motor 0-5               | Categ |
| 1 | S1GROSSAA | s1grossaa: w1 | S | Any difficulty Gross Motor 0-5               | Categ |
| 2 | S2GROSSAA | s2grossaa: w2 | S | Any difficulty Gross Motor 0-5               | Categ |
| 3 | S3GROSSAA | s3grossaa: w3 | S | Any difficulty Gross Motor 0-5               | Categ |
| 4 | S4GROSSAA | s4grossaa: w4 | S | Any difficulty Gross Motor 0-5               | Categ |
| 5 | S5GROSSAA | s5grossaa: w5 | S | Any difficulty Gross Motor 0-5               | Categ |
| 1 | R1FINEA   | r1finea: w1   | R | Some difficulty-Fine Motor 0-3               | Cont  |
| 2 | R2FINEA   | r2finea: w2   | R | Some difficulty-Fine Motor 0-3               | Cont  |
| 3 | R3FINEA   | r3finea: w3   | R | Some difficulty-Fine Motor 0-3               | Cont  |
| 4 | R4FINEA   | r4finea: w4   | R | Some difficulty-Fine Motor 0-3               | Cont  |
| 5 | R5FINEA   | r5finea: w5   | R | Some difficulty-Fine Motor 0-3               | Cont  |
| 1 | S1FINEA   | s1finea: w1   | S | Some difficulty-Fine Motor 0-3               | Cont  |
| 2 | S2FINEA   | s2finea: w2   | S | Some difficulty-Fine Motor 0-3               | Cont  |
| 3 | S3FINEA   | s3finea: w3   | S | Some difficulty-Fine Motor 0-3               | Cont  |
| 4 | S4FINEA   | s4finea: w4   | S | Some difficulty-Fine Motor 0-3               | Cont  |
| 5 | S5FINEA   | s5finea: w5   | S | Some difficulty-Fine Motor 0-3               | Cont  |
| 1 | R1FINEAM  | r1fineam: w1  | R | Some difficulty-Missings in Fine Motor Score | Cont  |



|   |             |                 |   |  |       |
|---|-------------|-----------------|---|--|-------|
| 2 | R2FINEAM    | r2fineam: w2    | R | Some difficulty-Missings in Fine Motor Score | Cont  |
| 3 | R3FINEAM    | r3fineam: w3    | R | Some difficulty-Missings in Fine Motor Score | Cont  |
| 4 | R4FINEAM    | r4fineam: w4    | R | Some difficulty-Missings in Fine Motor Score | Cont  |
| 5 | R5FINEAM    | r5fineam: w5    | R | Some difficulty-Missings in Fine Motor Score | Cont  |
| 1 | S1FINEAM    | s1fineam: w1    | S | Some difficulty-Missings in Fine Motor Score | Cont  |
| 2 | S2FINEAM    | s2fineam: w2    | S | Some difficulty-Missings in Fine Motor Score | Cont  |
| 3 | S3FINEAM    | s3fineam: w3    | S | Some difficulty-Missings in Fine Motor Score | Cont  |
| 4 | S4FINEAM    | s4fineam: w4    | S | Some difficulty-Missings in Fine Motor Score | Cont  |
| 5 | S5FINEAM    | s5fineam: w5    | S | Some difficulty-Missings in Fine Motor Score | Cont  |
| 1 | R1FINEAA    | r1fineaa: w1    | R | Any difficulty Fine Motor 0-3                | Categ |
| 2 | R2FINEAA    | r2fineaa: w2    | R | Any difficulty Fine Motor 0-3                | Categ |
| 3 | R3FINEAA    | r3fineaa: w3    | R | Any difficulty Fine Motor 0-3                | Categ |
| 4 | R4FINEAA    | r4fineaa: w4    | R | Any difficulty Fine Motor 0-3                | Categ |
| 5 | R5FINEAA    | r5fineaa: w5    | R | Any difficulty Fine Motor 0-3                | Categ |
| 1 | S1FINEAA    | s1fineaa: w1    | S | Any difficulty Fine Motor 0-3                | Categ |
| 2 | S2FINEAA    | s2fineaa: w2    | S | Any difficulty Fine Motor 0-3                | Categ |
| 3 | S3FINEAA    | s3fineaa: w3    | S | Any difficulty Fine Motor 0-3                | Categ |
| 4 | S4FINEAA    | s4fineaa: w4    | S | Any difficulty Fine Motor 0-3                | Categ |
| 5 | S5FINEAA    | s5fineaa: w5    | S | Any difficulty Fine Motor 0-3                | Categ |
| 1 | R1MOBILSEV  | r1mobilsev: w1  | R | Some difficulty-7 item Mobility 0-7          | Cont  |
| 2 | R2MOBILSEV  | r2mobilsev: w2  | R | Some difficulty-7 item Mobility 0-7          | Cont  |
| 3 | R3MOBILSEV  | r3mobilsev: w3  | R | Some difficulty-7 item Mobility 0-7          | Cont  |
| 4 | R4MOBILSEV  | r4mobilsev: w4  | R | Some difficulty-7 item Mobility 0-7          | Cont  |
| 5 | R5MOBILSEV  | r5mobilsev: w5  | R | Some difficulty-7 item Mobility 0-7          | Cont  |
| 1 | S1MOBILSEV  | s1mobilsev: w1  | S | Some difficulty-7 item Mobility 0-7          | Cont  |
| 2 | S2MOBILSEV  | s2mobilsev: w2  | S | Some difficulty-7 item Mobility 0-7          | Cont  |
| 3 | S3MOBILSEV  | s3mobilsev: w3  | S | Some difficulty-7 item Mobility 0-7          | Cont  |
| 4 | S4MOBILSEV  | s4mobilsev: w4  | S | Some difficulty-7 item Mobility 0-7          | Cont  |
| 5 | S5MOBILSEV  | s5mobilsev: w5  | S | Some difficulty-7 item Mobility 0-7          | Cont  |
| 1 | R1MOBILSEVM | r1mobilsevm: w1 | R | Some difficulty-Missings in 7 item Mobilit   | Cont  |
| 2 | R2MOBILSEVM | r2mobilsevm: w2 | R | Some difficulty-Missings in 7 item Mobilit   | Cont  |
| 3 | R3MOBILSEVM | r3mobilsevm: w3 | R | Some difficulty-Missings in 7 item Mobilit   | Cont  |
| 4 | R4MOBILSEVM | r4mobilsevm: w4 | R | Some difficulty-Missings in 7 item Mobilit   | Cont  |
| 5 | R5MOBILSEVM | r5mobilsevm: w5 | R | Some difficulty-Missings in 7 item Mobilit   | Cont  |
| 1 | S1MOBILSEVM | s1mobilsevm: w1 | S | Some difficulty-Missings in 7 item Mobilit   | Cont  |
| 2 | S2MOBILSEVM | s2mobilsevm: w2 | S | Some difficulty-Missings in 7 item Mobilit   | Cont  |
| 3 | S3MOBILSEVM | s3mobilsevm: w3 | S | Some difficulty-Missings in 7 item Mobilit   | Cont  |
| 4 | S4MOBILSEVM | s4mobilsevm: w4 | S | Some difficulty-Missings in 7 item Mobilit   | Cont  |
| 5 | S5MOBILSEVM | s5mobilsevm: w5 | S | Some difficulty-Missings in 7 item Mobilit   | Cont  |
| 1 | R1MOBILSEVA | r1mobilseva: w1 | R | Any difficulty Mobility 0-7                  | Categ |
| 2 | R2MOBILSEVA | r2mobilseva: w2 | R | Any difficulty Mobility 0-7                  | Categ |
| 3 | R3MOBILSEVA | r3mobilseva: w3 | R | Any difficulty Mobility 0-7                  | Categ |
| 4 | R4MOBILSEVA | r4mobilseva: w4 | R | Any difficulty Mobility 0-7                  | Categ |
| 5 | R5MOBILSEVA | r5mobilseva: w5 | R | Any difficulty Mobility 0-7                  | Categ |
| 1 | S1MOBILSEVA | s1mobilseva: w1 | S | Any difficulty Mobility 0-7                  | Categ |
| 2 | S2MOBILSEVA | s2mobilseva: w2 | S | Any difficulty Mobility 0-7                  | Categ |
| 3 | S3MOBILSEVA | s3mobilseva: w3 | S | Any difficulty Mobility 0-7                  | Categ |
| 4 | S4MOBILSEVA | s4mobilseva: w4 | S | Any difficulty Mobility 0-7                  | Categ |
| 5 | S5MOBILSEVA | s5mobilseva: w5 | S | Any difficulty Mobility 0-7                  | Categ |
| 1 | R1UPPERMOB  | r1uppermob: w1  | R | Some difficulty-Upper Body Mobility 0-3      | Cont  |
| 2 | R2UPPERMOB  | r2uppermob: w2  | R | Some difficulty-Upper Body Mobility 0-3      | Cont  |
| 3 | R3UPPERMOB  | r3uppermob: w3  | R | Some difficulty-Upper Body Mobility 0-3      | Cont  |
| 4 | R4UPPERMOB  | r4uppermob: w4  | R | Some difficulty-Upper Body Mobility 0-3      | Cont  |
| 5 | R5UPPERMOB  | r5uppermob: w5  | R | Some difficulty-Upper Body Mobility 0-3      | Cont  |

|   |             |  |       |
|---|-------------|--|-------|
| 1 | S1UPPERMOB  | s1uppermob: w1 S Some difficulty-Upper Body Mobility 0-3     | Cont  |
| 2 | S2UPPERMOB  | s2uppermob: w2 S Some difficulty-Upper Body Mobility 0-3     | Cont  |
| 3 | S3UPPERMOB  | s3uppermob: w3 S Some difficulty-Upper Body Mobility 0-3     | Cont  |
| 4 | S4UPPERMOB  | s4uppermob: w4 S Some difficulty-Upper Body Mobility 0-3     | Cont  |
| 5 | S5UPPERMOB  | s5uppermob: w5 S Some difficulty-Upper Body Mobility 0-3     | Cont  |
| 1 | R1UPPERMOBM | r1uppermobm: w1 R Some difficulty-Missings in Upper Body Mob | Cont  |
| 2 | R2UPPERMOBM | r2uppermobm: w2 R Some difficulty-Missings in Upper Body Mob | Cont  |
| 3 | R3UPPERMOBM | r3uppermobm: w3 R Some difficulty-Missings in Upper Body Mob | Cont  |
| 4 | R4UPPERMOBM | r4uppermobm: w4 R Some difficulty-Missings in Upper Body Mob | Cont  |
| 5 | R5UPPERMOBM | r5uppermobm: w5 R Some difficulty-Missings in Upper Body Mob | Cont  |
| 1 | S1UPPERMOBM | s1uppermobm: w1 S Some difficulty-Missings in Upper Body Mob | Cont  |
| 2 | S2UPPERMOBM | s2uppermobm: w2 S Some difficulty-Missings in Upper Body Mob | Cont  |
| 3 | S3UPPERMOBM | s3uppermobm: w3 S Some difficulty-Missings in Upper Body Mob | Cont  |
| 4 | S4UPPERMOBM | s4uppermobm: w4 S Some difficulty-Missings in Upper Body Mob | Cont  |
| 5 | S5UPPERMOBM | s5uppermobm: w5 S Some difficulty-Missings in Upper Body Mob | Cont  |
| 1 | R1UPPERMOBA | r1uppermoba: w1 R Any difficulty Upper Body Mobility 0-3     | Categ |
| 2 | R2UPPERMOBA | r2uppermoba: w2 R Any difficulty Upper Body Mobility 0-3     | Categ |
| 3 | R3UPPERMOBA | r3uppermoba: w3 R Any difficulty Upper Body Mobility 0-3     | Categ |
| 4 | R4UPPERMOBA | r4uppermoba: w4 R Any difficulty Upper Body Mobility 0-3     | Categ |
| 5 | R5UPPERMOBA | r5uppermoba: w5 R Any difficulty Upper Body Mobility 0-3     | Categ |
| 1 | S1UPPERMOBA | s1uppermoba: w1 S Any difficulty Upper Body Mobility 0-3     | Categ |
| 2 | S2UPPERMOBA | s2uppermoba: w2 S Any difficulty Upper Body Mobility 0-3     | Categ |
| 3 | S3UPPERMOBA | s3uppermoba: w3 S Any difficulty Upper Body Mobility 0-3     | Categ |
| 4 | S4UPPERMOBA | s4uppermoba: w4 S Any difficulty Upper Body Mobility 0-3     | Categ |
| 5 | S5UPPERMOBA | s5uppermoba: w5 S Any difficulty Upper Body Mobility 0-3     | Categ |
| 1 | R1LOWERMOb  | r1lowermob: w1 R Some difficulty-Lower Body Mobility 0-4     | Cont  |
| 2 | R2LOWERMOb  | r2lowermob: w2 R Some difficulty-Lower Body Mobility 0-4     | Cont  |
| 3 | R3LOWERMOb  | r3lowermob: w3 R Some difficulty-Lower Body Mobility 0-4     | Cont  |
| 4 | R4LOWERMOb  | r4lowermob: w4 R Some difficulty-Lower Body Mobility 0-4     | Cont  |
| 5 | R5LOWERMOb  | r5lowermob: w5 R Some difficulty-Lower Body Mobility 0-4     | Cont  |
| 1 | S1LOWERMOb  | s1lowermob: w1 S Some difficulty-Lower Body Mobility 0-4     | Cont  |
| 2 | S2LOWERMOb  | s2lowermob: w2 S Some difficulty-Lower Body Mobility 0-4     | Cont  |
| 3 | S3LOWERMOb  | s3lowermob: w3 S Some difficulty-Lower Body Mobility 0-4     | Cont  |
| 4 | S4LOWERMOb  | s4lowermob: w4 S Some difficulty-Lower Body Mobility 0-4     | Cont  |
| 5 | S5LOWERMOb  | s5lowermob: w5 S Some difficulty-Lower Body Mobility 0-4     | Cont  |
| 1 | R1LOWERMObM | r1lowermobm: w1 R Some difficulty-Missings in Lower Body Mob | Cont  |
| 2 | R2LOWERMObM | r2lowermobm: w2 R Some difficulty-Missings in Lower Body Mob | Cont  |
| 3 | R3LOWERMObM | r3lowermobm: w3 R Some difficulty-Missings in Lower Body Mob | Cont  |
| 4 | R4LOWERMObM | r4lowermobm: w4 R Some difficulty-Missings in Lower Body Mob | Cont  |
| 5 | R5LOWERMObM | r5lowermobm: w5 R Some difficulty-Missings in Lower Body Mob | Cont  |
| 1 | S1LOWERMObM | s1lowermobm: w1 S Some difficulty-Missings in Lower Body Mob | Cont  |
| 2 | S2LOWERMObM | s2lowermobm: w2 S Some difficulty-Missings in Lower Body Mob | Cont  |
| 3 | S3LOWERMObM | s3lowermobm: w3 S Some difficulty-Missings in Lower Body Mob | Cont  |
| 4 | S4LOWERMObM | s4lowermobm: w4 S Some difficulty-Missings in Lower Body Mob | Cont  |
| 5 | S5LOWERMObM | s5lowermobm: w5 S Some difficulty-Missings in Lower Body Mob | Cont  |
| 1 | R1LOWERMObA | r1lowermoba: w1 R Any difficulty Lower Body Mobility 0-4     | Categ |
| 2 | R2LOWERMObA | r2lowermoba: w2 R Any difficulty Lower Body Mobility 0-4     | Categ |
| 3 | R3LOWERMObA | r3lowermoba: w3 R Any difficulty Lower Body Mobility 0-4     | Categ |
| 4 | R4LOWERMObA | r4lowermoba: w4 R Any difficulty Lower Body Mobility 0-4     | Categ |
| 5 | R5LOWERMObA | r5lowermoba: w5 R Any difficulty Lower Body Mobility 0-4     | Categ |
| 1 | S1LOWERMObA | s1lowermoba: w1 S Any difficulty Lower Body Mobility 0-4     | Categ |
| 2 | S2LOWERMObA | s2lowermoba: w2 S Any difficulty Lower Body Mobility 0-4     | Categ |
| 3 | S3LOWERMObA | s3lowermoba: w3 S Any difficulty Lower Body Mobility 0-4     | Categ |

|   |             |  |       |
|---|-------------|--|-------|
| 4 | S4LOWERMOBA | s4lowermoba: w4 S Any difficulty Lower Body Mobility 0-4     | Categ |
| 5 | S5LOWERMOBA | s5lowermoba: w5 S Any difficulty Lower Body Mobility 0-4     | Categ |
| 1 | R1NAGI10    | r1nagi10: w1 R Some difficulty-NAGI Score 0-10               | Cont  |
| 2 | R2NAGI10    | r2nagi10: w2 R Some difficulty-NAGI Score 0-10               | Cont  |
| 3 | R3NAGI10    | r3nagi10: w3 R Some difficulty-NAGI Score 0-10               | Cont  |
| 4 | R4NAGI10    | r4nagi10: w4 R Some difficulty-NAGI Score 0-10               | Cont  |
| 5 | R5NAGI10    | r5nagi10: w5 R Some difficulty-NAGI Score 0-10               | Cont  |
| 1 | S1NAGI10    | s1nagi10: w1 S Some difficulty-NAGI Score 0-10               | Cont  |
| 2 | S2NAGI10    | s2nagi10: w2 S Some difficulty-NAGI Score 0-10               | Cont  |
| 3 | S3NAGI10    | s3nagi10: w3 S Some difficulty-NAGI Score 0-10               | Cont  |
| 4 | S4NAGI10    | s4nagi10: w4 S Some difficulty-NAGI Score 0-10               | Cont  |
| 5 | S5NAGI10    | s5nagi10: w5 S Some difficulty-NAGI Score 0-10               | Cont  |
| 1 | R1NAGI10M   | r1nagi10m: w1 R Some difficulty-Missings in 10-item NAGI Sco | Cont  |
| 2 | R2NAGI10M   | r2nagi10m: w2 R Some difficulty-Missings in 10-item NAGI Sco | Cont  |
| 3 | R3NAGI10M   | r3nagi10m: w3 R Some difficulty-Missings in 10-item NAGI Sco | Cont  |
| 4 | R4NAGI10M   | r4nagi10m: w4 R Some difficulty-Missings in 10-item NAGI Sco | Cont  |
| 5 | R5NAGI10M   | r5nagi10m: w5 R Some difficulty-Missings in 10-item NAGI Sco | Cont  |
| 1 | S1NAGI10M   | s1nagi10m: w1 S Some difficulty-Missings in 10-item NAGI Sco | Cont  |
| 2 | S2NAGI10M   | s2nagi10m: w2 S Some difficulty-Missings in 10-item NAGI Sco | Cont  |
| 3 | S3NAGI10M   | s3nagi10m: w3 S Some difficulty-Missings in 10-item NAGI Sco | Cont  |
| 4 | S4NAGI10M   | s4nagi10m: w4 S Some difficulty-Missings in 10-item NAGI Sco | Cont  |
| 5 | S5NAGI10M   | s5nagi10m: w5 S Some difficulty-Missings in 10-item NAGI Sco | Cont  |
| 1 | R1NAGI10A   | r1nagi10a: w1 R Any difficulty NAGI Score 0-10               | Categ |
| 2 | R2NAGI10A   | r2nagi10a: w2 R Any difficulty NAGI Score 0-10               | Categ |
| 3 | R3NAGI10A   | r3nagi10a: w3 R Any difficulty NAGI Score 0-10               | Categ |
| 4 | R4NAGI10A   | r4nagi10a: w4 R Any difficulty NAGI Score 0-10               | Categ |
| 5 | R5NAGI10A   | r5nagi10a: w5 R Any difficulty NAGI Score 0-10               | Categ |
| 1 | S1NAGI10A   | s1nagi10a: w1 S Any difficulty NAGI Score 0-10               | Categ |
| 2 | S2NAGI10A   | s2nagi10a: w2 S Any difficulty NAGI Score 0-10               | Categ |
| 3 | S3NAGI10A   | s3nagi10a: w3 S Any difficulty NAGI Score 0-10               | Categ |
| 4 | S4NAGI10A   | s4nagi10a: w4 S Any difficulty NAGI Score 0-10               | Categ |
| 5 | S5NAGI10A   | s5nagi10a: w5 S Any difficulty NAGI Score 0-10               | Categ |
| 1 | R1NAGI8     | r1nagi8: w1 R Some difficulty-NAGI Score 0-8                 | Cont  |
| 2 | R2NAGI8     | r2nagi8: w2 R Some difficulty-NAGI Score 0-8                 | Cont  |
| 3 | R3NAGI8     | r3nagi8: w3 R Some difficulty-NAGI Score 0-8                 | Cont  |
| 4 | R4NAGI8     | r4nagi8: w4 R Some difficulty-NAGI Score 0-8                 | Cont  |
| 5 | R5NAGI8     | r5nagi8: w5 R Some difficulty-NAGI Score 0-8                 | Cont  |
| 1 | S1NAGI8     | s1nagi8: w1 S Some difficulty-NAGI Score 0-8                 | Cont  |
| 2 | S2NAGI8     | s2nagi8: w2 S Some difficulty-NAGI Score 0-8                 | Cont  |
| 3 | S3NAGI8     | s3nagi8: w3 S Some difficulty-NAGI Score 0-8                 | Cont  |
| 4 | S4NAGI8     | s4nagi8: w4 S Some difficulty-NAGI Score 0-8                 | Cont  |
| 5 | S5NAGI8     | s5nagi8: w5 S Some difficulty-NAGI Score 0-8                 | Cont  |
| 1 | R1NAGI8M    | r1nagi8m: w1 R Some difficulty-Missings in 8-item NAGI Score | Cont  |
| 2 | R2NAGI8M    | r2nagi8m: w2 R Some difficulty-Missings in 8-item NAGI Score | Cont  |
| 3 | R3NAGI8M    | r3nagi8m: w3 R Some difficulty-Missings in 8-item NAGI Score | Cont  |
| 4 | R4NAGI8M    | r4nagi8m: w4 R Some difficulty-Missings in 8-item NAGI Score | Cont  |
| 5 | R5NAGI8M    | r5nagi8m: w5 R Some difficulty-Missings in 8-item NAGI Score | Cont  |
| 1 | S1NAGI8M    | s1nagi8m: w1 S Some difficulty-Missings in 8-item NAGI Score | Cont  |
| 2 | S2NAGI8M    | s2nagi8m: w2 S Some difficulty-Missings in 8-item NAGI Score | Cont  |
| 3 | S3NAGI8M    | s3nagi8m: w3 S Some difficulty-Missings in 8-item NAGI Score | Cont  |
| 4 | S4NAGI8M    | s4nagi8m: w4 S Some difficulty-Missings in 8-item NAGI Score | Cont  |
| 5 | S5NAGI8M    | s5nagi8m: w5 S Some difficulty-Missings in 8-item NAGI Score | Cont  |
| 1 | R1NAGI8A    | r1nagi8a: w1 R Any difficulty NAGI Score 0-8                 | Categ |

|   |          |  |       |
|---|----------|--|-------|
| 2 | R2NAGI8A | r2nagi8a: w2 R Any difficulty NAGI Score 0-8 | Categ |
| 3 | R3NAGI8A | r3nagi8a: w3 R Any difficulty NAGI Score 0-8 | Categ |
| 4 | R4NAGI8A | r4nagi8a: w4 R Any difficulty NAGI Score 0-8 | Categ |
| 5 | R5NAGI8A | r5nagi8a: w5 R Any difficulty NAGI Score 0-8 | Categ |
| 1 | S1NAGI8A | s1nagi8a: w1 S Any difficulty NAGI Score 0-8 | Categ |
| 2 | S2NAGI8A | s2nagi8a: w2 S Any difficulty NAGI Score 0-8 | Categ |
| 3 | S3NAGI8A | s3nagi8a: w3 S Any difficulty NAGI Score 0-8 | Categ |
| 4 | S4NAGI8A | s4nagi8a: w4 S Any difficulty NAGI Score 0-8 | Categ |
| 5 | S5NAGI8A | s5nagi8a: w5 S Any difficulty NAGI Score 0-8 | Categ |

Descriptive Statistics

| Variable  | N     | Mean | Std Dev | Minimum | Maximum |
|-----------|-------|------|---------|---------|---------|
| R1MOBILA  | 14113 | 0.95 | 1.37    | 0.00    | 5.00    |
| R2MOBILA  | 12500 | 0.94 | 1.39    | 0.00    | 5.00    |
| R3MOBILA  | 14446 | 1.08 | 1.46    | 0.00    | 5.00    |
| R4MOBILA  | 13801 | 1.18 | 1.51    | 0.00    | 5.00    |
| R5MOBILA  | 15766 | 1.08 | 1.50    | 0.00    | 5.00    |
| S1MOBILA  | 9973  | 0.85 | 1.30    | 0.00    | 5.00    |
| S2MOBILA  | 8737  | 0.83 | 1.29    | 0.00    | 5.00    |
| S3MOBILA  | 9865  | 0.96 | 1.39    | 0.00    | 5.00    |
| S4MOBILA  | 9166  | 1.05 | 1.43    | 0.00    | 5.00    |
| S5MOBILA  | 7067  | 1.14 | 1.51    | 0.00    | 5.00    |
| R1MOBILAM | 15186 | 0.46 | 1.10    | 0.00    | 5.00    |
| R2MOBILAM | 13704 | 0.51 | 1.19    | 0.00    | 5.00    |
| R3MOBILAM | 15723 | 0.45 | 1.15    | 0.00    | 5.00    |
| R4MOBILAM | 14779 | 0.39 | 1.08    | 0.00    | 5.00    |
| R5MOBILAM | 17114 | 0.38 | 1.13    | 0.00    | 5.00    |
| S1MOBILAM | 10648 | 0.43 | 1.05    | 0.00    | 5.00    |
| S2MOBILAM | 9564  | 0.49 | 1.17    | 0.00    | 5.00    |
| S3MOBILAM | 10592 | 0.40 | 1.08    | 0.00    | 5.00    |
| S4MOBILAM | 9652  | 0.31 | 0.95    | 0.00    | 5.00    |
| S5MOBILAM | 7638  | 0.36 | 1.11    | 0.00    | 5.00    |
| R1MOBILAA | 14113 | 0.43 | 0.50    | 0.00    | 1.00    |
| R2MOBILAA | 12500 | 0.42 | 0.49    | 0.00    | 1.00    |
| R3MOBILAA | 14446 | 0.46 | 0.50    | 0.00    | 1.00    |
| R4MOBILAA | 13801 | 0.50 | 0.50    | 0.00    | 1.00    |
| R5MOBILAA | 15766 | 0.45 | 0.50    | 0.00    | 1.00    |
| S1MOBILAA | 9973  | 0.40 | 0.49    | 0.00    | 1.00    |
| S2MOBILAA | 8737  | 0.39 | 0.49    | 0.00    | 1.00    |
| S3MOBILAA | 9865  | 0.42 | 0.49    | 0.00    | 1.00    |
| S4MOBILAA | 9166  | 0.46 | 0.50    | 0.00    | 1.00    |
| S5MOBILAA | 7067  | 0.47 | 0.50    | 0.00    | 1.00    |
| R1LGMUSA  | 14109 | 0.99 | 1.32    | 0.00    | 4.00    |
| R2LGMUSA  | 12501 | 0.91 | 1.28    | 0.00    | 4.00    |
| R3LGMUSA  | 14446 | 1.15 | 1.35    | 0.00    | 4.00    |
| R4LGMUSA  | 13804 | 1.26 | 1.38    | 0.00    | 4.00    |
| R5LGMUSA  | 15764 | 1.16 | 1.37    | 0.00    | 4.00    |
| S1LGMUSA  | 9970  | 0.90 | 1.27    | 0.00    | 4.00    |
| S2LGMUSA  | 8737  | 0.82 | 1.23    | 0.00    | 4.00    |
| S3LGMUSA  | 9865  | 1.05 | 1.31    | 0.00    | 4.00    |
| S4LGMUSA  | 9167  | 1.18 | 1.35    | 0.00    | 4.00    |
| S5LGMUSA  | 7066  | 1.21 | 1.38    | 0.00    | 4.00    |
| R1LGMUSAM | 15186 | 0.31 | 1.03    | 0.00    | 4.00    |

|           |       |      |      |      |      |
|-----------|-------|------|------|------|------|
| R2LGMUSAM | 13704 | 0.38 | 1.14 | 0.00 | 4.00 |
| R3LGMUSAM | 15723 | 0.35 | 1.10 | 0.00 | 4.00 |
| R4LGMUSAM | 14779 | 0.30 | 1.00 | 0.00 | 4.00 |
| R5LGMUSAM | 17114 | 0.33 | 1.08 | 0.00 | 4.00 |
| S1LGMUSAM | 10648 | 0.28 | 0.98 | 0.00 | 4.00 |
| S2LGMUSAM | 9564  | 0.37 | 1.13 | 0.00 | 4.00 |
| S3LGMUSAM | 10592 | 0.30 | 1.02 | 0.00 | 4.00 |
| S4LGMUSAM | 9652  | 0.23 | 0.88 | 0.00 | 4.00 |
| S5LGMUSAM | 7638  | 0.32 | 1.06 | 0.00 | 4.00 |
| R1LGMUSAA | 14109 | 0.45 | 0.50 | 0.00 | 1.00 |
| R2LGMUSAA | 12501 | 0.42 | 0.49 | 0.00 | 1.00 |
| R3LGMUSAA | 14446 | 0.52 | 0.50 | 0.00 | 1.00 |
| R4LGMUSAA | 13804 | 0.57 | 0.50 | 0.00 | 1.00 |
| R5LGMUSAA | 15764 | 0.51 | 0.50 | 0.00 | 1.00 |
| S1LGMUSAA | 9970  | 0.41 | 0.49 | 0.00 | 1.00 |
| S2LGMUSAA | 8737  | 0.39 | 0.49 | 0.00 | 1.00 |
| S3LGMUSAA | 9865  | 0.49 | 0.50 | 0.00 | 1.00 |
| S4LGMUSAA | 9167  | 0.54 | 0.50 | 0.00 | 1.00 |
| S5LGMUSAA | 7066  | 0.54 | 0.50 | 0.00 | 1.00 |
| R1GROSSA  | 14113 | 0.41 | 0.94 | 0.00 | 5.00 |
| R2GROSSA  | 12501 | 0.42 | 0.94 | 0.00 | 5.00 |
| R3GROSSA  | 14446 | 0.51 | 1.00 | 0.00 | 5.00 |
| R4GROSSA  | 13804 | 0.59 | 1.11 | 0.00 | 5.00 |
| R5GROSSA  | 15766 | 0.52 | 1.05 | 0.00 | 5.00 |
| S1GROSSA  | 9973  | 0.35 | 0.86 | 0.00 | 5.00 |
| S2GROSSA  | 8737  | 0.34 | 0.84 | 0.00 | 5.00 |
| S3GROSSA  | 9865  | 0.43 | 0.92 | 0.00 | 5.00 |
| S4GROSSA  | 9167  | 0.50 | 1.02 | 0.00 | 5.00 |
| S5GROSSA  | 7067  | 0.54 | 1.06 | 0.00 | 5.00 |
| R1GROSSAM | 15186 | 0.23 | 0.68 | 0.00 | 5.00 |
| R2GROSSAM | 13704 | 0.22 | 0.64 | 0.00 | 5.00 |
| R3GROSSAM | 15723 | 0.22 | 0.60 | 0.00 | 5.00 |
| R4GROSSAM | 14779 | 0.18 | 0.59 | 0.00 | 5.00 |
| R5GROSSAM | 17114 | 0.19 | 0.65 | 0.00 | 5.00 |
| S1GROSSAM | 10648 | 0.21 | 0.64 | 0.00 | 5.00 |
| S2GROSSAM | 9564  | 0.21 | 0.61 | 0.00 | 5.00 |
| S3GROSSAM | 10592 | 0.19 | 0.57 | 0.00 | 5.00 |
| S4GROSSAM | 9652  | 0.14 | 0.50 | 0.00 | 5.00 |
| S5GROSSAM | 7638  | 0.19 | 0.67 | 0.00 | 5.00 |
| R1GROSSAA | 14113 | 0.23 | 0.42 | 0.00 | 1.00 |
| R2GROSSAA | 12501 | 0.23 | 0.42 | 0.00 | 1.00 |
| R3GROSSAA | 14446 | 0.28 | 0.45 | 0.00 | 1.00 |
| R4GROSSAA | 13804 | 0.30 | 0.46 | 0.00 | 1.00 |
| R5GROSSAA | 15766 | 0.27 | 0.44 | 0.00 | 1.00 |
| S1GROSSAA | 9973  | 0.20 | 0.40 | 0.00 | 1.00 |
| S2GROSSAA | 8737  | 0.20 | 0.40 | 0.00 | 1.00 |
| S3GROSSAA | 9865  | 0.25 | 0.43 | 0.00 | 1.00 |
| S4GROSSAA | 9167  | 0.27 | 0.44 | 0.00 | 1.00 |
| S5GROSSAA | 7067  | 0.28 | 0.45 | 0.00 | 1.00 |
| R1FINEA   | 14113 | 0.13 | 0.45 | 0.00 | 3.00 |
| R2FINEA   | 12501 | 0.13 | 0.45 | 0.00 | 3.00 |
| R3FINEA   | 14446 | 0.19 | 0.51 | 0.00 | 3.00 |
| R4FINEA   | 13804 | 0.21 | 0.54 | 0.00 | 3.00 |
| R5FINEA   | 15762 | 0.20 | 0.54 | 0.00 | 3.00 |

|             |       |      |      |      |      |
|-------------|-------|------|------|------|------|
| S1FINEA     | 9974  | 0.11 | 0.41 | 0.00 | 3.00 |
| S2FINEA     | 8737  | 0.11 | 0.40 | 0.00 | 3.00 |
| S3FINEA     | 9865  | 0.16 | 0.48 | 0.00 | 3.00 |
| S4FINEA     | 9167  | 0.18 | 0.50 | 0.00 | 3.00 |
| S5FINEA     | 7065  | 0.21 | 0.54 | 0.00 | 3.00 |
| R1FINEAM    | 15186 | 0.16 | 0.54 | 0.00 | 3.00 |
| R2FINEAM    | 13704 | 0.18 | 0.58 | 0.00 | 3.00 |
| R3FINEAM    | 15723 | 0.17 | 0.55 | 0.00 | 3.00 |
| R4FINEAM    | 14779 | 0.14 | 0.51 | 0.00 | 3.00 |
| R5FINEAM    | 17114 | 0.17 | 0.57 | 0.00 | 3.00 |
| S1FINEAM    | 10648 | 0.15 | 0.51 | 0.00 | 3.00 |
| S2FINEAM    | 9564  | 0.18 | 0.57 | 0.00 | 3.00 |
| S3FINEAM    | 10592 | 0.14 | 0.51 | 0.00 | 3.00 |
| S4FINEAM    | 9652  | 0.10 | 0.45 | 0.00 | 3.00 |
| S5FINEAM    | 7638  | 0.16 | 0.56 | 0.00 | 3.00 |
| R1FINEAA    | 14113 | 0.10 | 0.29 | 0.00 | 1.00 |
| R2FINEAA    | 12501 | 0.09 | 0.29 | 0.00 | 1.00 |
| R3FINEAA    | 14446 | 0.14 | 0.35 | 0.00 | 1.00 |
| R4FINEAA    | 13804 | 0.15 | 0.36 | 0.00 | 1.00 |
| R5FINEAA    | 15762 | 0.14 | 0.35 | 0.00 | 1.00 |
| S1FINEAA    | 9974  | 0.08 | 0.27 | 0.00 | 1.00 |
| S2FINEAA    | 8737  | 0.08 | 0.27 | 0.00 | 1.00 |
| S3FINEAA    | 9865  | 0.12 | 0.33 | 0.00 | 1.00 |
| S4FINEAA    | 9167  | 0.14 | 0.34 | 0.00 | 1.00 |
| S5FINEAA    | 7065  | 0.15 | 0.36 | 0.00 | 1.00 |
| R1MOBILSEV  | 14110 | 1.45 | 1.81 | 0.00 | 7.00 |
| R2MOBILSEV  | 12501 | 1.37 | 1.80 | 0.00 | 7.00 |
| R3MOBILSEV  | 14446 | 1.68 | 1.89 | 0.00 | 7.00 |
| R4MOBILSEV  | 13804 | 1.85 | 1.93 | 0.00 | 7.00 |
| R5MOBILSEV  | 15764 | 1.72 | 1.98 | 0.00 | 7.00 |
| S1MOBILSEV  | 9970  | 1.30 | 1.73 | 0.00 | 7.00 |
| S2MOBILSEV  | 8737  | 1.22 | 1.69 | 0.00 | 7.00 |
| S3MOBILSEV  | 9865  | 1.51 | 1.82 | 0.00 | 7.00 |
| S4MOBILSEV  | 9167  | 1.68 | 1.85 | 0.00 | 7.00 |
| S5MOBILSEV  | 7066  | 1.79 | 1.98 | 0.00 | 7.00 |
| R1MOBILSEVM | 15186 | 0.64 | 1.80 | 0.00 | 7.00 |
| R2MOBILSEVM | 13704 | 0.75 | 1.98 | 0.00 | 7.00 |
| R3MOBILSEVM | 15723 | 0.67 | 1.91 | 0.00 | 7.00 |
| R4MOBILSEVM | 14779 | 0.57 | 1.75 | 0.00 | 7.00 |
| R5MOBILSEVM | 17114 | 0.61 | 1.89 | 0.00 | 7.00 |
| S1MOBILSEVM | 10648 | 0.59 | 1.72 | 0.00 | 7.00 |
| S2MOBILSEVM | 9564  | 0.73 | 1.96 | 0.00 | 7.00 |
| S3MOBILSEVM | 10592 | 0.57 | 1.77 | 0.00 | 7.00 |
| S4MOBILSEVM | 9652  | 0.44 | 1.54 | 0.00 | 7.00 |
| S5MOBILSEVM | 7638  | 0.58 | 1.85 | 0.00 | 7.00 |
| R1MOBILSEVA | 14110 | 0.53 | 0.50 | 0.00 | 1.00 |
| R2MOBILSEVA | 12501 | 0.50 | 0.50 | 0.00 | 1.00 |
| R3MOBILSEVA | 14446 | 0.59 | 0.49 | 0.00 | 1.00 |
| R4MOBILSEVA | 13804 | 0.63 | 0.48 | 0.00 | 1.00 |
| R5MOBILSEVA | 15764 | 0.57 | 0.50 | 0.00 | 1.00 |
| S1MOBILSEVA | 9970  | 0.49 | 0.50 | 0.00 | 1.00 |
| S2MOBILSEVA | 8737  | 0.47 | 0.50 | 0.00 | 1.00 |
| S3MOBILSEVA | 9865  | 0.55 | 0.50 | 0.00 | 1.00 |

|             |       |      |      |      |      |
|-------------|-------|------|------|------|------|
| S4MOBILSEVA | 9167  | 0.60 | 0.49 | 0.00 | 1.00 |
| S5MOBILSEVA | 7066  | 0.60 | 0.49 | 0.00 | 1.00 |
| R1UPPERMOB  | 14105 | 0.35 | 0.70 | 0.00 | 3.00 |
| R2UPPERMOB  | 12501 | 0.34 | 0.70 | 0.00 | 3.00 |
| R3UPPERMOB  | 14446 | 0.44 | 0.76 | 0.00 | 3.00 |
| R4UPPERMOB  | 13803 | 0.48 | 0.78 | 0.00 | 3.00 |
| R5UPPERMOB  | 15756 | 0.46 | 0.80 | 0.00 | 3.00 |
| S1UPPERMOB  | 9968  | 0.29 | 0.66 | 0.00 | 3.00 |
| S2UPPERMOB  | 8737  | 0.28 | 0.65 | 0.00 | 3.00 |
| S3UPPERMOB  | 9865  | 0.38 | 0.72 | 0.00 | 3.00 |
| S4UPPERMOB  | 9166  | 0.41 | 0.73 | 0.00 | 3.00 |
| S5UPPERMOB  | 7064  | 0.47 | 0.81 | 0.00 | 3.00 |
| R1UPPERMOBM | 15186 | 0.23 | 0.78 | 0.00 | 3.00 |
| R2UPPERMOBM | 13704 | 0.28 | 0.85 | 0.00 | 3.00 |
| R3UPPERMOBM | 15723 | 0.26 | 0.82 | 0.00 | 3.00 |
| R4UPPERMOBM | 14779 | 0.22 | 0.76 | 0.00 | 3.00 |
| R5UPPERMOBM | 17114 | 0.25 | 0.81 | 0.00 | 3.00 |
| S1UPPERMOBM | 10648 | 0.20 | 0.74 | 0.00 | 3.00 |
| S2UPPERMOBM | 9564  | 0.27 | 0.85 | 0.00 | 3.00 |
| S3UPPERMOBM | 10592 | 0.22 | 0.76 | 0.00 | 3.00 |
| S4UPPERMOBM | 9652  | 0.17 | 0.67 | 0.00 | 3.00 |
| S5UPPERMOBM | 7638  | 0.23 | 0.79 | 0.00 | 3.00 |
| R1UPPERMOBA | 14105 | 0.23 | 0.42 | 0.00 | 1.00 |
| R2UPPERMOBA | 12501 | 0.23 | 0.42 | 0.00 | 1.00 |
| R3UPPERMOBA | 14446 | 0.30 | 0.46 | 0.00 | 1.00 |
| R4UPPERMOBA | 13803 | 0.33 | 0.47 | 0.00 | 1.00 |
| R5UPPERMOBA | 15756 | 0.30 | 0.46 | 0.00 | 1.00 |
| S1UPPERMOBA | 9968  | 0.20 | 0.40 | 0.00 | 1.00 |
| S2UPPERMOBA | 8737  | 0.20 | 0.40 | 0.00 | 1.00 |
| S3UPPERMOBA | 9865  | 0.26 | 0.44 | 0.00 | 1.00 |
| S4UPPERMOBA | 9166  | 0.29 | 0.45 | 0.00 | 1.00 |
| S5UPPERMOBA | 7064  | 0.31 | 0.46 | 0.00 | 1.00 |
| R1LOWERMOb  | 14110 | 1.10 | 1.30 | 0.00 | 4.00 |
| R2LOWERMOb  | 12499 | 1.03 | 1.29 | 0.00 | 4.00 |
| R3LOWERMOb  | 14446 | 1.24 | 1.34 | 0.00 | 4.00 |
| R4LOWERMOb  | 13799 | 1.37 | 1.37 | 0.00 | 4.00 |
| R5LOWERMOb  | 15761 | 1.26 | 1.39 | 0.00 | 4.00 |
| S1LOWERMOb  | 9970  | 1.01 | 1.26 | 0.00 | 4.00 |
| S2LOWERMOb  | 8737  | 0.94 | 1.23 | 0.00 | 4.00 |
| S3LOWERMOb  | 9865  | 1.13 | 1.31 | 0.00 | 4.00 |
| S4LOWERMOb  | 9165  | 1.27 | 1.34 | 0.00 | 4.00 |
| S5LOWERMOb  | 7066  | 1.32 | 1.39 | 0.00 | 4.00 |
| R1LOWERMObM | 15186 | 0.41 | 1.05 | 0.00 | 4.00 |
| R2LOWERMObM | 13704 | 0.47 | 1.15 | 0.00 | 4.00 |
| R3LOWERMObM | 15723 | 0.41 | 1.11 | 0.00 | 4.00 |
| R4LOWERMObM | 14779 | 0.35 | 1.02 | 0.00 | 4.00 |
| R5LOWERMObM | 17114 | 0.36 | 1.09 | 0.00 | 4.00 |
| S1LOWERMObM | 10648 | 0.38 | 1.00 | 0.00 | 4.00 |
| S2LOWERMObM | 9564  | 0.46 | 1.14 | 0.00 | 4.00 |
| S3LOWERMObM | 10592 | 0.35 | 1.03 | 0.00 | 4.00 |
| S4LOWERMObM | 9652  | 0.27 | 0.90 | 0.00 | 4.00 |
| S5LOWERMObM | 7638  | 0.34 | 1.06 | 0.00 | 4.00 |
| R1LOWERMObA | 14110 | 0.51 | 0.50 | 0.00 | 1.00 |

|             |       |      |      |      |       |
|-------------|-------|------|------|------|-------|
| R2LOWERMOBA | 12499 | 0.49 | 0.50 | 0.00 | 1.00  |
| R3LOWERMOBA | 14446 | 0.56 | 0.50 | 0.00 | 1.00  |
| R4LOWERMOBA | 13799 | 0.60 | 0.49 | 0.00 | 1.00  |
| R5LOWERMOBA | 15761 | 0.55 | 0.50 | 0.00 | 1.00  |
| S1LOWERMOBA | 9970  | 0.48 | 0.50 | 0.00 | 1.00  |
| S2LOWERMOBA | 8737  | 0.46 | 0.50 | 0.00 | 1.00  |
| S3LOWERMOBA | 9865  | 0.53 | 0.50 | 0.00 | 1.00  |
| S4LOWERMOBA | 9165  | 0.57 | 0.49 | 0.00 | 1.00  |
| S5LOWERMOBA | 7066  | 0.58 | 0.49 | 0.00 | 1.00  |
| R1NAGI10    | 14110 | 2.01 | 2.60 | 0.00 | 10.00 |
| R2NAGI10    | 12501 | 1.90 | 2.58 | 0.00 | 10.00 |
| R3NAGI10    | 14446 | 2.34 | 2.71 | 0.00 | 10.00 |
| R4NAGI10    | 13804 | 2.57 | 2.78 | 0.00 | 10.00 |
| R5NAGI10    | 15764 | 2.38 | 2.83 | 0.00 | 10.00 |
| S1NAGI10    | 9970  | 1.79 | 2.46 | 0.00 | 10.00 |
| S2NAGI10    | 8737  | 1.69 | 2.42 | 0.00 | 10.00 |
| S3NAGI10    | 9865  | 2.10 | 2.60 | 0.00 | 10.00 |
| S4NAGI10    | 9167  | 2.33 | 2.66 | 0.00 | 10.00 |
| S5NAGI10    | 7066  | 2.48 | 2.84 | 0.00 | 10.00 |
| R1NAGI10M   | 15186 | 0.91 | 2.57 | 0.00 | 10.00 |
| R2NAGI10M   | 13704 | 1.06 | 2.82 | 0.00 | 10.00 |
| R3NAGI10M   | 15723 | 0.98 | 2.74 | 0.00 | 10.00 |
| R4NAGI10M   | 14779 | 0.83 | 2.50 | 0.00 | 10.00 |
| R5NAGI10M   | 17114 | 0.87 | 2.71 | 0.00 | 10.00 |
| S1NAGI10M   | 10648 | 0.83 | 2.45 | 0.00 | 10.00 |
| S2NAGI10M   | 9564  | 1.03 | 2.80 | 0.00 | 10.00 |
| S3NAGI10M   | 10592 | 0.84 | 2.54 | 0.00 | 10.00 |
| S4NAGI10M   | 9652  | 0.64 | 2.21 | 0.00 | 10.00 |
| S5NAGI10M   | 7638  | 0.83 | 2.64 | 0.00 | 10.00 |
| R1NAGI10A   | 14110 | 0.54 | 0.50 | 0.00 | 1.00  |
| R2NAGI10A   | 12501 | 0.52 | 0.50 | 0.00 | 1.00  |
| R3NAGI10A   | 14446 | 0.61 | 0.49 | 0.00 | 1.00  |
| R4NAGI10A   | 13804 | 0.65 | 0.48 | 0.00 | 1.00  |
| R5NAGI10A   | 15764 | 0.58 | 0.49 | 0.00 | 1.00  |
| S1NAGI10A   | 9970  | 0.50 | 0.50 | 0.00 | 1.00  |
| S2NAGI10A   | 8737  | 0.49 | 0.50 | 0.00 | 1.00  |
| S3NAGI10A   | 9865  | 0.57 | 0.50 | 0.00 | 1.00  |
| S4NAGI10A   | 9167  | 0.62 | 0.49 | 0.00 | 1.00  |
| S5NAGI10A   | 7066  | 0.61 | 0.49 | 0.00 | 1.00  |
| R1NAGI8     | 14110 | 1.44 | 2.02 | 0.00 | 8.00  |
| R2NAGI8     | 12501 | 1.35 | 2.01 | 0.00 | 8.00  |
| R3NAGI8     | 14446 | 1.72 | 2.11 | 0.00 | 8.00  |
| R4NAGI8     | 13804 | 1.89 | 2.16 | 0.00 | 8.00  |
| R5NAGI8     | 15764 | 1.75 | 2.20 | 0.00 | 8.00  |
| S1NAGI8     | 9970  | 1.28 | 1.91 | 0.00 | 8.00  |
| S2NAGI8     | 8737  | 1.20 | 1.88 | 0.00 | 8.00  |
| S3NAGI8     | 9865  | 1.54 | 2.02 | 0.00 | 8.00  |
| S4NAGI8     | 9167  | 1.71 | 2.07 | 0.00 | 8.00  |
| S5NAGI8     | 7066  | 1.81 | 2.20 | 0.00 | 8.00  |
| R1NAGI8M    | 15186 | 0.62 | 2.06 | 0.00 | 8.00  |
| R2NAGI8M    | 13704 | 0.75 | 2.27 | 0.00 | 8.00  |
| R3NAGI8M    | 15723 | 0.70 | 2.19 | 0.00 | 8.00  |
| R4NAGI8M    | 14779 | 0.59 | 2.00 | 0.00 | 8.00  |
| R5NAGI8M    | 17114 | 0.66 | 2.16 | 0.00 | 8.00  |



|          |       |      |      |      |      |
|----------|-------|------|------|------|------|
| S1NAGI8M | 10648 | 0.56 | 1.96 | 0.00 | 8.00 |
| S2NAGI8M | 9564  | 0.72 | 2.25 | 0.00 | 8.00 |
| S3NAGI8M | 10592 | 0.58 | 2.03 | 0.00 | 8.00 |
| S4NAGI8M | 9652  | 0.45 | 1.76 | 0.00 | 8.00 |
| S5NAGI8M | 7638  | 0.63 | 2.11 | 0.00 | 8.00 |
|          |       |      |      |      |      |
| R1NAGI8A | 14110 | 0.47 | 0.50 | 0.00 | 1.00 |
| R2NAGI8A | 12501 | 0.44 | 0.50 | 0.00 | 1.00 |
| R3NAGI8A | 14446 | 0.55 | 0.50 | 0.00 | 1.00 |
| R4NAGI8A | 13804 | 0.60 | 0.49 | 0.00 | 1.00 |
| R5NAGI8A | 15764 | 0.54 | 0.50 | 0.00 | 1.00 |
|          |       |      |      |      |      |
| S1NAGI8A | 9970  | 0.43 | 0.50 | 0.00 | 1.00 |
| S2NAGI8A | 8737  | 0.41 | 0.49 | 0.00 | 1.00 |
| S3NAGI8A | 9865  | 0.51 | 0.50 | 0.00 | 1.00 |
| S4NAGI8A | 9167  | 0.57 | 0.50 | 0.00 | 1.00 |
| S5NAGI8A | 7066  | 0.56 | 0.50 | 0.00 | 1.00 |

## Categorical Variable Codes

| Value-----                    | R1MOBILAA | R2MOBILAA | R3MOBILAA | R4MOBILAA | R5MOBILAA |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         | 1         |           | 1         | 5         |           |
| .m:Missing                    | 38        | 25        |           | 40        | 17        |
| .p:Proxy interview, not asked | 1032      | 1178      | 1275      | 929       | 1328      |
| .r:Refuse                     | 1         |           | 1         | 1         | 3         |
| .x:Doesn't do                 | 1         | 1         |           | 3         |           |
| 0.No                          | 8037      | 7259      | 7834      | 6946      | 8694      |
| 1.Yes                         | 6076      | 5241      | 6612      | 6855      | 7072      |

| Value-----                    | S1MOBILAA | S2MOBILAA | S3MOBILAA | S4MOBILAA | S5MOBILAA |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         |           |           | 1         | 5         |           |
| .m:Missing                    | 13        | 6         |           | 10        | 5         |
| .p:Proxy interview, not asked | 660       | 821       | 726       | 470       | 563       |
| .r:Refuse                     | 1         |           |           |           | 3         |
| .u:Unmar                      | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      | 333       | 131       | 349       | 280       | 501       |
| .x:Doesn't do                 | 1         |           |           | 1         |           |
| 0.No                          | 5993      | 5320      | 5703      | 4966      | 3723      |
| 1.Yes                         | 3980      | 3417      | 4162      | 4200      | 3344      |

| Value-----                    | R1LGMUSAA | R2LGMUSAA | R3LGMUSAA | R4LGMUSAA | R5LGMUSAA |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         | 3         |           | 1         | 5         |           |
| .m:Missing                    | 38        | 25        |           | 40        | 17        |
| .p:Proxy interview, not asked | 1032      | 1178      | 1275      | 929       | 1328      |
| .r:Refuse                     | 4         |           | 1         | 1         | 4         |
| .x:Doesn't do                 |           |           |           |           | 1         |
| 0.No                          | 7803      | 7297      | 6911      | 5980      | 7659      |
| 1.Yes                         | 6306      | 5204      | 7535      | 7824      | 8105      |

| Value-----                    | S1LGMUSAA | S2LGMUSAA | S3LGMUSAA | S4LGMUSAA | S5LGMUSAA |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         | 2         |           | 1         | 5         |           |
| .m:Missing                    | 13        | 6         |           | 10        | 5         |
| .p:Proxy interview, not asked | 660       | 821       | 726       | 470       | 563       |
| .r:Refuse                     | 3         |           |           |           | 3         |
| .u:Unmar                      | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      | 333       | 131       | 349       | 280       | 501       |
| .x:Doesn't do                 |           |           |           |           | 1         |
| 0.No                          | 5836      | 5366      | 5071      | 4252      | 3262      |
| 1.Yes                         | 4134      | 3371      | 4794      | 4915      | 3804      |

| Value-----                    | R1GROSSAA | R2GROSSAA | R3GROSSAA | R4GROSSAA | R5GROSSAA |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         | 1         |           | 1         | 5         |           |
| .m:Missing                    | 38        | 25        |           | 40        | 17        |
| .p:Proxy interview, not asked | 1032      | 1178      | 1275      | 929       | 1328      |
| .r:Refuse                     | 1         |           | 1         | 1         | 3         |
| .x:Doesn't do                 | 1         |           |           |           |           |
| 0.No                          | 10892     | 9669      | 10402     | 9604      | 11492     |
| 1.Yes                         | 3221      | 2832      | 4044      | 4200      | 4274      |

| Value-----                    | S1GROSSAA   | S2GROSSAA   | S3GROSSAA   | S4GROSSAA   | S5GROSSAA   |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|
| .d:DK                         |             |             | 1           | 5           |             |
| .m:Missing                    | 13          | 6           |             | 10          | 5           |
| .p:Proxy interview, not asked | 660         | 821         | 726         | 470         | 563         |
| .r:Refuse                     | 1           |             |             |             | 3           |
| .u:Unmar                      | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                      | 333         | 131         | 349         | 280         | 501         |
| .x:Doesn't do                 | 1           |             |             |             |             |
| 0.No                          | 7937        | 7018        | 7437        | 6734        | 5075        |
| 1.Yes                         | 2036        | 1719        | 2428        | 2433        | 1992        |
| Value-----                    | R1FINEAA    | R2FINEAA    | R3FINEAA    | R4FINEAA    | R5FINEAA    |
| .d:DK                         | 1           |             | 1           | 5           |             |
| .m:Missing                    | 38          | 25          |             | 40          | 17          |
| .p:Proxy interview, not asked | 1032        | 1178        | 1275        | 929         | 1328        |
| .r:Refuse                     | 2           |             | 1           | 1           | 7           |
| 0.No                          | 12771       | 11326       | 12424       | 11686       | 13498       |
| 1.Yes                         | 1342        | 1175        | 2022        | 2118        | 2264        |
| Value-----                    | S1FINEAA    | S2FINEAA    | S3FINEAA    | S4FINEAA    | S5FINEAA    |
| .d:DK                         |             |             | 1           | 5           |             |
| .m:Missing                    | 13          | 6           |             | 10          | 5           |
| .p:Proxy interview, not asked | 660         | 821         | 726         | 470         | 563         |
| .r:Refuse                     | 1           |             |             |             | 5           |
| .u:Unmar                      | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                      | 333         | 131         | 349         | 280         | 501         |
| 0.No                          | 9160        | 8059        | 8651        | 7912        | 5993        |
| 1.Yes                         | 814         | 678         | 1214        | 1255        | 1072        |
| Value-----                    | R1MOBILSEVA | R2MOBILSEVA | R3MOBILSEVA | R4MOBILSEVA | R5MOBILSEVA |
| .d:DK                         | 3           |             | 1           | 5           |             |
| .m:Missing                    | 38          | 25          |             | 40          | 17          |
| .p:Proxy interview, not asked | 1032        | 1178        | 1275        | 929         | 1328        |
| .r:Refuse                     | 3           |             | 1           | 1           | 4           |
| .x:Doesn't do                 |             |             |             |             | 1           |
| 0.No                          | 6699        | 6219        | 5931        | 5062        | 6774        |
| 1.Yes                         | 7411        | 6282        | 8515        | 8742        | 8990        |
| Value-----                    | S1MOBILSEVA | S2MOBILSEVA | S3MOBILSEVA | S4MOBILSEVA | S5MOBILSEVA |
| .d:DK                         | 2           |             | 1           | 5           |             |
| .m:Missing                    | 13          | 6           |             | 10          | 5           |
| .p:Proxy interview, not asked | 660         | 821         | 726         | 470         | 563         |
| .r:Refuse                     | 3           |             |             |             | 3           |
| .u:Unmar                      | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                      | 333         | 131         | 349         | 280         | 501         |
| .x:Doesn't do                 |             |             |             |             | 1           |
| 0.No                          | 5079        | 4600        | 4424        | 3667        | 2835        |
| 1.Yes                         | 4891        | 4137        | 5441        | 5500        | 4231        |
| Value-----                    | R1UPPERMOBA | R2UPPERMOBA | R3UPPERMOBA | R4UPPERMOBA | R5UPPERMOBA |
| .d:DK                         | 3           |             | 1           | 5           |             |
| .m:Missing                    | 38          | 25          |             | 40          | 17          |
| .p:Proxy interview, not asked | 1032        | 1178        | 1275        | 929         | 1328        |
| .r:Refuse                     | 6           |             | 1           | 1           | 8           |
| .x:Doesn't do                 | 2           |             |             | 1           | 5           |
| 0.No                          | 10805       | 9652        | 10081       | 9228        | 11024       |
| 1.Yes                         | 3300        | 2849        | 4365        | 4575        | 4732        |
| Value-----                    | S1UPPERMOBA | S2UPPERMOBA | S3UPPERMOBA | S4UPPERMOBA | S5UPPERMOBA |
| .d:DK                         | 2           |             | 1           | 5           |             |
| .m:Missing                    | 13          | 6           |             | 10          | 5           |
| .p:Proxy interview, not asked | 660         | 821         | 726         | 470         | 563         |
| .r:Refuse                     | 5           |             |             |             | 5           |
| .u:Unmar                      | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                      | 333         | 131         | 349         | 280         | 501         |
| .x:Doesn't do                 |             |             |             | 1           | 1           |
| 0.No                          | 7979        | 7031        | 7260        | 6511        | 4903        |
| 1.Yes                         | 1989        | 1706        | 2605        | 2655        | 2161        |
| Value-----                    | R1LOWERMOBA | R2LOWERMOBA | R3LOWERMOBA | R4LOWERMOBA | R5LOWERMOBA |
| .d:DK                         | 3           |             | 1           | 5           |             |
| .m:Missing                    | 38          | 25          |             | 40          | 17          |

|                               |  |             |             |             |             |             |
|-------------------------------|--|-------------|-------------|-------------|-------------|-------------|
| .p:Proxy interview, not asked |  | 1032        | 1178        | 1275        | 929         | 1328        |
| .r:Refuse                     |  | 3           |             | 1           | 1           | 4           |
| .x:Doesn't do                 |  |             | 2           |             | 5           | 4           |
| 0.No                          |  | 6918        | 6409        | 6331        | 5456        | 7159        |
| 1.Yes                         |  | 7192        | 6090        | 8115        | 8343        | 8602        |
| Value-----                    |  | S1LOWERMOBA | S2LOWERMOBA | S3LOWERMOBA | S4LOWERMOBA | S5LOWERMOBA |
| .d:DK                         |  | 2           |             | 1           | 5           |             |
| .m:Missing                    |  | 13          | 6           |             | 10          | 5           |
| .p:Proxy interview, not asked |  | 660         | 821         | 726         | 470         | 563         |
| .r:Refuse                     |  | 3           |             |             |             | 3           |
| .u:Unmar                      |  | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                      |  | 333         | 131         | 349         | 280         | 501         |
| .x:Doesn't do                 |  |             |             |             | 2           | 1           |
| 0.No                          |  | 5214        | 4736        | 4681        | 3909        | 3002        |
| 1.Yes                         |  | 4756        | 4001        | 5184        | 5256        | 4064        |
| Value-----                    |  | R1NAGI10A   | R2NAGI10A   | R3NAGI10A   | R4NAGI10A   | R5NAGI10A   |
| .d:DK                         |  | 3           |             | 1           | 5           |             |
| .m:Missing                    |  | 38          | 25          |             | 40          | 17          |
| .p:Proxy interview, not asked |  | 1032        | 1178        | 1275        | 929         | 1328        |
| .r:Refuse                     |  | 3           |             | 1           | 1           | 4           |
| .x:Doesn't do                 |  |             |             |             |             | 1           |
| 0.No                          |  | 6528        | 6053        | 5693        | 4849        | 6582        |
| 1.Yes                         |  | 7582        | 6448        | 8753        | 8955        | 9182        |
| Value-----                    |  | S1NAGI10A   | S2NAGI10A   | S3NAGI10A   | S4NAGI10A   | S5NAGI10A   |
| .d:DK                         |  | 2           |             | 1           | 5           |             |
| .m:Missing                    |  | 13          | 6           |             | 10          | 5           |
| .p:Proxy interview, not asked |  | 660         | 821         | 726         | 470         | 563         |
| .r:Refuse                     |  | 3           |             |             |             | 3           |
| .u:Unmar                      |  | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                      |  | 333         | 131         | 349         | 280         | 501         |
| .x:Doesn't do                 |  |             |             |             |             | 1           |
| 0.No                          |  | 4953        | 4480        | 4253        | 3522        | 2749        |
| 1.Yes                         |  | 5017        | 4257        | 5612        | 5645        | 4317        |
| Value-----                    |  | R1NAGI8A    | R2NAGI8A    | R3NAGI8A    | R4NAGI8A    | R5NAGI8A    |
| .d:DK                         |  | 3           |             | 1           | 5           |             |
| .m:Missing                    |  | 38          | 25          |             | 40          | 17          |
| .p:Proxy interview, not asked |  | 1032        | 1178        | 1275        | 929         | 1328        |
| .r:Refuse                     |  | 3           |             | 1           | 1           | 4           |
| .x:Doesn't do                 |  |             |             |             |             | 1           |
| 0.No                          |  | 7514        | 7028        | 6457        | 5518        | 7269        |
| 1.Yes                         |  | 6596        | 5473        | 7989        | 8286        | 8495        |
| Value-----                    |  | S1NAGI8A    | S2NAGI8A    | S3NAGI8A    | S4NAGI8A    | S5NAGI8A    |
| .d:DK                         |  | 2           |             | 1           | 5           |             |
| .m:Missing                    |  | 13          | 6           |             | 10          | 5           |
| .p:Proxy interview, not asked |  | 660         | 821         | 726         | 470         | 563         |
| .r:Refuse                     |  | 3           |             |             |             | 3           |
| .u:Unmar                      |  | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                      |  | 333         | 131         | 349         | 280         | 501         |
| .x:Doesn't do                 |  |             |             |             |             | 1           |
| 0.No                          |  | 5647        | 5184        | 4785        | 3969        | 3096        |
| 1.Yes                         |  | 4323        | 3553        | 5080        | 5198        | 3970        |

## How Constructed

Several summary measures for functional limitations are created. These include mobility and large muscle indices, gross and fine motor summaries, as well as total body mobility, upper body mobility, and lower body mobility summaries.

The mobility index uses the walking several blocks (RwWALKSA), walking across a room (RwWALKRA), climbing several flights of stairs (RwCLIMSA), and climbing one flight of stairs without resting (RwCLIM1A) activities. The large muscle index uses the sitting for about 2 hours (RwSITA), getting up from a chair after sitting for long periods (RwCHAIRA), stooping/kneeling/or crouching (RwSTOOPA), and pushing or pulling large objects (RwPUSHA) activities. The gross motor index uses the walking several blocks (RwWALKSA), walking across a room (RwWALKRA), climbing one flight of stairs without resting (RwCLIM1A), getting in or out of bed (RwBEDA), and bathing (RwBATHA) activities. The fine motor index uses the

picking up a small coin (one peso) from the table (RwDIMEA), eating (RwEATA), and dressing activities (RwDRESSA).

The alternative total body mobility index uses the walking one block (RwWALK1A), climbing several flights of stairs (RwCLIMSA), getting up from a chair after sitting for long periods (RwCHAIRA), stooping/kneeling/or crouching (RwSTOOPA), reaching or extending arms above shoulder level (RwARMSA), lifting or carrying objects weighing over 5 kg (RwLIFTA), and picking up a 1 peso coin from the table (RwDIMEA) activities. The upper body mobility index uses the reaching or extending arms above shoulder level (RwARMSA), lifting or carrying objects weighing over 5 kg (RwLIFTA), and picking up a 1 peso coin from the table (RwDIMEA) activities. The lower body mobility index uses the walking one block (RwWALK1A), climbing several flights of stairs (RwCLIMSA), getting up from a chair after sitting for long periods (RwCHAIRA), and stooping/kneeling/or crouching (RwSTOOPA) activities.

The 10-item NAGI summary uses the items proposed by Nagi (1976) and includes the walking one block (RwWALK1A), sitting for about 2 hours (RwSITA), getting up from a chair after sitting for long periods (RwCHAIRA), climbing several flights of stairs (RwCLIMSA), climbing one flight of stairs without resting (RwCLIM1A), stooping/kneeling/or crouching (RwSTOOPA), reaching or extending arms above shoulder level (RwARMSA), pushing or pulling large objects (RwPUSHA), lifting or carrying objects weighing over 5 kg (RwLIFTA), and picking up a 1 peso coin from the table (RwDIMEA) activities. The 8-item NAGI summary removes the climbing several flights of stairs (RwCLIMSA) and climbing one flight of stairs without resting (RwCLIM1A) activities from the 10-item summary.

In all waves the indicators of "some difficulty" are used to construct these measures. Each limitation adds one to the summary measures even if one or more measures have missing special values and if at least one of the IADL components was completed, that is:

RwMOBILA= sum (RwWALKSA, RwWALK1A, RwWALKRA, RwCLIMSA, RwCLIM1A). RwMOBILAM is the number of mobility questions with missing values, ranging from 0 to 5. RwMOBILA is calculated for all respondents who answered at least one of the mobility component questions. RwMOBILAA indicates whether the respondent had difficulty with any item in the summary. It is coded as 0 if they had no difficulty and 1 if they had difficulty with at least one item.

RwLGMUSA= sum (RwSITA, RwCHAIRA, RwSTOOPA, RwPUSHA). RwLGMUSAM is the number of large muscle questions with missing values, ranging from 0 to 4. RwLGMUSA is calculated for all respondents who answered at least one of the large muscle component questions. RwLGMUSAA indicates whether the respondent had difficulty with any item in the summary. It is coded as 0 if they had no difficulty and 1 if they had difficulty with at least one item.

RwGROSSA= sum (RwWALK1A, RwWALKRA, RwCLIM1A, RwBEDA, RwBATHA). RwGROSSAM is the number of gross motor questions with missing values, ranging from 0 to 5. RwGROSSA is calculated for all respondents who answered at least one of the gross motor component questions. RwGROSSAA indicates whether the respondent had difficulty with any item in the summary. It is coded as 0 if they had no difficulty and 1 if they had difficulty with at least one item.

RwFINEA= sum (RwDIMEA, RwEATA, RwDRESSA). RwFINEAM is the number of fine motor questions with missing values, ranging from 0 to 3. RwFINEA is calculated for all respondents who answered at least one of the fine motor component questions. RwFINEAA indicates whether the respondent had difficulty with any item in the summary. It is coded as 0 if they had no difficulty and 1 if they had difficulty with at least one item.

RwMOBILSEV= sum (RwWALK1A, RwCLIMSA, RwCHAIRA, RwSTOOPA, RwARMSA, RwLIFTA, RwDIMEA). RwMOBILSEVM is the number of alternative total body mobility questions with missing values, ranging from 0 to 7. RwMOBILSEV is calculated for all respondents who answered at least one of the alternative mobility component questions. RwMOBILSEVA indicates whether the respondent had difficulty with any item in the summary. It is coded as 0 if they had no difficulty and 1 if they had difficulty with at least one item.

RwUPPERMOB= sum (RwARMSA, RwLIFTA, RwDIMEA). RwUPPERMOBM is the number of upper body mobility questions with missing values, ranging from 0 to 3. RwUPPERMOB is calculated for all respondents who answered at least one of the upper body mobility component questions. RwUPPERMOBA indicates whether the respondent had difficulty with any item in the summary. It is coded as 0 if they had no difficulty and 1 if they had difficulty with at least one item.

RwLOWERMOB= sum (RwWALK1A, RwCLIMSA, RwCHAIRA, RwSTOOPA). RwLOWERMOBM is the number of lower body mobility questions with missing values, ranging from 0 to 4. RwLOWERMOB is calculated for all respondents

who answered at least one of the lower body mobility component questions. RwLOWERMObA indicates whether the respondent had difficulty with any item in the summary. It is coded as 0 if they had no difficulty and 1 if they had difficulty with at least one item.

RwNAGI10= sum (RwWALK1A, RwsITA, RwCHAIRA, RwCLIMSA, RwCLIM1A, RwSTOOPA, RwARMSA, RwpUSHA, RwLIFTA, RwdIMEA). RwNAGI10M is the number of NAGI items with missing values, ranging from 0 to 10. RwNAGI10 is calculated for all respondents who answered at least one of the NAGI item component questions. RwNAGI10A indicates whether the respondent had difficulty with any item in the summary. It is coded as 0 if they had no difficulty and 1 if they had difficulty with at least one item.

RwNAGI8= sum (RwWALK1A, RwsITA, RwCHAIRA, RwSTOOPA, RwARMSA, RwpUSHA, RwLIFTA, RwdIMEA). RwNAGI8M is the number of NAGI items with missing values, ranging from 0 to 8. RwNAGI8 is calculated for all respondents who answered at least one of the NAGI item component questions. RwNAGI8A indicates whether the respondent had difficulty with any item in the summary. It is coded as 0 if they had no difficulty and 1 if they had difficulty with at least one item.

RwMOBILA, RwlGMUSA, RwgROSSA, RwfINEA, RwmOBILSEV, RwuPPERMOB, RwlOWERMOB, RwnAGI10, RwnAGI8, RwmOBILAA, RwlGMUSAA, RwgROSSAA, RwfINEAA, RwmOBILSEVA, RwuPPERMOBA, RwlOWERMOBA, RwnAGI10A, and RwnAGI8A are assigned special missing .d, .r, .x, .p, .m, for don't know, refused, doesn't do, proxy, or otherwise missing responses, respectively. These variables are assigned a blank missing (.) for respondents who did not participate in the current wave.

SwMOBILA, SwLGMUSA, SwGROSSA, SwFINEA, SwMOBILSEV, SwUPPERMOB, SwLOWERMOb, SwNAGI10, and SwNAGI8 are the respondent's spouse's indices and are taken directly from the spouse's RwmOBILA, RwlGMUSA, RwgROSSA, RwfINEA, RwmOBILSEV, RwuPPERMOB, RwlOWERMOB, RwnAGI10, and RwnAGI8 respectively. SwMOBILAM, SwLGMUSAM, SwGROSSAM, SwFINEAM, SwMOBILSEVM, SwUPPERMOBM, SwLOWERMObM, SwNAGI10M, and SwNAGI8M are taken directly from the spouse's values of RwmOBILBM, RwlGMUSAM, RwgROSSAM, RwfINEAM, RwmOBILSEVM, RwuPPERMOBM, RwlOWERMOBM, RwnAGI10M, and RwnAGI8M respectively. SwMOBILAA, SwLGMUSAA, SwGROSSAA, SwFINEAA, SwMOBILSEVA, SwUPPERMOBA, SwLOWERMObA, SwNAGI10A, and SwNAGI8A are taken directly from the spouse's values of RwmOBILBA, RwlGMUSAA, RwgROSSAA, RwfINEAA, RwmOBILSEVA, RwuPPERMOBA, RwlOWERMOBA, RwnAGI10A, and RwnAGI8A respectively. In addition to the special missing codes used in the respondent variables, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used for the spouse variables. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used for the spouse variables.

Please see "Activities of Daily Living (ADLs): Some difficulty" for a description of how the individual 0/1 indicators (RwWALKRA, RwbEDA, RwbATHA, RweATA, and RwdRESSA) are constructed. See "Other Functional Limitations: Some difficulty" for a description of how the individual 0/1 indicators (RwWALK1A, RwCLIMSA, RwCLIM1A, RwsITA, RwCHAIRA, RwSTOOPA, RwpUSHA, RwdIMEA, RwARMSA, and RwLIFTA) are constructed.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

The RAND HRS includes RwmOBILA, RwlGMUSA, RwgROSSA, and RwfINEA, which are comparable to those included in the Harmonized MHAS. The missing counts and any difficulty indicators available in the Harmonized MHAS (RwmOBILAM, RwmOBILAA, RwlGMUSAM, RwlGMUSAA, RwgROSSAM, RwgROSSAA, RwfINEAM, and RwfINEAA) are not available in the RAND HRS, though comparable measures could be created.

The Harmonized HRS includes RwmOBILSEV, RwmOBILSEVM, RwmOBILSEVA, RwlOWERMOB, RwlOWERMOBM, RwlOWERMOBA, RwuPPERMOB, RwuPPERMOBM, and RwuPPERMOBA, which are comparable to those included in the Harmonized MHAS. The next version of the Harmonized HRS will also include RwnAGI10, RwnAGI10M, RwnAGI10A, RwnAGI8, RwnAGI8M, and RwnAGI8A, which will be comparable to those included in the Harmonized MHAS.

## MHAS Variables Used

Wave 1:

|     |            |
|-----|------------|
| H1  | long walk  |
| H10 | pulling    |
| H11 | picking up |

|       |                                       |
|-------|---------------------------------------|
| H12   | picking up a coin                     |
| H13   | dressing                              |
| H14   | help dressing                         |
| H15_1 | difficult walking                     |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_1 | difficult bathing                     |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_1 | difficult eating                      |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_1 | difficult getting in an out of bed    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H2    | running                               |
| H3    | short walk                            |
| H4    | sitting 2 hours                       |
| H5    | getting up                            |
| H6    | long climbing                         |
| H7    | short climbing                        |
| H8    | bending                               |
| H9    | extending arms                        |

## Wave 2:

|      |   |
|------|---|
| H1   | health problems-trouble walking blocks          |
| H10  | health problems-trouble pushing or pulling      |
| H11  | health problems-trouble carrying objects        |
| H12  | health problems-trouble picking up a coin       |
| H13  | health problems-trouble dressing self           |
| H14  | someone help you to get dressed                 |
| H15A | health problem-trouble walking                  |
| H15E | spouse helps                                    |
| H15F | additional person helps                         |
| H16A | health problem-have trouble bathing             |
| H16E | spouse helps                                    |
| H16F | additional person helps                         |
| H17A | health problem-trouble eating or cutting        |
| H17E | spouse helps                                    |
| H17F | additional person helps                         |
| H18A | health problem-get in/out of bed                |
| H18E | spouse helps                                    |
| H18F | additional person helps                         |
| H2   | health problems-trouble running                 |
| H3   | health problems-trouble walking a block         |
| H4   | health problems-trouble staying seated          |
| H5   | health problems-trouble getting up from chair   |
| H6   | health problems-trouble with flights of stairs  |
| H7   | health problems-trouble with 1 flight of stairs |
| H8   | health problems-trouble sitting up              |
| H9   | health problems-trouble lifting arms            |

## Wave 3:

|         |   |
|---------|---|
| H10_12  | Because of health problem, difficulty pushing or pullin |
| H11_12  | Because of health problem, difficulty carrying objects  |
| H12_12  | Because of health problem, difficulty picking up a coin |
| H13_12  | Because of health problem, difficulty dressing self     |
| H14_12  | Someone help you to get dressed                         |
| H15A_12 | Because of health problem, difficulty walking           |
| H15D_12 | Someone help you walk across room                       |
| H16A_12 | Because of health problem, difficulty bathing           |
| H16D_12 | Someone help you to bathe or shower                     |
| H17A_12 | Because of health problem, difficulty eating or cutting |
| H17D_12 | Does someone help you eat your food                     |
| H18A_12 | Because of health problem, difficulty get in/out of bed |
| H18D_12 | Does someone help you get into or out of bed            |

|         |   |
|---------|---|
| H19A_12 | Because of health problem, difficulty going to the bath |
| H19D_12 | Does someone help you use toilet, get on off            |
| H1_12   | Because of health problem, difficulty walking blocks    |
| H2_12   | Because of health problem, difficulty running           |
| H3_12   | Because of health problem, difficulty walking a block   |
| H4_12   | Because of health problem, difficulty staying seated    |
| H5_12   | Because of health problem, difficulty getting up from c |
| H6_12   | Because of health problem, difficulty with flights of s |
| H7_12   | Because of health problem, difficulty with 1 flight of  |
| H8_12   | Because of health problem, difficulty sitting up        |
| H9_12   | Because of health problem, difficulty lifting arms      |
| Wave 4: |   |
| H10_15  | Because of health problem, does respondent have difficu |
| H11_15  | Because of health problem, does respondent have difficu |
| H12_15  | Because of health problem, does respondent have difficu |
| H13_15  | Because of health problem, does respondent have difficu |
| H14_15  | Does someone help respondent to get dressed             |
| H15A_15 | Because of health problem, does respondent have any dif |
| H15D_15 | Does someone help respondent walking across a room      |
| H16A_15 | Because of health problem, does respondent have any dif |
| H16D_15 | Does someone help respondent bathing or showering       |
| H17A_15 | Because of health problem, does respondent have any dif |
| H17D_15 | Does someone help respondent eating                     |
| H18A_15 | Because of health problem, does respondent have any dif |
| H18D_15 | Does someone help respondent getting in or out of bed   |
| H19A_15 | Because of health problem, does respondent have any dif |
| H19D_15 | Does someone help respondent using the toilet           |
| H1_15   | Because of health problem, does respondent have difficu |
| H2_15   | Because of health problem, does respondent have difficu |
| H3_15   | Because of health problem, does respondent have difficu |
| H4_15   | Because of health problem, does respondent have difficu |
| H5_15   | Because of health problem, does respondent have difficu |
| H6_15   | Because of health problem, does respondent have difficu |
| H7_15   | Because of health problem, does respondent have difficu |
| H8_15   | Because of health problem, does respondent have difficu |
| H9_15   | Because of health problem, does respondent have difficu |
| Wave 5: |   |
| H10_18  | Because of health problem, does R have difficulty pushi |
| H11_18  | Due to health problem, difficult for R to lift/carry ob |
| H12_18  | Due to health problem, does R have difficulty picking u |
| H13_18  | Due to health problem, difficult for R to dress, includ |
| H14_18  | Does someone help R to get dressed                      |
| H15A_18 | Because of health problem, does R have any difficulty w |
| H15D_18 | Does someone help R walking across a room               |
| H16A_18 | Because of health problem, does R have any difficulty b |
| H16D_18 | Does someone help R bathing or showering                |
| H17A_18 | Due to health problem, does R have any difficulty eatin |
| H17D_18 | Does someone help R eating                              |
| H18A_18 | Because of health problem, does R have any difficulty g |
| H18D_18 | Does someone help R getting in or out of bed            |
| H19A_18 | Because of health problem, does R have any difficulty u |
| H19D_18 | Does someone help R using the toilet                    |
| H1_18   | Because of health problem, does R have difficulty walki |
| H2_18   | Because of health problem, does R have difficulty runni |
| H3_18   | Because of health problem, does R have difficulty walki |
| H4_18   | Because of health problem, does R have difficulty sitti |
| H5_18   | Due to health problem, difficult for R to get up from c |
| H6_18   | Due to health problem, hard for R to climb several flig |
| H7_18   | Due to health problem, difficult for R to climb 1 fligh |
| H8_18   | Due to health problem, does R have difficulty stooping, |
| H9_18   | Due to health problem, difficult for R to reach/extend  |

**Doctor Diagnosed Health Problems: Ever Have Condition**

| Wave | Variable  | Label                                      | Type  |
|------|-----------|--|-------|
| 1    | R1HIBPE   | r1hibpe: w1 R Ever had high blood pressure | Categ |
| 2    | R2HIBPE   | r2hibpe: w2 R Ever had high blood pressure | Categ |
| 3    | R3HIBPE   | r3hibpe: w3 R Ever had high blood pressure | Categ |
| 4    | R4HIBPE   | r4hibpe: w4 R Ever had high blood pressure | Categ |
| 5    | R5HIBPE   | r5hibpe: w5 R Ever had high blood pressure | Categ |
| 1    | S1HIBPE   | s1hibpe: w1 S Ever had high blood pressure | Categ |
| 2    | S2HIBPE   | s2hibpe: w2 S Ever had high blood pressure | Categ |
| 3    | S3HIBPE   | s3hibpe: w3 S Ever had high blood pressure | Categ |
| 4    | S4HIBPE   | s4hibpe: w4 S Ever had high blood pressure | Categ |
| 5    | S5HIBPE   | s5hibpe: w5 S Ever had high blood pressure | Categ |
| 1    | R1DIABE   | r1diabe: w1 R Ever had diabetes            | Categ |
| 2    | R2DIABE   | r2diabe: w2 R Ever had diabetes            | Categ |
| 3    | R3DIABE   | r3diabe: w3 R Ever had diabetes            | Categ |
| 4    | R4DIABE   | r4diabe: w4 R Ever had diabetes            | Categ |
| 5    | R5DIABE   | r5diabe: w5 R Ever had diabetes            | Categ |
| 1    | S1DIABE   | s1diabe: w1 S Ever had diabetes            | Categ |
| 2    | S2DIABE   | s2diabe: w2 S Ever had diabetes            | Categ |
| 3    | S3DIABE   | s3diabe: w3 S Ever had diabetes            | Categ |
| 4    | S4DIABE   | s4diabe: w4 S Ever had diabetes            | Categ |
| 5    | S5DIABE   | s5diabe: w5 S Ever had diabetes            | Categ |
| 1    | R1CANCRE  | r1cancre: w1 R Ever had cancer             | Categ |
| 2    | R2CANCRE  | r2cancre: w2 R Ever had cancer             | Categ |
| 3    | R3CANCRE  | r3cancre: w3 R Ever had cancer             | Categ |
| 4    | R4CANCRE  | r4cancre: w4 R Ever had cancer             | Categ |
| 5    | R5CANCRE  | r5cancre: w5 R Ever had cancer             | Categ |
| 1    | S1CANCRE  | s1cancre: w1 S Ever had cancer             | Categ |
| 2    | S2CANCRE  | s2cancre: w2 S Ever had cancer             | Categ |
| 3    | S3CANCRE  | s3cancre: w3 S Ever had cancer             | Categ |
| 4    | S4CANCRE  | s4cancre: w4 S Ever had cancer             | Categ |
| 5    | S5CANCRE  | s5cancre: w5 S Ever had cancer             | Categ |
| 1    | R1LUNGE_M | r1lunge_m: w1 R Ever had lung disease      | Categ |
| 2    | R2LUNGE_M | r2lunge_m: w2 R Ever had lung disease      | Categ |
| 3    | R3LUNGE_M | r3lunge_m: w3 R Ever had lung disease      | Categ |
| 4    | R4LUNGE_M | r4lunge_m: w4 R Ever had lung disease      | Categ |
| 5    | R5LUNGE_M | r5lunge_m: w5 R Ever had lung disease      | Categ |
| 1    | S1LUNGE_M | s1lunge_m: w1 S Ever had lung disease      | Categ |
| 2    | S2LUNGE_M | s2lunge_m: w2 S Ever had lung disease      | Categ |
| 3    | S3LUNGE_M | s3lunge_m: w3 S Ever had lung disease      | Categ |
| 4    | S4LUNGE_M | s4lunge_m: w4 S Ever had lung disease      | Categ |
| 5    | S5LUNGE_M | s5lunge_m: w5 S Ever had lung disease      | Categ |
| 1    | R1HRTATTE | r1hrtatte: w1 R Ever had heart attack      | Categ |
| 2    | R2HRTATTE | r2hrtatte: w2 R Ever had heart attack      | Categ |
| 3    | R3HRTATTE | r3hrtatte: w3 R Ever had heart attack      | Categ |
| 4    | R4HRTATTE | r4hrtatte: w4 R Ever had heart attack      | Categ |
| 5    | R5HRTATTE | r5hrtatte: w5 R Ever had heart attack      | Categ |
| 1    | S1HRTATTE | s1hrtatte: w1 S Ever had heart attack      | Categ |
| 2    | S2HRTATTE | s2hrtatte: w2 S Ever had heart attack      | Categ |
| 3    | S3HRTATTE | s3hrtatte: w3 S Ever had heart attack      | Categ |
| 4    | S4HRTATTE | s4hrtatte: w4 S Ever had heart attack      | Categ |
| 5    | S5HRTATTE | s5hrtatte: w5 S Ever had heart attack      | Categ |



|   |          |  |       |
|---|----------|--|-------|
| 4 | R4HEARTE | r4hearte: w4 R Ever had heart problems | Categ |
| 5 | R5HEARTE | r5hearte: w5 R Ever had heart problems | Categ |
| 4 | S4HEARTE | s4hearte: w4 S Ever had heart problems | Categ |
| 5 | S5HEARTE | s5hearte: w5 S Ever had heart problems | Categ |
| 1 | R1STROKE | r1stroke: w1 R Ever had stroke         | Categ |
| 2 | R2STROKE | r2stroke: w2 R Ever had stroke         | Categ |
| 3 | R3STROKE | r3stroke: w3 R Ever had stroke         | Categ |
| 4 | R4STROKE | r4stroke: w4 R Ever had stroke         | Categ |
| 5 | R5STROKE | r5stroke: w5 R Ever had stroke         | Categ |
| 1 | S1STROKE | s1stroke: w1 S Ever had stroke         | Categ |
| 2 | S2STROKE | s2stroke: w2 S Ever had stroke         | Categ |
| 3 | S3STROKE | s3stroke: w3 S Ever had stroke         | Categ |
| 4 | S4STROKE | s4stroke: w4 S Ever had stroke         | Categ |
| 5 | S5STROKE | s5stroke: w5 S Ever had stroke         | Categ |
| 1 | R1ARTHRE | r1arthre: w1 R Ever had arthritis      | Categ |
| 2 | R2ARTHRE | r2arthre: w2 R Ever had arthritis      | Categ |
| 3 | R3ARTHRE | r3arthre: w3 R Ever had arthritis      | Categ |
| 4 | R4ARTHRE | r4arthre: w4 R Ever had arthritis      | Categ |
| 5 | R5ARTHRE | r5arthre: w5 R Ever had arthritis      | Categ |
| 1 | S1ARTHRE | s1arthre: w1 S Ever had arthritis      | Categ |
| 2 | S2ARTHRE | s2arthre: w2 S Ever had arthritis      | Categ |
| 3 | S3ARTHRE | s3arthre: w3 S Ever had arthritis      | Categ |
| 4 | S4ARTHRE | s4arthre: w4 S Ever had arthritis      | Categ |
| 5 | S5ARTHRE | s5arthre: w5 S Ever had arthritis      | Categ |

## Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1HIBPE  | 14704 | 0.38 | 0.48    | 0.00    | 1.00    |
| R2HIBPE  | 13668 | 0.47 | 0.50    | 0.00    | 1.00    |
| R3HIBPE  | 15687 | 0.51 | 0.50    | 0.00    | 1.00    |
| R4HIBPE  | 14761 | 0.59 | 0.49    | 0.00    | 1.00    |
| R5HIBPE  | 17099 | 0.54 | 0.50    | 0.00    | 1.00    |
| S1HIBPE  | 10303 | 0.36 | 0.48    | 0.00    | 1.00    |
| S2HIBPE  | 9538  | 0.46 | 0.50    | 0.00    | 1.00    |
| S3HIBPE  | 10573 | 0.48 | 0.50    | 0.00    | 1.00    |
| S4HIBPE  | 9643  | 0.56 | 0.50    | 0.00    | 1.00    |
| S5HIBPE  | 7631  | 0.61 | 0.49    | 0.00    | 1.00    |
| R1DIABE  | 14721 | 0.16 | 0.36    | 0.00    | 1.00    |
| R2DIABE  | 13653 | 0.19 | 0.39    | 0.00    | 1.00    |
| R3DIABE  | 15691 | 0.24 | 0.42    | 0.00    | 1.00    |
| R4DIABE  | 14760 | 0.27 | 0.44    | 0.00    | 1.00    |
| R5DIABE  | 17088 | 0.27 | 0.45    | 0.00    | 1.00    |
| S1DIABE  | 10314 | 0.16 | 0.36    | 0.00    | 1.00    |
| S2DIABE  | 9527  | 0.19 | 0.39    | 0.00    | 1.00    |
| S3DIABE  | 10577 | 0.23 | 0.42    | 0.00    | 1.00    |
| S4DIABE  | 9642  | 0.27 | 0.44    | 0.00    | 1.00    |
| S5DIABE  | 7626  | 0.31 | 0.46    | 0.00    | 1.00    |
| R1CANCRE | 14733 | 0.02 | 0.14    | 0.00    | 1.00    |
| R2CANCRE | 13670 | 0.02 | 0.15    | 0.00    | 1.00    |
| R3CANCRE | 15696 | 0.03 | 0.17    | 0.00    | 1.00    |
| R4CANCRE | 14763 | 0.04 | 0.19    | 0.00    | 1.00    |
| R5CANCRE | 17099 | 0.04 | 0.20    | 0.00    | 1.00    |

|           |       |      |      |      |      |
|-----------|-------|------|------|------|------|
| S1CANCRE  | 10320 | 0.02 | 0.14 | 0.00 | 1.00 |
| S2CANCRE  | 9537  | 0.02 | 0.15 | 0.00 | 1.00 |
| S3CANCRE  | 10579 | 0.03 | 0.17 | 0.00 | 1.00 |
| S4CANCRE  | 9643  | 0.04 | 0.19 | 0.00 | 1.00 |
| S5CANCRE  | 7635  | 0.05 | 0.21 | 0.00 | 1.00 |
|           |       |      |      |      |      |
| R1LUNGE_M | 14742 | 0.06 | 0.24 | 0.00 | 1.00 |
| R2LUNGE_M | 13669 | 0.08 | 0.28 | 0.00 | 1.00 |
| R3LUNGE_M | 15697 | 0.09 | 0.28 | 0.00 | 1.00 |
| R4LUNGE_M | 14769 | 0.11 | 0.32 | 0.00 | 1.00 |
| R5LUNGE_M | 17102 | 0.11 | 0.31 | 0.00 | 1.00 |
|           |       |      |      |      |      |
| S1LUNGE_M | 10330 | 0.06 | 0.23 | 0.00 | 1.00 |
| S2LUNGE_M | 9540  | 0.08 | 0.27 | 0.00 | 1.00 |
| S3LUNGE_M | 10579 | 0.08 | 0.27 | 0.00 | 1.00 |
| S4LUNGE_M | 9647  | 0.10 | 0.30 | 0.00 | 1.00 |
| S5LUNGE_M | 7634  | 0.12 | 0.33 | 0.00 | 1.00 |
|           |       |      |      |      |      |
| R1HRTATTE | 14727 | 0.03 | 0.18 | 0.00 | 1.00 |
| R2HRTATTE | 13683 | 0.05 | 0.21 | 0.00 | 1.00 |
| R3HRTATTE | 15700 | 0.05 | 0.22 | 0.00 | 1.00 |
| R4HRTATTE | 14767 | 0.07 | 0.25 | 0.00 | 1.00 |
| R5HRTATTE | 17103 | 0.07 | 0.25 | 0.00 | 1.00 |
|           |       |      |      |      |      |
| S1HRTATTE | 10322 | 0.03 | 0.18 | 0.00 | 1.00 |
| S2HRTATTE | 9550  | 0.05 | 0.21 | 0.00 | 1.00 |
| S3HRTATTE | 10579 | 0.05 | 0.22 | 0.00 | 1.00 |
| S4HRTATTE | 9646  | 0.06 | 0.25 | 0.00 | 1.00 |
| S5HRTATTE | 7636  | 0.08 | 0.27 | 0.00 | 1.00 |
|           |       |      |      |      |      |
| R4HEARTE  | 14775 | 0.09 | 0.29 | 0.00 | 1.00 |
| R5HEARTE  | 17106 | 0.12 | 0.33 | 0.00 | 1.00 |
|           |       |      |      |      |      |
| S4HEARTE  | 9650  | 0.09 | 0.28 | 0.00 | 1.00 |
| S5HEARTE  | 7637  | 0.13 | 0.34 | 0.00 | 1.00 |
|           |       |      |      |      |      |
| R1STROKE  | 14730 | 0.03 | 0.16 | 0.00 | 1.00 |
| R2STROKE  | 13695 | 0.03 | 0.17 | 0.00 | 1.00 |
| R3STROKE  | 15707 | 0.03 | 0.18 | 0.00 | 1.00 |
| R4STROKE  | 14765 | 0.04 | 0.20 | 0.00 | 1.00 |
| R5STROKE  | 17105 | 0.04 | 0.20 | 0.00 | 1.00 |
|           |       |      |      |      |      |
| S1STROKE  | 10322 | 0.02 | 0.15 | 0.00 | 1.00 |
| S2STROKE  | 9558  | 0.03 | 0.16 | 0.00 | 1.00 |
| S3STROKE  | 10584 | 0.03 | 0.17 | 0.00 | 1.00 |
| S4STROKE  | 9645  | 0.04 | 0.19 | 0.00 | 1.00 |
| S5STROKE  | 7634  | 0.04 | 0.21 | 0.00 | 1.00 |
|           |       |      |      |      |      |
| R1ARTHRE  | 14727 | 0.20 | 0.40 | 0.00 | 1.00 |
| R2ARTHRE  | 13688 | 0.28 | 0.45 | 0.00 | 1.00 |
| R3ARTHRE  | 15698 | 0.24 | 0.42 | 0.00 | 1.00 |
| R4ARTHRE  | 14760 | 0.28 | 0.45 | 0.00 | 1.00 |
| R5ARTHRE  | 17095 | 0.24 | 0.43 | 0.00 | 1.00 |
|           |       |      |      |      |      |
| S1ARTHRE  | 10319 | 0.17 | 0.38 | 0.00 | 1.00 |
| S2ARTHRE  | 9553  | 0.25 | 0.43 | 0.00 | 1.00 |
| S3ARTHRE  | 10574 | 0.20 | 0.40 | 0.00 | 1.00 |
| S4ARTHRE  | 9641  | 0.24 | 0.43 | 0.00 | 1.00 |
| S5ARTHRE  | 7631  | 0.27 | 0.44 | 0.00 | 1.00 |

### Categorical Variable Codes

|            |           |           |           |           |           |
|------------|-----------|-----------|-----------|-----------|-----------|
| Value----- | R1HIBPE   | R2HIBPE   | R3HIBPE   | R4HIBPE   | R5HIBPE   |
| .d:DK      | 45        | 36        | 33        | 15        | 12        |
| .m:Missing | 4         |           |           |           |           |
| .r:Refuse  | 38        |           | 3         | 3         | 3         |
| .s:Skip    | 395       |           |           |           |           |
| 0.no       | 9153      | 7194      | 7727      | 6119      | 7782      |
| 1.yes      | 5551      | 6474      | 7960      | 8642      | 9317      |
| Value----- | S1HIBPE   | S2HIBPE   | S3HIBPE   | S4HIBPE   | S5HIBPE   |
| .d:DK      | 31        | 26        | 18        | 8         | 5         |
| .m:Missing | 3         |           |           |           |           |
| .r:Refuse  | 28        |           | 1         | 1         | 2         |
| .s:Skip    | 283       |           |           |           |           |
| .u:Unmar   | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR   | 333       | 131       | 349       | 280       | 501       |
| 0.no       | 6631      | 5196      | 5509      | 4274      | 2961      |
| 1.yes      | 3672      | 4342      | 5064      | 5369      | 4670      |
| Value----- | R1DIABE   | R2DIABE   | R3DIABE   | R4DIABE   | R5DIABE   |
| .d:DK      | 33        | 49        | 29        | 15        | 23        |
| .m:Missing | 4         |           |           |           |           |
| .r:Refuse  | 33        | 2         | 3         | 4         | 3         |
| .s:Skip    | 395       |           |           |           |           |
| 0.no       | 12437     | 11062     | 11989     | 10755     | 12437     |
| 1.yes      | 2284      | 2591      | 3702      | 4005      | 4651      |
| Value----- | S1DIABE   | S2DIABE   | S3DIABE   | S4DIABE   | S5DIABE   |
| .d:DK      | 23        | 36        | 13        | 8         | 11        |
| .m:Missing | 3         |           |           |           |           |
| .r:Refuse  | 25        | 1         | 2         | 2         | 1         |
| .s:Skip    | 283       |           |           |           |           |
| .u:Unmar   | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR   | 333       | 131       | 349       | 280       | 501       |
| 0.no       | 8713      | 7707      | 8099      | 7036      | 5297      |
| 1.yes      | 1601      | 1820      | 2478      | 2606      | 2329      |
| Value----- | R1CANCRE  | R2CANCRE  | R3CANCRE  | R4CANCRE  | R5CANCRE  |
| .d:DK      | 22        | 34        | 22        | 14        | 11        |
| .m:Missing | 4         |           |           |           |           |
| .r:Refuse  | 32        |           | 5         | 2         | 4         |
| .s:Skip    | 395       |           |           |           |           |
| 0.no       | 14434     | 13354     | 15218     | 14185     | 16403     |
| 1.yes      | 299       | 316       | 478       | 578       | 696       |
| Value----- | S1CANCRE  | S2CANCRE  | S3CANCRE  | S4CANCRE  | S5CANCRE  |
| .d:DK      | 18        | 27        | 10        | 9         | 2         |
| .m:Missing | 3         |           |           |           |           |
| .r:Refuse  | 24        |           | 3         |           | 1         |
| .s:Skip    | 283       |           |           |           |           |
| .u:Unmar   | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR   | 333       | 131       | 349       | 280       | 501       |
| 0.no       | 10112     | 9324      | 10272     | 9272      | 7283      |
| 1.yes      | 208       | 213       | 307       | 371       | 352       |
| Value----- | R1LUNGE_M | R2LUNGE_M | R3LUNGE_M | R4LUNGE_M | R5LUNGE_M |
| .d:DK      | 14        | 33        | 23        | 6         | 6         |
| .m:Missing | 4         |           |           |           |           |
| .r:Refuse  | 31        | 2         | 3         | 4         | 6         |
| .s:Skip    | 395       |           |           |           |           |
| 0.no       | 13828     | 12510     | 14302     | 13115     | 15250     |
| 1.yes      | 914       | 1159      | 1395      | 1654      | 1852      |
| Value----- | S1LUNGE_M | S2LUNGE_M | S3LUNGE_M | S4LUNGE_M | S5LUNGE_M |
| .d:DK      | 8         | 23        | 11        | 2         | 2         |
| .m:Missing | 3         |           |           |           |           |
| .r:Refuse  | 24        | 1         | 2         | 3         | 2         |
| .s:Skip    | 283       |           |           |           |           |
| .u:Unmar   | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR   | 333       | 131       | 349       | 280       | 501       |
| 0.no       | 9727      | 8791      | 9735      | 8676      | 6709      |
| 1.yes      | 603       | 749       | 844       | 971       | 925       |
| Value----- | R1HRTATTE | R2HRTATTE | R3HRTATTE | R4HRTATTE | R5HRTATTE |

|            |           |           |           |           |           |
|------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK      | 24        | 18        | 16        | 9         | 6         |
| .m:Missing | 4         |           |           | 1         |           |
| .r:Refuse  | 36        | 3         | 7         | 2         | 5         |
| .s:Skip    | 395       |           |           |           |           |
| 0.no       | 14239     | 13048     | 14886     | 13791     | 15952     |
| 1.yes      | 488       | 635       | 814       | 976       | 1151      |
| Value----- | S1HRTATTE | S2HRTATTE | S3HRTATTE | S4HRTATTE | S5HRTATTE |
| .d:DK      | 15        | 11        | 7         | 4         | 2         |
| .m:Missing | 3         |           |           |           |           |
| .r:Refuse  | 25        | 3         | 6         | 2         |           |
| .s:Skip    | 283       |           |           |           |           |
| .u:Unmar   | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR   | 333       | 131       | 349       | 280       | 501       |
| 0.no       | 9982      | 9106      | 10059     | 9024      | 7023      |
| 1.yes      | 340       | 444       | 520       | 622       | 613       |
| Value----- |           |           |           | R4HEARTE  | R5HEARTE  |
| .d:DK      |           |           |           | 3         | 4         |
| .m:Missing |           |           |           | 1         |           |
| .r:Refuse  |           |           |           |           | 4         |
| 0.no       |           |           |           | 13442     | 15043     |
| 1.yes      |           |           |           | 1333      | 2063      |
| Value----- |           |           |           | S4HEARTE  | S5HEARTE  |
| .d:DK      |           |           |           | 2         | 1         |
| .u:Unmar   |           |           |           | 4847      | 5227      |
| .v:SP NR   |           |           |           | 280       | 501       |
| 0.no       |           |           |           | 8824      | 6616      |
| 1.yes      |           |           |           | 826       | 1021      |
| Value----- | R1STROKE  | R2STROKE  | R3STROKE  | R4STROKE  | R5STROKE  |
| .d:DK      | 18        | 8         | 12        | 9         | 5         |
| .m:Missing | 4         |           |           | 1         |           |
| .r:Refuse  | 39        | 1         | 4         | 4         | 4         |
| .s:Skip    | 395       |           |           |           |           |
| 0.no       | 14339     | 13265     | 15176     | 14150     | 16400     |
| 1.yes      | 391       | 430       | 531       | 615       | 705       |
| Value----- | S1STROKE  | S2STROKE  | S3STROKE  | S4STROKE  | S5STROKE  |
| .d:DK      | 13        | 5         | 5         | 5         | 2         |
| .m:Missing | 3         |           |           |           |           |
| .r:Refuse  | 27        | 1         | 3         | 2         | 2         |
| .s:Skip    | 283       |           |           |           |           |
| .u:Unmar   | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR   | 333       | 131       | 349       | 280       | 501       |
| 0.no       | 10079     | 9292      | 10273     | 9298      | 7298      |
| 1.yes      | 243       | 266       | 311       | 347       | 336       |
| Value----- | R1ARTHRE  | R2ARTHRE  | R3ARTHRE  | R4ARTHRE  | R5ARTHRE  |
| .d:DK      | 27        | 16        | 20        | 13        | 15        |
| .m:Missing | 4         |           |           | 1         |           |
| .r:Refuse  | 33        |           | 5         | 5         | 4         |
| .s:Skip    | 395       |           |           |           |           |
| 0.no       | 11846     | 9907      | 11997     | 10675     | 13005     |
| 1.yes      | 2881      | 3781      | 3701      | 4085      | 4090      |
| Value----- | S1ARTHRE  | S2ARTHRE  | S3ARTHRE  | S4ARTHRE  | S5ARTHRE  |
| .d:DK      | 20        | 11        | 14        | 8         | 5         |
| .m:Missing | 3         |           |           |           |           |
| .r:Refuse  | 23        |           | 4         | 3         | 2         |
| .s:Skip    | 283       |           |           |           |           |
| .u:Unmar   | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR   | 333       | 131       | 349       | 280       | 501       |
| 0.no       | 8545      | 7168      | 8417      | 7301      | 5578      |
| 1.yes      | 1774      | 2385      | 2157      | 2340      | 2053      |

## How Constructed

RwHIBPE, RwDIABE, RwCANCRE, RwLUNGE\_M, RwHRTATTE, RwHEARTE, RwSTROKE, and RwARTHRE indicate whether or not a doctor has ever told the respondent they had or currently have these conditions. A code of 0 indicates that the respondent does not report having been told by a doctor they have the condition. A

code of 1 indicates that the respondent reports having been told by a doctor they have the condition. When respondents "don't know" or refuse to answer, `RwHIBPE`, `RwDIABE`, `RwCANCRE`, `RwLUNGE_M`, `RwHRTATTE`, `RwHEARTE`, `RwSTROKE`, and `RwARTHRE` are assigned special missing values `.d` or `.r`, respectively. A special missing value `.s` is assigned in Wave 1 if the respondent was not asked whether they have been diagnosed with any conditions because they reported not ever having seen a medical doctor. These variables are set to plain missing (`.`) for respondents who did not respond to the current wave.

`RwHIBPE` indicates whether a doctor has told the respondent they had or currently have hypertension or high blood pressure. `RwDIABE` indicates whether a doctor has told the respondent they had or currently have diabetes or high blood sugar. `RwCANCRE` indicates whether a doctor has told the respondent they had or currently have cancer. `RwLUNGE_M` indicates whether a doctor has told the respondent they had or currently have a respiratory illness, such as asthma or emphysema. `RwHRTATTE` indicates whether a doctor has told the respondent they had a heart attack. `RwHEARTE` indicates whether a doctor has told the respondent they had a heart condition, such as heart failure/cardiac failure/congestive heart failure, arrhythmia, angina, or a heart attack. `RwSTROKE` indicates whether a doctor has told the respondent they had a stroke. `RwARTHRE` indicates whether a doctor has told the respondent they had or currently have arthritis or rheumatism.

`SwHIBPE`, `SwDIABE`, `SwCANCRE`, `SwLUNGE_M`, `SwHRTATTE`, `SwHEARTE`, `SwSTROKE`, and `SwARTHRE` indicate whether the respondent's spouse reported ever being told by a doctor they had or currently have any of these conditions described above and are taken directly from the spouse's `RwHIBPE`, `RwDIABE`, `RwCANCRE`, `RwLUNGE_M`, `RwHRTATTE`, `RwHEARTE`, `RwSTROKE`, and `RwARTHRE`, respectively. In addition to the special missing codes used in `RwHIBPE`, `RwDIABE`, `RwCANCRE`, `RwLUNGE_M`, `RwHRTATTE`, `RwHEARTE`, `RwSTROKE`, and `RwARTHRE`; `SwHIBPE`, `SwDIABE`, `SwCANCRE`, `SwLUNGE_M`, `SwHRTATTE`, `SwHEARTE`, `SwSTROKE`, and `SwARTHRE` employ the special missing value `.u`, when the respondent does not report being coupled in the current wave, and the special missing value `.v`, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

In Wave 1, respondents who reported never having seen a medical doctor, or who responded don't know or refuse to that question, were not asked whether they had ever been diagnosed with health conditions. Additionally, in Wave 1, for all the conditions, respondents were asked "Has a doctor or medical personnel ever told you that you have/have had [...]?".

In Wave 2, respondents were asked if "a doctor or medical personnel diagnosed him/her with" hypertension, cancer, diabetes, respiratory illness, or arthritis. They were also asked if "a doctor or medical personnel ever told them they have had" a heart attack or a stroke. In addition, while follow-up respondents were asked about the last two years, new respondents were asked if "a doctor or medical personnel ever diagnosed him/her (or told him/her that he/she had) [...]". To construct `R2HIBPE`, `R2DIABE`, `R2CANCRE_M`, `R2LUNGE_M`, `R2HRTATTE`, `R2STROKE`, and `R2ARTHRE` a code of 1 was also assigned if a respondent reported in the previous wave having the condition, that is `Rw[condition]` equal 1.

Starting in Wave 3, respondents were asked if a doctor or medical personnel ever diagnosed them or told them they have had a condition, disregarding the type of interview (follow-up or new sample). To construct `RwHIBPE`, `RwDIABE`, `RwCANCRE_M`, `RwLUNGE_M`, `RwHRTATTE`, `RwSTROKE`, and `RwARTHRE` a code of 1 was also assigned if a respondent reported in the previous waves having the condition, that is `Rw[condition]` equal 1.

Also the definition of cancer changes across waves. Respondents were asked during the first and third waves if they were ever (or in the last two years) diagnosed with cancer. However, during the second wave, they were asked if they were told that they have (or had) cancer or a malignant tumor, excluding minor skin cancer.

Starting in Wave 3, respondents are also asked if a doctor or medical personnel ever told you that you have had heart problem such as heart failure, cardiac failure, congestive heart failure, arrhythmia, or angina. However, in Wave 3, this question is skipped if the respondent reported not having had a heart attack. `RwHEARTE` is only included starting in Wave 4 when this question is asked of all respondents.

## Differences with the RAND HRS/Harmonized HRS

In follow-up interviews in the HRS, respondents are read a statement containing conditions they reported at prior waves. Respondents are able to dispute any incorrect reports. However, in the MHAS the timing of the health questions changed across waves. In Wave 2, during follow-up interviews, respondents were asked

if in the last two years they were diagnosed with a condition or if a doctor told them they had a condition. Also, during new interviews respondents were asked if they were ever diagnosed (or ever had) a condition. Thus, to construct the health condition variables for Wave 2, a code of 1 is assigned if follow-up respondents reported having the condition in the previous wave, that is Wave 1. Starting in Wave 3, all respondent with disregard of the type of interview (follow-up of new sample) were asked if they ever had or have the condition.

Also different to the MHAS is the definition of some of the health conditions. First, respondents were asked during the first and third waves if they were ever (or in the last two years) diagnosed with cancer. However, during the second wave, they were asked if they were told that they have (or had) cancer or a malignant tumor, excluding minor skin cancer. In the HRS, the cancer question consistently asks respondents to exclude minor skin cancer.

Second, respondents were asked if they were ever told they had/diagnosed with a respiratory illness, such as asthma or emphysema. In the HRS, the chronic lung disease definition includes chronic bronchitis or emphysema and excludes asthma. In this case, an MHAS specific variable (RwLUNGE\_M) was created for all the waves.

Finally, to determine if the respondent had a heart problem, starting in Wave 3 respondents were asked if they ever had (or in the past two years) a heart problem including heart failure, cardiac failure, congestive heart failure, or arrhythmia. However in the HRS, the questions include myocardial infarction or coronary thrombosis, or any other heart problem, including congestive heart failure. As such, reports of heart attack have been incorporated into RWEARTE in the Harmonized MHAS starting in Wave 4 to provide a comparable measure to RWEARTE in the RAND HRS.

## MHAS Variables Used

### Wave 1:

|     |                         |
|-----|-------------------------|
| C12 | cancer or tumor         |
| C19 | respiratory illness     |
| C22 | heart attack            |
| C27 | stroke                  |
| C34 | arthritis or rheumatism |
| C4  | hypertension            |
| C6  | diabetes                |

### Wave 2:

|      |  |
|------|--|
| C12  | doctor ever say you have cancer                |
| C19  | doctor ever say you have a respiratory disease |
| C22A | doctor ever say you had a heart attack         |
| C26  | doctor ever say you had a stroke               |
| C32  | doctor ever say you have arthritis             |
| C4   | doctor ever say you have hypertension          |
| C6   | doctor ever say you have diabetes              |

### Wave 3:

|         |  |
|---------|--|
| C12_12  | Has a physician diagnosed respondent...cancer              |
| C19_12  | Has a physician diagnosed respondent...respiratory illness |
| C22A_12 | Has a physician ever told respondent...heart attack        |
| C26_12  | Ever/last 2 years:Has a physician told respondent...stroke |
| C32_12  | Has a physician diagnosed respondent with arthritis/rhe    |
| C4_12   | Has a physician diagnosed...hypertension/high blood press  |
| C6_12   | Has a physician diagnosed respondent...diabetes            |

### Wave 4:

|         |   |
|---------|---|
| C12_15  | Has a doctor or medical personnel ever diagnosed respon |
| C19_15  | Has a doctor or medical personnel ever diagnosed respon |
| C22A_15 | Has a doctor or medical personnel ever told respondent  |
| C26_15  | Has a doctor or medical personnel ever told respondent  |
| C32_15  | Has a doctor or medical personnel ever diagnosed respon |
| C4_15   | Has a doctor or medical personnel ever diagnosed respon |
| C6_15   | Has a doctor or medical personnel ever diagnosed respon |

### Wave 5:

|         |   |
|---------|---|
| C12_18  | Has a doctor or medical personnel ever diagnosed R with |
| C19_18  | Has a doctor or medical personnel ever diagnosed R with |
| C22A_18 | Has a doctor or medical personnel ever told R he/she ha |
| C26_18  | Has a doctor or medical personnel ever told R he/she ha |

|        |   |
|--------|---|
| C32_18 | Has a doctor or medical personnel ever diagnosed R with |
| C4_18  | Has R ever been diagnosed with hypertension/high blood  |
| C6_18  | Has a doctor or medical personnel ever diagnosed R with |

**Doctor Diagnosed Diseases: Whether Receives Treatment or Medication for Disease**

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 1    | R1RXHIBP   | r1rxhibp: w1 Whether R takes meds for high blood pressure    | Categ |
| 2    | R2RXHIBP   | r2rxhibp: w2 Whether R takes meds for high blood pressure    | Categ |
| 3    | R3RXHIBP   | r3rxhibp: w3 Whether R takes meds for high blood pressure    | Categ |
| 4    | R4RXHIBP   | r4rxhibp: w4 Whether R takes meds for high blood pressure    | Categ |
| 5    | R5RXHIBP   | r5rxhibp: w5 Whether R takes meds for high blood pressure    | Categ |
| 1    | S1RXHIBP   | s1rxhibp: w1 Whether S takes meds for high blood pressure    | Categ |
| 2    | S2RXHIBP   | s2rxhibp: w2 Whether S takes meds for high blood pressure    | Categ |
| 3    | S3RXHIBP   | s3rxhibp: w3 Whether S takes meds for high blood pressure    | Categ |
| 4    | S4RXHIBP   | s4rxhibp: w4 Whether S takes meds for high blood pressure    | Categ |
| 5    | S5RXHIBP   | s5rxhibp: w5 Whether S takes meds for high blood pressure    | Categ |
| 1    | R1RXDIABO  | r1rxdiabo: w1 Whether R takes oral meds for diabetes         | Categ |
| 2    | R2RXDIABO  | r2rxdiabo: w2 Whether R takes oral meds for diabetes         | Categ |
| 3    | R3RXDIABO  | r3rxdiabo: w3 Whether R takes oral meds for diabetes         | Categ |
| 4    | R4RXDIABO  | r4rxdiabo: w4 Whether R takes oral meds for diabetes         | Categ |
| 5    | R5RXDIABO  | r5rxdiabo: w5 Whether R takes oral meds for diabetes         | Categ |
| 1    | S1RXDIABO  | s1rxdiabo: w1 Whether S takes oral meds for diabetes         | Categ |
| 2    | S2RXDIABO  | s2rxdiabo: w2 Whether S takes oral meds for diabetes         | Categ |
| 3    | S3RXDIABO  | s3rxdiabo: w3 Whether S takes oral meds for diabetes         | Categ |
| 4    | S4RXDIABO  | s4rxdiabo: w4 Whether S takes oral meds for diabetes         | Categ |
| 5    | S5RXDIABO  | s5rxdiabo: w5 Whether S takes oral meds for diabetes         | Categ |
| 1    | R1RXDIABI  | r1rxdiabi: w1 Whether R takes insulin for diabetes           | Categ |
| 2    | R2RXDIABI  | r2rxdiabi: w2 Whether R takes insulin for diabetes           | Categ |
| 3    | R3RXDIABI  | r3rxdiabi: w3 Whether R takes insulin for diabetes           | Categ |
| 4    | R4RXDIABI  | r4rxdiabi: w4 Whether R takes insulin for diabetes           | Categ |
| 5    | R5RXDIABI  | r5rxdiabi: w5 Whether R takes insulin for diabetes           | Categ |
| 1    | S1RXDIABI  | s1rxdiabi: w1 Whether S takes insulin for diabetes           | Categ |
| 2    | S2RXDIABI  | s2rxdiabi: w2 Whether S takes insulin for diabetes           | Categ |
| 3    | S3RXDIABI  | s3rxdiabi: w3 Whether S takes insulin for diabetes           | Categ |
| 4    | S4RXDIABI  | s4rxdiabi: w4 Whether S takes insulin for diabetes           | Categ |
| 5    | S5RXDIABI  | s5rxdiabi: w5 Whether S takes insulin for diabetes           | Categ |
| 1    | R1RXDIAB   | r1rxdiab: w1 Whether R takes meds for diabetes (oral or insu | Categ |
| 2    | R2RXDIAB   | r2rxdiab: w2 Whether R takes meds for diabetes (oral or insu | Categ |
| 3    | R3RXDIAB   | r3rxdiab: w3 Whether R takes meds for diabetes (oral or insu | Categ |
| 4    | R4RXDIAB   | r4rxdiab: w4 Whether R takes meds for diabetes (oral or insu | Categ |
| 5    | R5RXDIAB   | r5rxdiab: w5 Whether R takes meds for diabetes (oral or insu | Categ |
| 1    | S1RXDIAB   | s1rxdiab: w1 Whether S takes meds for diabetes (oral or inul | Categ |
| 2    | S2RXDIAB   | s2rxdiab: w2 Whether S takes meds for diabetes (oral or inul | Categ |
| 3    | S3RXDIAB   | s3rxdiab: w3 Whether S takes meds for diabetes (oral or inul | Categ |
| 4    | S4RXDIAB   | s4rxdiab: w4 Whether S takes meds for diabetes (oral or inul | Categ |
| 5    | S5RXDIAB   | s5rxdiab: w5 Whether S takes meds for diabetes (oral or inul | Categ |
| 1    | R1CNCRCHEM | r1cncrchem: w1 R received treatment for cancer (chemotherapy | Categ |
| 2    | R2CNCRCHEM | r2cncrchem: w2 R received treatment for cancer (chemotherapy | Categ |
| 3    | R3CNCRCHEM | r3cncrchem: w3 R received treatment for cancer (chemotherapy | Categ |
| 4    | R4CNCRCHEM | r4cncrchem: w4 R received treatment for cancer (chemotherapy | Categ |
| 5    | R5CNCRCHEM | r5cncrchem: w5 R received treatment for cancer (chemotherapy | Categ |
| 1    | S1CNCRCHEM | s1cncrchem: w1 S received treatment for cancer (chemotherapy | Categ |
| 2    | S2CNCRCHEM | s2cncrchem: w2 S received treatment for cancer (chemotherapy | Categ |
| 3    | S3CNCRCHEM | s3cncrchem: w3 S received treatment for cancer (chemotherapy | Categ |
| 4    | S4CNCRCHEM | s4cncrchem: w4 S received treatment for cancer (chemotherapy | Categ |
| 5    | S5CNCRCHEM | s5cncrchem: w5 S received treatment for cancer (chemotherapy | Categ |



|   |            |             |    |           |   |       |
|---|------------|-------------|----|-----------|---|-------|
| 1 | R1CNCRSURG | r1cncrsurg: | w1 | R         | received treatment for cancer (surgery)     | Categ |
| 2 | R2CNCRSURG | r2cncrsurg: | w2 | R         | received treatment for cancer (surgery)     | Categ |
| 3 | R3CNCRSURG | r3cncrsurg: | w3 | R         | received treatment for cancer (surgery)     | Categ |
| 4 | R4CNCRSURG | r4cncrsurg: | w4 | R         | received treatment for cancer (surgery)     | Categ |
| 5 | R5CNCRSURG | r5cncrsurg: | w5 | R         | received treatment for cancer (surgery)     | Categ |
|   |            |             |    |           |   |       |
| 1 | S1CNCRSURG | s1cncrsurg: | w1 | S         | received treatment for cancer (surgery)     | Categ |
| 2 | S2CNCRSURG | s2cncrsurg: | w2 | S         | received treatment for cancer (surgery)     | Categ |
| 3 | S3CNCRSURG | s3cncrsurg: | w3 | S         | received treatment for cancer (surgery)     | Categ |
| 4 | S4CNCRSURG | s4cncrsurg: | w4 | S         | received treatment for cancer (surgery)     | Categ |
| 5 | S5CNCRSURG | s5cncrsurg: | w5 | S         | received treatment for cancer (surgery)     | Categ |
|   |            |             |    |           |   |       |
| 1 | R1CNCRRADN | r1cnrradn:  | w1 | R         | received treatment for cancer (radiation/xr | Categ |
| 2 | R2CNCRRADN | r2cnrradn:  | w2 | R         | received treatment for cancer (radiation/xr | Categ |
| 3 | R3CNCRRADN | r3cnrradn:  | w3 | R         | received treatment for cancer (radiation/xr | Categ |
| 4 | R4CNCRRADN | r4cnrradn:  | w4 | R         | received treatment for cancer (radiation/xr | Categ |
| 5 | R5CNCRRADN | r5cnrradn:  | w5 | R         | received treatment for cancer (radiation/xr | Categ |
|   |            |             |    |           |   |       |
| 1 | S1CNCRRADN | s1cnrradn:  | w1 | S         | received treatment for cancer (radiation/xr | Categ |
| 2 | S2CNCRRADN | s2cnrradn:  | w2 | S         | received treatment for cancer (radiation/xr | Categ |
| 3 | S3CNCRRADN | s3cnrradn:  | w3 | S         | received treatment for cancer (radiation/xr | Categ |
| 4 | S4CNCRRADN | s4cnrradn:  | w4 | S         | received treatment for cancer (radiation/xr | Categ |
| 5 | S5CNCRRADN | s5cnrradn:  | w5 | S         | received treatment for cancer (radiation/xr | Categ |
|   |            |             |    |           |   |       |
| 1 | R1CNCRMEDS | r1cncrmeds: | w1 | R         | received treatment for cancer (meds for sym | Categ |
| 2 | R2CNCRMEDS | r2cncrmeds: | w2 | R         | received treatment for cancer (meds for sym | Categ |
| 3 | R3CNCRMEDS | r3cncrmeds: | w3 | R         | received treatment for cancer (meds for sym | Categ |
| 4 | R4CNCRMEDS | r4cncrmeds: | w4 | R         | received treatment for cancer (meds for sym | Categ |
| 5 | R5CNCRMEDS | r5cncrmeds: | w5 | R         | received treatment for cancer (meds for sym | Categ |
|   |            |             |    |           |   |       |
| 1 | S1CNCRMEDS | s1cncrmeds: | w1 | S         | received treatment for cancer (meds for sym | Categ |
| 2 | S2CNCRMEDS | s2cncrmeds: | w2 | S         | received treatment for cancer (meds for sym | Categ |
| 3 | S3CNCRMEDS | s3cncrmeds: | w3 | S         | received treatment for cancer (meds for sym | Categ |
| 4 | S4CNCRMEDS | s4cncrmeds: | w4 | S         | received treatment for cancer (meds for sym | Categ |
| 5 | S5CNCRMEDS | s5cncrmeds: | w5 | S         | received treatment for cancer (meds for sym | Categ |
|   |            |             |    |           |   |       |
| 1 | R1CNCROTHR | r1cncrothr: | w1 | R         | received treatment for cancer (other)       | Categ |
| 2 | R2CNCROTHR | r2cncrothr: | w2 | R         | received treatment for cancer (other)       | Categ |
| 3 | R3CNCROTHR | r3cncrothr: | w3 | R         | received treatment for cancer (other)       | Categ |
| 4 | R4CNCROTHR | r4cncrothr: | w4 | R         | received treatment for cancer (other)       | Categ |
| 5 | R5CNCROTHR | r5cncrothr: | w5 | R         | received treatment for cancer (other)       | Categ |
|   |            |             |    |           |   |       |
| 1 | S1CNCROTHR | s1cncrothr: | w1 | S         | received treatment for cancer (meds for sym | Categ |
| 2 | S2CNCROTHR | s2cncrothr: | w2 | S         | received treatment for cancer (meds for sym | Categ |
| 3 | S3CNCROTHR | s3cncrothr: | w3 | S         | received treatment for cancer (meds for sym | Categ |
| 4 | S4CNCROTHR | s4cncrothr: | w4 | S         | received treatment for cancer (meds for sym | Categ |
| 5 | S5CNCROTHR | s5cncrothr: | w5 | S         | received treatment for cancer (meds for sym | Categ |
|   |            |             |    |           |   |       |
| 1 | R1RXLUNG_M | r1rxlung_m: | w1 | Whether R | takes meds for lung disease                 | Categ |
| 2 | R2RXLUNG_M | r2rxlung_m: | w2 | Whether R | takes meds for lung disease                 | Categ |
| 3 | R3RXLUNG_M | r3rxlung_m: | w3 | Whether R | takes meds for lung disease                 | Categ |
| 4 | R4RXLUNG_M | r4rxlung_m: | w4 | Whether R | takes meds for lung disease                 | Categ |
| 5 | R5RXLUNG_M | r5rxlung_m: | w5 | Whether R | takes meds for lung disease                 | Categ |
|   |            |             |    |           |   |       |
| 1 | S1RXLUNG_M | s1rxlung_m: | w1 | Whether S | takes meds for lung disease                 | Categ |
| 2 | S2RXLUNG_M | s2rxlung_m: | w2 | Whether S | takes meds for lung disease                 | Categ |
| 3 | S3RXLUNG_M | s3rxlung_m: | w3 | Whether S | takes meds for lung disease                 | Categ |
| 4 | S4RXLUNG_M | s4rxlung_m: | w4 | Whether S | takes meds for lung disease                 | Categ |
| 5 | S5RXLUNG_M | s5rxlung_m: | w5 | Whether S | takes meds for lung disease                 | Categ |
|   |            |             |    |           |   |       |
| 1 | R1RXHRTAT  | r1rxhrtat:  | w1 | Whether R | takes meds for heart attack                 | Categ |
| 2 | R2RXHRTAT  | r2rxhrtat:  | w2 | Whether R | takes meds for heart attack                 | Categ |
| 3 | R3RXHRTAT  | r3rxhrtat:  | w3 | Whether R | takes meds for heart attack                 | Categ |

|   |           |  |       |
|---|-----------|--|-------|
| 4 | R4RXHRTAT | r4rxhrtat: w4 Whether R takes meds for heart attack    | Categ |
| 5 | R5RXHRTAT | r5rxhrtat: w5 Whether R takes meds for heart attack    | Categ |
| 1 | S1RXHRTAT | s1rxhrtat: w1 Whether S takes meds for heart attack    | Categ |
| 2 | S2RXHRTAT | s2rxhrtat: w2 Whether S takes meds for heart attack    | Categ |
| 3 | S3RXHRTAT | s3rxhrtat: w3 Whether S takes meds for heart attack    | Categ |
| 4 | S4RXHRTAT | s4rxhrtat: w4 Whether S takes meds for heart attack    | Categ |
| 5 | S5RXHRTAT | s5rxhrtat: w5 Whether S takes meds for heart attack    | Categ |
| 1 | R1RXSTROK | r1rxstrok: w1 Whether R takes medication for stroke    | Categ |
| 2 | R2RXSTROK | r2rxstrok: w2 Whether R takes medication for stroke    | Categ |
| 3 | R3RXSTROK | r3rxstrok: w3 Whether R takes medication for stroke    | Categ |
| 4 | R4RXSTROK | r4rxstrok: w4 Whether R takes medication for stroke    | Categ |
| 5 | R5RXSTROK | r5rxstrok: w5 Whether R takes medication for stroke    | Categ |
| 1 | S1RXSTROK | s1rxstrok: w1 Whether S takes medication for stroke    | Categ |
| 2 | S2RXSTROK | s2rxstrok: w2 Whether S takes medication for stroke    | Categ |
| 3 | S3RXSTROK | s3rxstrok: w3 Whether S takes medication for stroke    | Categ |
| 4 | S4RXSTROK | s4rxstrok: w4 Whether S takes medication for stroke    | Categ |
| 5 | S5RXSTROK | s5rxstrok: w5 Whether S takes medication for stroke    | Categ |
| 1 | R1RXARTHR | r1rxarthr: w1 Whether R takes medication for arthritis | Categ |
| 2 | R2RXARTHR | r2rxarthr: w2 Whether R takes medication for arthritis | Categ |
| 3 | R3RXARTHR | r3rxarthr: w3 Whether R takes medication for arthritis | Categ |
| 4 | R4RXARTHR | r4rxarthr: w4 Whether R takes medication for arthritis | Categ |
| 5 | R5RXARTHR | r5rxarthr: w5 Whether R takes medication for arthritis | Categ |
| 1 | S1RXARTHR | s1rxarthr: w1 Whether S takes medication for arthritis | Categ |
| 2 | S2RXARTHR | s2rxarthr: w2 Whether S takes medication for arthritis | Categ |
| 3 | S3RXARTHR | s3rxarthr: w3 Whether S takes medication for arthritis | Categ |
| 4 | S4RXARTHR | s4rxarthr: w4 Whether S takes medication for arthritis | Categ |
| 5 | S5RXARTHR | s5rxarthr: w5 Whether S takes medication for arthritis | Categ |

## Descriptive Statistics

| Variable  | N     | Mean | Std Dev | Minimum | Maximum |
|-----------|-------|------|---------|---------|---------|
| R1RXHIBP  | 14678 | 0.27 | 0.44    | 0.00    | 1.00    |
| R2RXHIBP  | 13651 | 0.28 | 0.45    | 0.00    | 1.00    |
| R3RXHIBP  | 15682 | 0.37 | 0.48    | 0.00    | 1.00    |
| R4RXHIBP  | 14754 | 0.41 | 0.49    | 0.00    | 1.00    |
| R5RXHIBP  | 17090 | 0.38 | 0.49    | 0.00    | 1.00    |
| S1RXHIBP  | 10284 | 0.25 | 0.43    | 0.00    | 1.00    |
| S2RXHIBP  | 9528  | 0.27 | 0.44    | 0.00    | 1.00    |
| S3RXHIBP  | 10569 | 0.35 | 0.48    | 0.00    | 1.00    |
| S4RXHIBP  | 9640  | 0.38 | 0.49    | 0.00    | 1.00    |
| S5RXHIBP  | 7628  | 0.41 | 0.49    | 0.00    | 1.00    |
| R1RXDIABO | 14713 | 0.13 | 0.34    | 0.00    | 1.00    |
| R2RXDIABO | 13649 | 0.14 | 0.35    | 0.00    | 1.00    |
| R3RXDIABO | 15688 | 0.20 | 0.40    | 0.00    | 1.00    |
| R4RXDIABO | 14758 | 0.22 | 0.42    | 0.00    | 1.00    |
| R5RXDIABO | 17083 | 0.22 | 0.41    | 0.00    | 1.00    |
| S1RXDIABO | 10309 | 0.13 | 0.34    | 0.00    | 1.00    |
| S2RXDIABO | 9524  | 0.14 | 0.35    | 0.00    | 1.00    |
| S3RXDIABO | 10577 | 0.20 | 0.40    | 0.00    | 1.00    |
| S4RXDIABO | 9642  | 0.22 | 0.42    | 0.00    | 1.00    |
| S5RXDIABO | 7624  | 0.24 | 0.43    | 0.00    | 1.00    |
| R1RXDIABI | 14709 | 0.02 | 0.13    | 0.00    | 1.00    |
| R2RXDIABI | 13646 | 0.02 | 0.14    | 0.00    | 1.00    |
| R3RXDIABI | 15687 | 0.04 | 0.19    | 0.00    | 1.00    |

|            |       |      |      |      |      |
|------------|-------|------|------|------|------|
| R4RXDIABI  | 14758 | 0.05 | 0.22 | 0.00 | 1.00 |
| R5RXDIABI  | 17080 | 0.06 | 0.24 | 0.00 | 1.00 |
| S1RXDIABI  | 10306 | 0.01 | 0.12 | 0.00 | 1.00 |
| S2RXDIABI  | 9521  | 0.02 | 0.14 | 0.00 | 1.00 |
| S3RXDIABI  | 10576 | 0.04 | 0.19 | 0.00 | 1.00 |
| S4RXDIABI  | 9642  | 0.05 | 0.22 | 0.00 | 1.00 |
| S5RXDIABI  | 7624  | 0.07 | 0.25 | 0.00 | 1.00 |
| R1RXDIAB   | 14713 | 0.13 | 0.34 | 0.00 | 1.00 |
| R2RXDIAB   | 13649 | 0.14 | 0.35 | 0.00 | 1.00 |
| R3RXDIAB   | 15688 | 0.21 | 0.40 | 0.00 | 1.00 |
| R4RXDIAB   | 14758 | 0.23 | 0.42 | 0.00 | 1.00 |
| R5RXDIAB   | 17082 | 0.23 | 0.42 | 0.00 | 1.00 |
| S1RXDIAB   | 10309 | 0.13 | 0.34 | 0.00 | 1.00 |
| S2RXDIAB   | 9524  | 0.14 | 0.35 | 0.00 | 1.00 |
| S3RXDIAB   | 10577 | 0.21 | 0.40 | 0.00 | 1.00 |
| S4RXDIAB   | 9642  | 0.23 | 0.42 | 0.00 | 1.00 |
| S5RXDIAB   | 7624  | 0.25 | 0.43 | 0.00 | 1.00 |
| R1CNCRCHEM | 14724 | 0.00 | 0.07 | 0.00 | 1.00 |
| R2CNCRCHEM | 13669 | 0.00 | 0.06 | 0.00 | 1.00 |
| R3CNCRCHEM | 15696 | 0.01 | 0.08 | 0.00 | 1.00 |
| R4CNCRCHEM | 14763 | 0.01 | 0.08 | 0.00 | 1.00 |
| R5CNCRCHEM | 17098 | 0.01 | 0.08 | 0.00 | 1.00 |
| S1CNCRCHEM | 10314 | 0.00 | 0.07 | 0.00 | 1.00 |
| S2CNCRCHEM | 9537  | 0.00 | 0.06 | 0.00 | 1.00 |
| S3CNCRCHEM | 10579 | 0.01 | 0.07 | 0.00 | 1.00 |
| S4CNCRCHEM | 9643  | 0.01 | 0.09 | 0.00 | 1.00 |
| S5CNCRCHEM | 7634  | 0.01 | 0.08 | 0.00 | 1.00 |
| R1CNCRSURG | 14724 | 0.01 | 0.09 | 0.00 | 1.00 |
| R2CNCRSURG | 13669 | 0.00 | 0.05 | 0.00 | 1.00 |
| R3CNCRSURG | 15696 | 0.01 | 0.07 | 0.00 | 1.00 |
| R4CNCRSURG | 14763 | 0.00 | 0.07 | 0.00 | 1.00 |
| R5CNCRSURG | 17098 | 0.01 | 0.08 | 0.00 | 1.00 |
| S1CNCRSURG | 10314 | 0.01 | 0.09 | 0.00 | 1.00 |
| S2CNCRSURG | 9537  | 0.00 | 0.05 | 0.00 | 1.00 |
| S3CNCRSURG | 10579 | 0.01 | 0.07 | 0.00 | 1.00 |
| S4CNCRSURG | 9643  | 0.01 | 0.07 | 0.00 | 1.00 |
| S5CNCRSURG | 7634  | 0.01 | 0.09 | 0.00 | 1.00 |
| R1CNCRRADN | 14724 | 0.00 | 0.06 | 0.00 | 1.00 |
| R2CNCRRADN | 13669 | 0.00 | 0.05 | 0.00 | 1.00 |
| R3CNCRRADN | 15696 | 0.00 | 0.05 | 0.00 | 1.00 |
| R4CNCRRADN | 14763 | 0.00 | 0.06 | 0.00 | 1.00 |
| R5CNCRRADN | 17098 | 0.00 | 0.06 | 0.00 | 1.00 |
| S1CNCRRADN | 10314 | 0.00 | 0.06 | 0.00 | 1.00 |
| S2CNCRRADN | 9537  | 0.00 | 0.05 | 0.00 | 1.00 |
| S3CNCRRADN | 10579 | 0.00 | 0.05 | 0.00 | 1.00 |
| S4CNCRRADN | 9643  | 0.00 | 0.06 | 0.00 | 1.00 |
| S5CNCRRADN | 7634  | 0.00 | 0.07 | 0.00 | 1.00 |
| R1CNCRMEDS | 14724 | 0.01 | 0.07 | 0.00 | 1.00 |
| R2CNCRMEDS | 13669 | 0.00 | 0.05 | 0.00 | 1.00 |
| R3CNCRMEDS | 15696 | 0.00 | 0.07 | 0.00 | 1.00 |
| R4CNCRMEDS | 14763 | 0.01 | 0.09 | 0.00 | 1.00 |
| R5CNCRMEDS | 17098 | 0.01 | 0.09 | 0.00 | 1.00 |
| S1CNCRMEDS | 10314 | 0.01 | 0.07 | 0.00 | 1.00 |

|            |       |      |      |      |      |
|------------|-------|------|------|------|------|
| S2CNCRMEDS | 9537  | 0.00 | 0.05 | 0.00 | 1.00 |
| S3CNCRMEDS | 10579 | 0.00 | 0.07 | 0.00 | 1.00 |
| S4CNCRMEDS | 9643  | 0.01 | 0.08 | 0.00 | 1.00 |
| S5CNCRMEDS | 7634  | 0.01 | 0.10 | 0.00 | 1.00 |
| R1CNCROTHR | 14724 | 0.00 | 0.04 | 0.00 | 1.00 |
| R2CNCROTHR | 13669 | 0.00 | 0.02 | 0.00 | 1.00 |
| R3CNCROTHR | 15696 | 0.00 | 0.03 | 0.00 | 1.00 |
| R4CNCROTHR | 14763 | 0.00 | 0.04 | 0.00 | 1.00 |
| R5CNCROTHR | 17098 | 0.00 | 0.00 | 0.00 | 0.00 |
| S1CNCROTHR | 10314 | 0.00 | 0.04 | 0.00 | 1.00 |
| S2CNCROTHR | 9537  | 0.00 | 0.02 | 0.00 | 1.00 |
| S3CNCROTHR | 10579 | 0.00 | 0.03 | 0.00 | 1.00 |
| S4CNCROTHR | 9643  | 0.00 | 0.04 | 0.00 | 1.00 |
| S5CNCROTHR | 7634  | 0.00 | 0.00 | 0.00 | 0.00 |
| R1RXLUNG_M | 14735 | 0.03 | 0.17 | 0.00 | 1.00 |
| R2RXLUNG_M | 13666 | 0.03 | 0.16 | 0.00 | 1.00 |
| R3RXLUNG_M | 15694 | 0.04 | 0.19 | 0.00 | 1.00 |
| R4RXLUNG_M | 14767 | 0.04 | 0.19 | 0.00 | 1.00 |
| R5RXLUNG_M | 17101 | 0.04 | 0.19 | 0.00 | 1.00 |
| S1RXLUNG_M | 10325 | 0.03 | 0.16 | 0.00 | 1.00 |
| S2RXLUNG_M | 9538  | 0.02 | 0.16 | 0.00 | 1.00 |
| S3RXLUNG_M | 10579 | 0.03 | 0.18 | 0.00 | 1.00 |
| S4RXLUNG_M | 9646  | 0.03 | 0.18 | 0.00 | 1.00 |
| S5RXLUNG_M | 7633  | 0.04 | 0.19 | 0.00 | 1.00 |
| R1RXHRTAT  | 14727 | 0.02 | 0.15 | 0.00 | 1.00 |
| R2RXHRTAT  | 13683 | 0.02 | 0.13 | 0.00 | 1.00 |
| R3RXHRTAT  | 15698 | 0.03 | 0.16 | 0.00 | 1.00 |
| R4RXHRTAT  | 14765 | 0.03 | 0.16 | 0.00 | 1.00 |
| R5RXHRTAT  | 17101 | 0.03 | 0.16 | 0.00 | 1.00 |
| S1RXHRTAT  | 10322 | 0.02 | 0.15 | 0.00 | 1.00 |
| S2RXHRTAT  | 9550  | 0.02 | 0.13 | 0.00 | 1.00 |
| S3RXHRTAT  | 10578 | 0.03 | 0.16 | 0.00 | 1.00 |
| S4RXHRTAT  | 9645  | 0.03 | 0.16 | 0.00 | 1.00 |
| S5RXHRTAT  | 7635  | 0.03 | 0.18 | 0.00 | 1.00 |
| R1RXSTROK  | 14728 | 0.01 | 0.11 | 0.00 | 1.00 |
| R2RXSTROK  | 13695 | 0.01 | 0.09 | 0.00 | 1.00 |
| R3RXSTROK  | 15706 | 0.01 | 0.11 | 0.00 | 1.00 |
| R4RXSTROK  | 14761 | 0.01 | 0.11 | 0.00 | 1.00 |
| R5RXSTROK  | 17104 | 0.01 | 0.12 | 0.00 | 1.00 |
| S1RXSTROK  | 10322 | 0.01 | 0.11 | 0.00 | 1.00 |
| S2RXSTROK  | 9558  | 0.01 | 0.09 | 0.00 | 1.00 |
| S3RXSTROK  | 10584 | 0.01 | 0.11 | 0.00 | 1.00 |
| S4RXSTROK  | 9643  | 0.01 | 0.10 | 0.00 | 1.00 |
| S5RXSTROK  | 7634  | 0.01 | 0.12 | 0.00 | 1.00 |
| R1RXARTHR  | 14712 | 0.11 | 0.32 | 0.00 | 1.00 |
| R2RXARTHR  | 13681 | 0.11 | 0.32 | 0.00 | 1.00 |
| R3RXARTHR  | 15690 | 0.08 | 0.28 | 0.00 | 1.00 |
| R4RXARTHR  | 14755 | 0.09 | 0.29 | 0.00 | 1.00 |
| R5RXARTHR  | 17087 | 0.07 | 0.26 | 0.00 | 1.00 |
| S1RXARTHR  | 10308 | 0.10 | 0.30 | 0.00 | 1.00 |
| S2RXARTHR  | 9550  | 0.10 | 0.30 | 0.00 | 1.00 |
| S3RXARTHR  | 10571 | 0.07 | 0.26 | 0.00 | 1.00 |
| S4RXARTHR  | 9637  | 0.08 | 0.27 | 0.00 | 1.00 |
| S5RXARTHR  | 7628  | 0.07 | 0.26 | 0.00 | 1.00 |

## Categorical Variable Codes

| Value----- | R1RXHIBP | R2RXHIBP | R3RXHIBP | R4RXHIBP | R5RXHIBP |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 57       | 53       | 37       | 22       | 18       |
| .m:Missing | 4        |          |          |          |          |
| .r:Refuse  | 52       |          | 4        | 3        | 6        |
| .s:Skip    | 395      |          |          |          |          |
| 0.no       | 10751    | 9791     | 9915     | 8765     | 10577    |
| 1.yes      | 3927     | 3860     | 5767     | 5989     | 6513     |

| Value----- | S1RXHIBP | S2RXHIBP | S3RXHIBP | S4RXHIBP | S5RXHIBP |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 39       | 36       | 21       | 11       | 8        |
| .m:Missing | 3        |          |          |          |          |
| .r:Refuse  | 39       |          | 2        | 1        | 2        |
| .s:Skip    | 283      |          |          |          |          |
| .u:Unmar   | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR   | 333      | 131      | 349      | 280      | 501      |
| 0.no       | 7739     | 6967     | 6920     | 5967     | 4472     |
| 1.yes      | 2545     | 2561     | 3649     | 3673     | 3156     |

| Value----- | R1RXDIABO | R2RXDIABO | R3RXDIABO | R4RXDIABO | R5RXDIABO |
|------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK      | 39        | 53        | 30        | 17        | 27        |
| .m:Missing | 4         |           |           |           |           |
| .r:Refuse  | 35        | 2         | 5         | 4         | 4         |
| .s:Skip    | 395       |           |           |           |           |
| 0.no       | 12794     | 11729     | 12495     | 11474     | 13312     |
| 1.yes      | 1919      | 1920      | 3193      | 3284      | 3771      |

| Value----- | S1RXDIABO | S2RXDIABO | S3RXDIABO | S4RXDIABO | S5RXDIABO |
|------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK      | 28        | 39        | 13        | 8         | 13        |
| .m:Missing | 3         |           |           |           |           |
| .r:Refuse  | 25        | 1         | 2         | 2         | 1         |
| .s:Skip    | 283       |           |           |           |           |
| .u:Unmar   | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR   | 333       | 131       | 349       | 280       | 501       |
| 0.no       | 8960      | 8176      | 8435      | 7491      | 5774      |
| 1.yes      | 1349      | 1348      | 2142      | 2151      | 1850      |

| Value----- | R1RXDIABI | R2RXDIABI | R3RXDIABI | R4RXDIABI | R5RXDIABI |
|------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK      | 41        | 55        | 30        | 17        | 28        |
| .m:Missing | 4         |           |           |           |           |
| .r:Refuse  | 37        | 3         | 6         | 4         | 6         |
| .s:Skip    | 395       |           |           |           |           |
| 0.no       | 14475     | 13362     | 15102     | 13993     | 16023     |
| 1.yes      | 234       | 284       | 585       | 765       | 1057      |

| Value----- | S1RXDIABI | S2RXDIABI | S3RXDIABI | S4RXDIABI | S5RXDIABI |
|------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK      | 29        | 41        | 14        | 8         | 13        |
| .m:Missing | 3         |           |           |           |           |
| .r:Refuse  | 27        | 2         | 2         | 2         | 1         |
| .s:Skip    | 283       |           |           |           |           |
| .u:Unmar   | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR   | 333       | 131       | 349       | 280       | 501       |
| 0.no       | 10152     | 9330      | 10195     | 9144      | 7092      |
| 1.yes      | 154       | 191       | 381       | 498       | 532       |

| Value----- | R1RXDIAB | R2RXDIAB | R3RXDIAB | R4RXDIAB | R5RXDIAB |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 39       | 53       | 30       | 17       | 27       |
| .m:Missing | 4        |          |          |          |          |
| .r:Refuse  | 35       | 2        | 5        | 4        | 5        |
| .s:Skip    | 395      |          |          |          |          |
| 0.no       | 12768    | 11694    | 12445    | 11391    | 13212    |
| 1.yes      | 1945     | 1955     | 3243     | 3367     | 3870     |

| Value----- | S1RXDIAB | S2RXDIAB | S3RXDIAB | S4RXDIAB | S5RXDIAB |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 28       | 39       | 13       | 8        | 13       |
| .m:Missing | 3        |          |          |          |          |
| .r:Refuse  | 25       | 1        | 2        | 2        | 1        |
| .s:Skip    | 283      |          |          |          |          |
| .u:Unmar   | 4205     | 4009     | 4782     | 4847     | 5227     |

|            |            |            |            |            |            |
|------------|------------|------------|------------|------------|------------|
| .v:SP NR   | 333        | 131        | 349        | 280        | 501        |
| 0.no       | 8944       | 8153       | 8405       | 7436       | 5726       |
| 1.yes      | 1365       | 1371       | 2172       | 2206       | 1898       |
| Value----- | R1CNCRCHEM | R2CNCRCHEM | R3CNCRCHEM | R4CNCRCHEM | R5CNCRCHEM |
| .d:DK      | 28         | 35         | 22         | 14         | 12         |
| .m:Missing | 4          |            |            |            |            |
| .r:Refuse  | 35         |            | 5          | 2          | 4          |
| .s:Skip    | 395        |            |            |            |            |
| 0.no       | 14657      | 13627      | 15598      | 14656      | 16991      |
| 1.yes      | 67         | 42         | 98         | 107        | 107        |
| Value----- | S1CNCRCHEM | S2CNCRCHEM | S3CNCRCHEM | S4CNCRCHEM | S5CNCRCHEM |
| .d:DK      | 23         | 27         | 10         | 9          | 3          |
| .m:Missing | 3          |            |            |            |            |
| .r:Refuse  | 25         |            | 3          |            | 1          |
| .s:Skip    | 283        |            |            |            |            |
| .u:Unmar   | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR   | 333        | 131        | 349        | 280        | 501        |
| 0.no       | 10267      | 9507       | 10521      | 9568       | 7580       |
| 1.yes      | 47         | 30         | 58         | 75         | 54         |
| Value----- | R1CNCRSURG | R2CNCRSURG | R3CNCRSURG | R4CNCRSURG | R5CNCRSURG |
| .d:DK      | 28         | 35         | 22         | 14         | 12         |
| .m:Missing | 4          |            |            |            |            |
| .r:Refuse  | 35         |            | 5          | 2          | 4          |
| .s:Skip    | 395        |            |            |            |            |
| 0.no       | 14613      | 13637      | 15613      | 14691      | 16990      |
| 1.yes      | 111        | 32         | 83         | 72         | 108        |
| Value----- | S1CNCRSURG | S2CNCRSURG | S3CNCRSURG | S4CNCRSURG | S5CNCRSURG |
| .d:DK      | 23         | 27         | 10         | 9          | 3          |
| .m:Missing | 3          |            |            |            |            |
| .r:Refuse  | 25         |            | 3          |            | 1          |
| .s:Skip    | 283        |            |            |            |            |
| .u:Unmar   | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR   | 333        | 131        | 349        | 280        | 501        |
| 0.no       | 10231      | 9513       | 10526      | 9592       | 7578       |
| 1.yes      | 83         | 24         | 53         | 51         | 56         |
| Value----- | R1CNCRRADN | R2CNCRRADN | R3CNCRRADN | R4CNCRRADN | R5CNCRRADN |
| .d:DK      | 28         | 35         | 22         | 14         | 12         |
| .m:Missing | 4          |            |            |            |            |
| .r:Refuse  | 35         |            | 5          | 2          | 4          |
| .s:Skip    | 395        |            |            |            |            |
| 0.no       | 14663      | 13635      | 15652      | 14709      | 17034      |
| 1.yes      | 61         | 34         | 44         | 54         | 64         |
| Value----- | S1CNCRRADN | S2CNCRRADN | S3CNCRRADN | S4CNCRRADN | S5CNCRRADN |
| .d:DK      | 23         | 27         | 10         | 9          | 3          |
| .m:Missing | 3          |            |            |            |            |
| .r:Refuse  | 25         |            | 3          |            | 1          |
| .s:Skip    | 283        |            |            |            |            |
| .u:Unmar   | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR   | 333        | 131        | 349        | 280        | 501        |
| 0.no       | 10271      | 9514       | 10552      | 9603       | 7601       |
| 1.yes      | 43         | 23         | 27         | 40         | 33         |
| Value----- | R1CNCRMEDS | R2CNCRMEDS | R3CNCRMEDS | R4CNCRMEDS | R5CNCRMEDS |
| .d:DK      | 28         | 35         | 22         | 14         | 12         |
| .m:Missing | 4          |            |            |            |            |
| .r:Refuse  | 35         |            | 5          | 2          | 4          |
| .s:Skip    | 395        |            |            |            |            |
| 0.no       | 14646      | 13630      | 15624      | 14653      | 16943      |
| 1.yes      | 78         | 39         | 72         | 110        | 155        |
| Value----- | S1CNCRMEDS | S2CNCRMEDS | S3CNCRMEDS | S4CNCRMEDS | S5CNCRMEDS |
| .d:DK      | 23         | 27         | 10         | 9          | 3          |
| .m:Missing | 3          |            |            |            |            |
| .r:Refuse  | 25         |            | 3          |            | 1          |
| .s:Skip    | 283        |            |            |            |            |
| .u:Unmar   | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR   | 333        | 131        | 349        | 280        | 501        |

|            |            |            |            |            |            |
|------------|------------|------------|------------|------------|------------|
| 0.no       | 10257      | 9513       | 10530      | 9573       | 7553       |
| 1.yes      | 57         | 24         | 49         | 70         | 81         |
| Value----- | R1CNCROTHR | R2CNCROTHR | R3CNCROTHR | R4CNCROTHR | R5CNCROTHR |
| .d:DK      | 28         | 35         | 22         | 14         | 12         |
| .m:Missing | 4          |            |            |            |            |
| .r:Refuse  | 35         |            | 5          | 2          | 4          |
| .s:Skip    | 395        |            |            |            |            |
| 0.no       | 14703      | 13663      | 15677      | 14741      | 17098      |
| 1.yes      | 21         | 6          | 19         | 22         |            |
| Value----- | S1CNCROTHR | S2CNCROTHR | S3CNCROTHR | S4CNCROTHR | S5CNCROTHR |
| .d:DK      | 23         | 27         | 10         | 9          | 3          |
| .m:Missing | 3          |            |            |            |            |
| .r:Refuse  | 25         |            | 3          |            | 1          |
| .s:Skip    | 283        |            |            |            |            |
| .u:Unmar   | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR   | 333        | 131        | 349        | 280        | 501        |
| 0.no       | 10299      | 9533       | 10569      | 9628       | 7634       |
| 1.yes      | 15         | 4          | 10         | 15         |            |
| Value----- | R1RXLUNG_M | R2RXLUNG_M | R3RXLUNG_M | R4RXLUNG_M | R5RXLUNG_M |
| .d:DK      | 16         | 35         | 25         | 8          | 7          |
| .m:Missing | 4          |            |            |            |            |
| .r:Refuse  | 36         | 3          | 4          | 4          | 6          |
| .s:Skip    | 395        |            |            |            |            |
| 0.no       | 14310      | 13285      | 15130      | 14234      | 16466      |
| 1.yes      | 425        | 381        | 564        | 533        | 635        |
| Value----- | S1RXLUNG_M | S2RXLUNG_M | S3RXLUNG_M | S4RXLUNG_M | S5RXLUNG_M |
| .d:DK      | 10         | 25         | 11         | 3          | 3          |
| .m:Missing | 3          |            |            |            |            |
| .r:Refuse  | 27         | 1          | 2          | 3          | 2          |
| .s:Skip    | 283        |            |            |            |            |
| .u:Unmar   | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR   | 333        | 131        | 349        | 280        | 501        |
| 0.no       | 10048      | 9302       | 10232      | 9327       | 7331       |
| 1.yes      | 277        | 236        | 347        | 319        | 302        |
| Value----- | R1RXHRTAT  | R2RXHRTAT  | R3RXHRTAT  | R4RXHRTAT  | R5RXHRTAT  |
| .d:DK      | 24         | 18         | 18         | 11         | 7          |
| .m:Missing | 4          |            |            | 1          |            |
| .r:Refuse  | 36         | 3          | 7          | 2          | 6          |
| .s:Skip    | 395        |            |            |            |            |
| 0.no       | 14391      | 13437      | 15285      | 14382      | 16641      |
| 1.yes      | 336        | 246        | 413        | 383        | 460        |
| Value----- | S1RXHRTAT  | S2RXHRTAT  | S3RXHRTAT  | S4RXHRTAT  | S5RXHRTAT  |
| .d:DK      | 15         | 11         | 8          | 5          | 3          |
| .m:Missing | 3          |            |            |            |            |
| .r:Refuse  | 25         | 3          | 6          | 2          |            |
| .s:Skip    | 283        |            |            |            |            |
| .u:Unmar   | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR   | 333        | 131        | 349        | 280        | 501        |
| 0.no       | 10078      | 9378       | 10298      | 9384       | 7389       |
| 1.yes      | 244        | 172        | 280        | 261        | 246        |
| Value----- | R1RXSTROK  | R2RXSTROK  | R3RXSTROK  | R4RXSTROK  | R5RXSTROK  |
| .d:DK      | 20         | 8          | 13         | 13         | 5          |
| .m:Missing | 4          |            |            | 1          |            |
| .r:Refuse  | 39         | 1          | 4          | 4          | 5          |
| .s:Skip    | 395        |            |            |            |            |
| 0.no       | 14534      | 13577      | 15506      | 14594      | 16865      |
| 1.yes      | 194        | 118        | 200        | 167        | 239        |
| Value----- | S1RXSTROK  | S2RXSTROK  | S3RXSTROK  | S4RXSTROK  | S5RXSTROK  |
| .d:DK      | 13         | 5          | 5          | 7          | 2          |
| .m:Missing | 3          |            |            |            |            |
| .r:Refuse  | 27         | 1          | 3          | 2          | 2          |
| .s:Skip    | 283        |            |            |            |            |
| .u:Unmar   | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR   | 333        | 131        | 349        | 280        | 501        |
| 0.no       | 10189      | 9485       | 10452      | 9541       | 7526       |

|            |  |           |           |           |           |           |
|------------|--|-----------|-----------|-----------|-----------|-----------|
| 1.yes      |  | 133       | 73        | 132       | 102       | 108       |
| Value----- |  | R1RXARTHR | R2RXARTHR | R3RXARTHR | R4RXARTHR | R5RXARTHR |
| .d:DK      |  | 37        | 23        | 28        | 17        | 20        |
| .m:Missing |  | 4         |           |           | 1         |           |
| .r:Refuse  |  | 38        |           | 5         | 6         | 7         |
| .s:Skip    |  | 395       |           |           |           |           |
| 0.no       |  | 13047     | 12122     | 14362     | 13410     | 15834     |
| 1.yes      |  | 1665      | 1559      | 1328      | 1345      | 1253      |
| Value----- |  | S1RXARTHR | S2RXARTHR | S3RXARTHR | S4RXARTHR | S5RXARTHR |
| .d:DK      |  | 28        | 14        | 17        | 11        | 6         |
| .m:Missing |  | 3         |           |           |           |           |
| .r:Refuse  |  | 26        |           | 4         | 4         | 4         |
| .s:Skip    |  | 283       |           |           |           |           |
| .u:Unmar   |  | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR   |  | 333       | 131       | 349       | 280       | 501       |
| 0.no       |  | 9315      | 8592      | 9802      | 8890      | 7074      |
| 1.yes      |  | 993       | 958       | 769       | 747       | 554       |

## How Constructed

RwRXHIBP, RwRXDIABO, RwRXDIABI, RwRXDIAB, RwcNCRCHEM, RwcNCRSURG, RwcNCRRADN, RwcNCRMEDS, RwcCNCROTHR, RwRXLUNG\_M, RwRXHRTAT, RwRXSTROK, and RwRXARTHR indicate whether the respondent takes medication or receives treatment for a condition. These variables are coded as 1.Yes if the respondent takes medication for the condition, and 0.No if the respondent doesn't take said medication or if the respondent did not report having the condition. When respondents "don't know" or refuse to answer, RwRXHIBP, RwRXDIABO, RwRXDIABI, RwRXDIAB, RwcNCRCHEM, RwcNCRSURG, RwcNCRRADN, RwcNCRMEDS, RwcCNCROTHR, RwRXLUNG\_M, RwRXHRTAT, RwRXSTROK, and RwRXARTHR are assigned special missing values .d or .r, respectively. Other missing responses are assigned special missing value .m. These variables are set to plain missing (.) for respondents who did not respond to the current wave.

RwRXHIBP indicates whether the respondent takes medication for hypertension or high blood pressure, and is coded as 0.No if the respondent did not report taking medication for or does not have high blood pressure or hypertension. The respondent is asked about taking medication to lower blood pressure after reporting a hypertension or high blood pressure diagnosis.

RwRXDIABO indicates whether the respondent takes oral medication for diabetes, RwRXDIABI indicates whether the respondent uses insulin shots for diabetes, and RwRXDIAB indicates whether the respondent uses any medication (oral medication or insulin shots) for diabetes. They are coded as 0.No if the respondent did not report taking medication for or does not have diabetes. The respondent is asked about taking medication for diabetes after reporting a diabetes diagnosis.

If the respondent has been diagnosed with cancer, the respondent is presented with a list of cancer treatments and asked which treatment(s) they have received. RwcNCRCHEM indicates whether the respondent receives chemotherapy or medication for the treatment of cancer. RwcNCRSURG indicates whether the respondent had surgery or biopsy for the treatment of cancer. RwcNCRRADN indicates whether the respondent had radiation or x-ray for the treatment of cancer. RwcNCRMEDS indicates whether the respondent receives medications or treatment for symptoms (pain, nausea, rashes) for the treatment of cancer. RwcCNCROTHR indicates whether the respondent had another unspecified type of treatment for cancer. If the respondent has been diagnosed with cancer but has not been treated for cancer, RwcNCRCHEM, RwcNCRSURG, RwcNCRRADN, RwcNCRMEDS, and RwcCNCROTHR are set to 0. RwcNCRCHEM, RwcNCRSURG, RwcNCRRADN, RwcNCRMEDS, and RwcCNCROTHR are coded as 0.No if the respondent has never been diagnosed with cancer.

RwRXLUNG\_M indicates whether the respondent takes medication for a respiratory illness, such as asthma or emphysema, and is coded as 0.No if the respondent did not report taking medication for or does not have chronic respiratory illness. The respondent is asked about taking medication for lung disease after reporting a respiratory illness, such as asthma or emphysema.

RwRXHRTAT indicates whether the respondent takes medication for a heart attack, and is coded as 0.No if the respondent did not report taking medication for or has not had a heart attack. The respondent is asked about taking medication for a heart attack after reporting having had a heart attack.

RwRXSTROK indicates whether the respondent takes medication for stroke, and is coded as 0.No if the respondent did not report taking medication for or has not had a stroke. The respondent is asked about taking medication for stroke after reporting a stroke.



RwRXARTHR indicates whether the respondent takes medication for arthritis, and is coded as 0.No if the respondent did not report taking medication for or does not have arthritis or rheumatism. The respondent is asked about taking medication after reporting a diagnosis of arthritis or rheumatism.

SwRXHIBP, SwRXDIABO, SwRXDIABI, SwRXDIAB, SwCNCRCHEM, SwCNCRSURG, SwCNCRRADN, SwCNCRMEDS, SwCNCROTHR, SwRXRLUNG\_M, SwRXHRTAT, SwRXSTROK, and SwRXARTHR indicate whether the respondent's current wave's spouse takes medication or receives treatment for the specified condition, and are taken from corresponding respondent variables. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

No differences known.

## MHAS Variables Used

### Wave 1:

|      |                                    |
|------|------------------------------------|
| C12  | cancer or tumor                    |
| C16A | chemotherapy                       |
| C16B | surgery or biopsy                  |
| C16C | radiation                          |
| C16D | medication for cancer              |
| C16E | other treatment for cancer         |
| C19  | respiratory illness                |
| C20  | medication for respiratory illness |
| C22  | heart attack                       |
| C24  | medication for heart attack        |
| C27  | stroke                             |
| C30  | medication for stroke              |
| C34  | arthritis or rheumatism            |
| C37  | medication for arthritis           |
| C4   | hypertension                       |
| C5   | medication for blood pressure      |
| C6   | diabetes                           |
| C7   | medication for diabetes            |
| C8   | insulin use                        |

### Wave 2:

|       |  |
|-------|--|
| C12   | doctor ever say you have cancer                |
| C16_1 | cancer treatments received since 2001          |
| C16_2 | cancer treatments received since 2001          |
| C16_3 | cancer treatments received since 2001          |
| C16_4 | cancer treatments received since 2001          |
| C16_5 | cancer treatments received since 2001          |
| C19   | doctor ever say you have a respiratory disease |
| C20   | taking medicine to control respiratory disease |
| C22A  | doctor ever say you had a heart attack         |
| C23   | taking medicine to control heart disease       |
| C26   | doctor ever say you had a stroke               |
| C28   | taking medicine due to stroke                  |
| C32   | doctor ever say you have arthritis             |
| C34   | taking medication/treatments                   |
| C4    | doctor ever say you have hypertension          |
| C5    | take medicine to lower blood pressure          |
| C6    | doctor ever say you have diabetes              |
| C7    | taking oral medicine to control diabetes       |
| C8    | taking injections or using an insulin pump     |

## Wave 3:

|          |   |
|----------|---|
| C12_12   | Has a physician diagnosed respondent...cancer             |
| C16_1_12 | Last 2 years:Type of cancer treatment respondent receiv   |
| C16_2_12 | Last 2 years:Type of cancer treatment respondent receiv   |
| C16_3_12 | Last 2 years:Type of cancer treatment respondent receiv   |
| C16_4_12 | Last 2 years:Type of cancer treatment respondent receiv   |
| C16_5_12 | Last 2 years:Type of cancer treatment respondent receiv   |
| C16_7_12 | Last 2 years:Type of cancer treatment respondent receiv   |
| C19_12   | Has a physician diagnosed respondent...respiratory illnes |
| C20A_12  | Does respondent take medication/treatment for respirato   |
| C22A_12  | Has a physician ever told respondent...heart attack       |
| C23_12   | Respondent takes medication for heart condition           |
| C26_12   | Ever/last 2 years:Has a physician told respondent...stro  |
| C28_12   | Respondent takes medication for stroke                    |
| C32_12   | Has a physician diagnosed respondent with arthritis/rhe   |
| C34_12   | Respondent takes medication for arthritis/rheumatism      |
| C4_12    | Has a physician diagnosed...hypertension/high blood press |
| C5_12    | Does respondent take medication to lower his/her blood    |
| C6_12    | Has a physician diagnosed respondent...diabetes           |
| C7_12    | Does respondent take medication to control his/her diab   |
| C8_12    | Does the respondent use insulin                           |

## Wave 4:

|          |   |
|----------|---|
| C12_15   | Has a doctor or medical personnel ever diagnosed respon |
| C16_1_15 | Last 2 years, type of cancer treatment received: Chemot |
| C16_2_15 | Last 2 years, type of cancer treatment received: Surger |
| C16_3_15 | Last 2 years, type of cancer treatment received: Radiat |
| C16_4_15 | Last 2 years, type of cancer treatment received: Medica |
| C16_5_15 | Last 2 years, type of cancer treatment received: None   |
| C16_7_15 | Last 2 years, type of cancer treatment received: Other  |
| C19_15   | Has a doctor or medical personnel ever diagnosed respon |
| C20A_15  | Does respondent take medication/treatment for his/her r |
| C22A_15  | Has a doctor or medical personnel ever told respondent  |
| C23_15   | Does respondent take medication for his/her heart condi |
| C26_15   | Has a doctor or medical personnel ever told respondent  |
| C28_15   | Does respondent take medication for stroke              |
| C32_15   | Has a doctor or medical personnel ever diagnosed respon |
| C34_15   | Does respondent take medication for arthritis/rheumatis |
| C4_15    | Has a doctor or medical personnel ever diagnosed respon |
| C5_15    | Does respondent take medication to lower his/her blood  |
| C6_15    | Has a doctor or medical personnel ever diagnosed respon |
| C7_15    | Does respondent take medication to control his/her diab |
| C8_15    | Does respondent use insulin shots                       |

## Wave 5:

|         |   |
|---------|---|
| C19_18  | Has a doctor or medical personnel ever diagnosed R with |
| C20A_18 | Does R take medication/treatment for his/her respirator |
| C22A_18 | Has a doctor or medical personnel ever told R he/she ha |
| C23_18  | Does R take medication for his/her heart condition      |
| C26_18  | Has a doctor or medical personnel ever told R he/she ha |
| C28_18  | Does R take medication for stroke                       |
| C32_18  | Has a doctor or medical personnel ever diagnosed R with |
| C34_18  | Does R take medication for arthritis/rheumatism         |
| C4_18   | Has R ever been diagnosed with hypertension/high blood  |
| C5_18   | Does R take medication to lower his/her blood pressure  |
| C6_18   | Has a doctor or medical personnel ever diagnosed R with |
| C7_18   | Does R take medication to control his/her diabetes      |
| C8_18   | Does R use insulin shots                                |

|   |
|---|
| <b>Doctor Diagnosed Diseases: Whether Disease Limits Activity</b> |
|---|

| Wave | Variable    | Label  | Type  |
|------|-------------|--|-------|
| 1    | R1LUNGLMT_M | r1lunglmt_m: w1 Whether lung problems limits R's daily activ | Categ |
| 2    | R2LUNGLMT_M | r2lunglmt_m: w2 Whether lung problems limits R's daily activ | Categ |
| 3    | R3LUNGLMT_M | r3lunglmt_m: w3 Whether lung problems limits R's daily activ | Categ |
| 4    | R4LUNGLMT_M | r4lunglmt_m: w4 Whether lung problems limits R's daily activ | Categ |
| 5    | R5LUNGLMT_M | r5lunglmt_m: w5 Whether lung problems limits R's daily activ | Categ |
| 1    | S1LUNGLMT_M | s1lunglmt_m: w1 Whether lung problems limits S's daily activ | Categ |
| 2    | S2LUNGLMT_M | s2lunglmt_m: w2 Whether lung problems limits S's daily activ | Categ |
| 3    | S3LUNGLMT_M | s3lunglmt_m: w3 Whether lung problems limits S's daily activ | Categ |
| 4    | S4LUNGLMT_M | s4lunglmt_m: w4 Whether lung problems limits S's daily activ | Categ |
| 5    | S5LUNGLMT_M | s5lunglmt_m: w5 Whether lung problems limits S's daily activ | Categ |
| 1    | R1HRTATLMT  | r1hrtatlmt: w1 Whether heart attack limits R's daily activit | Categ |
| 2    | R2HRTATLMT  | r2hrtatlmt: w2 Whether heart attack limits R's daily activit | Categ |
| 3    | R3HRTATLMT  | r3hrtatlmt: w3 Whether heart attack limits R's daily activit | Categ |
| 4    | R4HRTATLMT  | r4hrtatlmt: w4 Whether heart attack limits R's daily activit | Categ |
| 5    | R5HRTATLMT  | r5hrtatlmt: w5 Whether heart attack limits R's daily activit | Categ |
| 1    | S1HRTATLMT  | s1hrtatlmt: w1 Whether heart attack limits S's daily activit | Categ |
| 2    | S2HRTATLMT  | s2hrtatlmt: w2 Whether heart attack limits S's daily activit | Categ |
| 3    | S3HRTATLMT  | s3hrtatlmt: w3 Whether heart attack limits S's daily activit | Categ |
| 4    | S4HRTATLMT  | s4hrtatlmt: w4 Whether heart attack limits S's daily activit | Categ |
| 5    | S5HRTATLMT  | s5hrtatlmt: w5 Whether heart attack limits S's daily activit | Categ |
| 1    | R1STROKLMT  | r1strokltmt: w1 Whether stroke limits R's daily activities   | Categ |
| 2    | R2STROKLMT  | r2strokltmt: w2 Whether stroke limits R's daily activities   | Categ |
| 3    | R3STROKLMT  | r3strokltmt: w3 Whether stroke limits R's daily activities   | Categ |
| 4    | R4STROKLMT  | r4strokltmt: w4 Whether stroke limits R's daily activities   | Categ |
| 5    | R5STROKLMT  | r5strokltmt: w5 Whether stroke limits R's daily activities   | Categ |
| 1    | S1STROKLMT  | s1strokltmt: w1 Whether stroke limits S's daily activities   | Categ |
| 2    | S2STROKLMT  | s2strokltmt: w2 Whether stroke limits S's daily activities   | Categ |
| 3    | S3STROKLMT  | s3strokltmt: w3 Whether stroke limits S's daily activities   | Categ |
| 4    | S4STROKLMT  | s4strokltmt: w4 Whether stroke limits S's daily activities   | Categ |
| 5    | S5STROKLMT  | s5strokltmt: w5 Whether stroke limits S's daily activities   | Categ |
| 1    | R1ARTHLMT   | r1arthlmt: w1 Whether arthritis limits R's daily activities  | Categ |
| 2    | R2ARTHLMT   | r2arthlmt: w2 Whether arthritis limits R's daily activities  | Categ |
| 3    | R3ARTHLMT   | r3arthlmt: w3 Whether arthritis limits R's daily activities  | Categ |
| 4    | R4ARTHLMT   | r4arthlmt: w4 Whether arthritis limits R's daily activities  | Categ |
| 5    | R5ARTHLMT   | r5arthlmt: w5 Whether arthritis limits R's daily activities  | Categ |
| 1    | S1ARTHLMT   | s1arthlmt: w1 Whether arthritis limits S's daily activities  | Categ |
| 2    | S2ARTHLMT   | s2arthlmt: w2 Whether arthritis limits S's daily activities  | Categ |
| 3    | S3ARTHLMT   | s3arthlmt: w3 Whether arthritis limits S's daily activities  | Categ |
| 4    | S4ARTHLMT   | s4arthlmt: w4 Whether arthritis limits S's daily activities  | Categ |
| 5    | S5ARTHLMT   | s5arthlmt: w5 Whether arthritis limits S's daily activities  | Categ |

## Descriptive Statistics

| Variable    | N   | Mean | Std Dev | Minimum | Maximum |
|-------------|-----|------|---------|---------|---------|
| R1LUNGLMT_M | 830 | 0.44 | 0.50    | 0.00    | 1.00    |
| R2LUNGLMT_M | 551 | 0.59 | 0.49    | 0.00    | 1.00    |
| R3LUNGLMT_M | 842 | 0.41 | 0.49    | 0.00    | 1.00    |
| R4LUNGLMT_M | 847 | 0.37 | 0.48    | 0.00    | 1.00    |
| R5LUNGLMT_M | 889 | 0.38 | 0.48    | 0.00    | 1.00    |

|             |      |      |      |      |      |
|-------------|------|------|------|------|------|
| S1LUNGLMT_M | 558  | 0.44 | 0.50 | 0.00 | 1.00 |
| S2LUNGLMT_M | 351  | 0.58 | 0.49 | 0.00 | 1.00 |
| S3LUNGLMT_M | 545  | 0.41 | 0.49 | 0.00 | 1.00 |
| S4LUNGLMT_M | 532  | 0.37 | 0.48 | 0.00 | 1.00 |
| S5LUNGLMT_M | 414  | 0.41 | 0.49 | 0.00 | 1.00 |
|             |      |      |      |      |      |
| R1HRTATLMT  | 439  | 0.55 | 0.50 | 0.00 | 1.00 |
| R2HRTATLMT  | 274  | 0.57 | 0.50 | 0.00 | 1.00 |
| R3HRTATLMT  | 503  | 0.44 | 0.50 | 0.00 | 1.00 |
| R4HRTATLMT  | 519  | 0.41 | 0.49 | 0.00 | 1.00 |
| R5HRTATLMT  | 603  | 0.40 | 0.49 | 0.00 | 1.00 |
|             |      |      |      |      |      |
| S1HRTATLMT  | 314  | 0.60 | 0.49 | 0.00 | 1.00 |
| S2HRTATLMT  | 195  | 0.58 | 0.49 | 0.00 | 1.00 |
| S3HRTATLMT  | 351  | 0.44 | 0.50 | 0.00 | 1.00 |
| S4HRTATLMT  | 361  | 0.42 | 0.49 | 0.00 | 1.00 |
| S5HRTATLMT  | 308  | 0.42 | 0.49 | 0.00 | 1.00 |
|             |      |      |      |      |      |
| R1STROKLMT  | 324  | 0.52 | 0.50 | 0.00 | 1.00 |
| R2STROKLMT  | 125  | 0.66 | 0.47 | 0.00 | 1.00 |
| R3STROKLMT  | 283  | 0.53 | 0.50 | 0.00 | 1.00 |
| R4STROKLMT  | 270  | 0.46 | 0.50 | 0.00 | 1.00 |
| R5STROKLMT  | 317  | 0.51 | 0.50 | 0.00 | 1.00 |
|             |      |      |      |      |      |
| S1STROKLMT  | 211  | 0.54 | 0.50 | 0.00 | 1.00 |
| S2STROKLMT  | 80   | 0.69 | 0.47 | 0.00 | 1.00 |
| S3STROKLMT  | 192  | 0.55 | 0.50 | 0.00 | 1.00 |
| S4STROKLMT  | 168  | 0.48 | 0.50 | 0.00 | 1.00 |
| S5STROKLMT  | 149  | 0.50 | 0.50 | 0.00 | 1.00 |
|             |      |      |      |      |      |
| R1ARTHLMT   | 2685 | 0.50 | 0.50 | 0.00 | 1.00 |
| R2ARTHLMT   | 2237 | 0.53 | 0.50 | 0.00 | 1.00 |
| R3ARTHLMT   | 1945 | 0.52 | 0.50 | 0.00 | 1.00 |
| R4ARTHLMT   | 2067 | 0.51 | 0.50 | 0.00 | 1.00 |
| R5ARTHLMT   | 1875 | 0.53 | 0.50 | 0.00 | 1.00 |
|             |      |      |      |      |      |
| S1ARTHLMT   | 1676 | 0.48 | 0.50 | 0.00 | 1.00 |
| S2ARTHLMT   | 1412 | 0.52 | 0.50 | 0.00 | 1.00 |
| S3ARTHLMT   | 1189 | 0.52 | 0.50 | 0.00 | 1.00 |
| S4ARTHLMT   | 1233 | 0.51 | 0.50 | 0.00 | 1.00 |
| S5ARTHLMT   | 863  | 0.50 | 0.50 | 0.00 | 1.00 |

## Categorical Variable Codes

| Value-----                    | R1LUNGLMT_M | R2LUNGLMT_M | R3LUNGLMT_M | R4LUNGLMT_M | R5LUNGLMT_M |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|
| .d:DK                         | 17          | 32          | 23          | 2           | 7           |
| .m:Missing                    | 4           |             |             |             |             |
| .p:Proxy interview, not asked | 119         | 69          | 80          | 86          | 116         |
| .r:Refuse                     | 34          | 2           | 4           | 4           | 6           |
| .s:Skip                       | 354         |             |             |             |             |
| .x:does not have condition    | 13828       | 13050       | 14774       | 13840       | 16096       |
| 0.no                          | 464         | 227         | 496         | 531         | 554         |
| 1.yes                         | 366         | 324         | 346         | 316         | 335         |

| Value-----                    | S1LUNGLMT_M | S2LUNGLMT_M | S3LUNGLMT_M | S4LUNGLMT_M | S5LUNGLMT_M |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|
| .d:DK                         | 10          | 22          | 11          | 2           | 3           |
| .m:Missing                    | 3           |             |             |             |             |
| .p:Proxy interview, not asked | 72          | 46          | 36          | 35          | 35          |
| .r:Refuse                     | 24          | 1           | 3           | 3           | 2           |
| .s:Skip                       | 254         |             |             |             |             |
| .u:Unmar                      | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                      | 333         | 131         | 349         | 280         | 501         |
| .x:does not have condition    | 9727        | 9144        | 9997        | 9080        | 7184        |
| 0.no                          | 310         | 148         | 319         | 335         | 246         |
| 1.yes                         | 248         | 203         | 226         | 197         | 168         |

| Value-----                    | R1HRTATLMT | R2HRTATLMT | R3HRTATLMT | R4HRTATLMT | R5HRTATLMT |
|-------------------------------|------------|------------|------------|------------|------------|
| .d:DK                         | 16         | 14         | 14         | 4          | 5          |
| .m:Missing                    | 4          |            |            | 1          |            |
| .p:Proxy interview, not asked | 105        | 36         | 71         | 65         | 74         |
| .r:Refuse                     | 29         | 2          | 7          | 2          | 4          |
| .s:Skip                       | 354        |            |            |            |            |
| .x:does not have condition    | 14239      | 13378      | 15128      | 14188      | 16428      |
| 0.no                          | 196        | 117        | 282        | 306        | 364        |
| 1.yes                         | 243        | 157        | 221        | 213        | 239        |

| Value-----                    | S1HRTATLMT | S2HRTATLMT | S3HRTATLMT | S4HRTATLMT | S5HRTATLMT |
|-------------------------------|------------|------------|------------|------------|------------|
| .d:DK                         | 13         | 9          | 7          | 3          | 1          |
| .m:Missing                    | 3          |            |            |            |            |
| .p:Proxy interview, not asked | 61         | 25         | 40         | 29         | 30         |
| .r:Refuse                     | 21         | 2          | 6          | 2          | 1          |
| .s:Skip                       | 254        |            |            |            |            |
| .u:Unmar                      | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      | 333        | 131        | 349        | 280        | 501        |
| .x:does not have condition    | 9982       | 9333       | 10188      | 9257       | 7298       |
| 0.no                          | 126        | 82         | 196        | 209        | 179        |
| 1.yes                         | 188        | 113        | 155        | 152        | 129        |

| Value-----                    | R1STROKLMT | R2STROKLMT | R3STROKLMT | R4STROKLMT | R5STROKLMT |
|-------------------------------|------------|------------|------------|------------|------------|
| .d:DK                         | 18         | 6          | 12         | 8          | 5          |
| .m:Missing                    | 4          |            |            | 1          |            |
| .p:Proxy interview, not asked | 111        | 49         | 87         | 88         | 120        |
| .r:Refuse                     | 36         | 1          | 4          | 4          | 4          |
| .s:Skip                       | 354        |            |            |            |            |
| .x:does not have condition    | 14339      | 13523      | 15337      | 14408      | 16668      |
| 0.no                          | 156        | 42         | 132        | 146        | 155        |
| 1.yes                         | 168        | 83         | 151        | 124        | 162        |

| Value-----                    | S1STROKLMT | S2STROKLMT | S3STROKLMT | S4STROKLMT | S5STROKLMT |
|-------------------------------|------------|------------|------------|------------|------------|
| .d:DK                         | 13         | 4          | 5          | 5          | 2          |
| .m:Missing                    | 3          |            |            |            |            |
| .p:Proxy interview, not asked | 63         | 31         | 36         | 35         | 42         |
| .r:Refuse                     | 25         | 1          | 3          | 2          | 1          |
| .s:Skip                       | 254        |            |            |            |            |
| .u:Unmar                      | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      | 333        | 131        | 349        | 280        | 501        |
| .x:does not have condition    | 10079      | 9448       | 10356      | 9442       | 7444       |
| 0.no                          | 97         | 25         | 87         | 87         | 75         |
| 1.yes                         | 114        | 55         | 105        | 81         | 74         |

| Value-----                    | R1ARTHLMT | R2ARTHLMT | R3ARTHLMT | R4ARTHLMT | R5ARTHLMT |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         | 34        | 21        | 26        | 12        | 13        |
| .m:Missing                    | 4         |           |           | 1         |           |
| .p:Proxy interview, not asked | 225       | 186       | 183       | 168       | 163       |
| .r:Refuse                     | 38        |           | 4         | 6         | 5         |
| .s:Skip                       | 354       |           |           |           |           |
| .x:does not have condition    | 11846     | 11260     | 13565     | 12525     | 15058     |
| 0.no                          | 1355      | 1056      | 931       | 1006      | 890       |
| 1.yes                         | 1330      | 1181      | 1014      | 1061      | 985       |

| Value-----                    | S1ARTHLMT | S2ARTHLMT | S3ARTHLMT | S4ARTHLMT | S5ARTHLMT |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         | 26        | 13        | 16        | 10        | 5         |
| .m:Missing                    | 3         |           |           |           |           |
| .p:Proxy interview, not asked | 117       | 107       | 72        | 59        | 65        |
| .r:Refuse                     | 27        |           | 4         | 4         | 2         |
| .s:Skip                       | 254       |           |           |           |           |
| .u:Unmar                      | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      | 333       | 131       | 349       | 280       | 501       |
| .x:does not have condition    | 8545      | 8032      | 9311      | 8346      | 6703      |
| 0.no                          | 867       | 677       | 572       | 610       | 428       |
| 1.yes                         | 809       | 735       | 617       | 623       | 435       |

## How Constructed

RwLUNGLMT\_M, RwhRTATLMT, RwSTROKLMT, and RwarthLMT indicate whether a specified health condition limits the daily activity (such as household chores or job) of the respondent. RwLUNGLMT\_M indicates whether a respiratory illness, such as asthma or emphysema, limits the daily activities of the respondent.

RwHRTATLMT indicates whether a heart attack limits the daily activities of the respondent. RwSTROKLMT indicates whether a stroke limits the daily activities of the respondent. RwarHTLMT indicates whether arthritis limits the daily activities of the respondent.

RwLUNGLMT\_M, RwhRTATLMT, RwSTROKLMT, and RwarTHLMT are coded as 0 "No" and 1 "Yes". Respondents who have never been diagnosed with the specified condition are not asked these questions and these variables are assigned a special missing code .x. RwlUNGLMT\_M, RwhRTATLMT, RwSTROKLMT, and RwarTHLMT are assigned special missing .d, .r, .p, .m, for don't know, refused, proxy, or otherwise missing responses, respectively. These variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwLUNGLMT\_M, SwHRTATLMT, SwSTROKLMT, and SwARThLMT indicate whether the respondent's spouse reported that a specified health condition limits their daily activity and are taken directly from the spouse's RwlUNGLMT\_M, RwhRTATLMT, RwSTROKLMT, and RwarTHLMT, respectively. In addition to the special missing codes used in RwlUNGLMT\_M, RwhRTATLMT, RwSTROKLMT, and RwarTHLMT; SwLUNGLMT\_M, SwHRTATLMT, SwSTROKLMT, and SwARThLMT employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

The HRS asks whether lung disease, angina, and arthritis limit the respondent's usual activities, such as household chores or work. The MHAS asks whether lung disease, heart attack, stroke, and arthritis limit the respondent's daily activities, such as household chores or their job.

## MHAS Variables Used

### Wave 1:

|     |   |
|-----|---|
| C19 | respiratory illness                     |
| C21 | respiratory treatment limits activities |
| C22 | heart attack                            |
| C26 | heart problems limits activities        |
| C27 | stroke                                  |
| C33 | stroke limits activities                |
| C34 | arthritis or rheumatism                 |
| C38 | arthritis limits activities             |

### Wave 2:

|      |  |
|------|--|
| C19  | doctor ever say you have a respiratory disease |
| C21  | condition limits normal activities             |
| C22A | doctor ever say you had a heart attack         |
| C25  | heart condition limits normal activities       |
| C26  | doctor ever say you had a stroke               |
| C31  | condition limits your normal activities        |
| C32  | doctor ever say you have arthritis             |
| C35  | condition limits your normal activities        |

### Wave 3:

|         |  |
|---------|--|
| C19_12  | Has a physician diagnosed respondent...respiratory illness     |
| C21_12  | Respondent's health condition limits daily activities          |
| C22A_12 | Has a physician ever told respondent...heart attack            |
| C25A_12 | Respondent's heart condition limits daily activities           |
| C26_12  | Ever/last 2 years:Has a physician told respondent...stroke     |
| C31_12  | Stroke limits respondent's daily activities                    |
| C32_12  | Has a physician diagnosed respondent with arthritis/rheumatism |
| C35_12  | Arthritis limits respondent's daily activities                 |

### Wave 4:

|         |  |
|---------|--|
| C19_15  | Has a doctor or medical personnel ever diagnosed respondent        |
| C21_15  | Does respondent's health condition limits his/her daily activities |
| C22A_15 | Has a doctor or medical personnel ever told respondent             |
| C25A_15 | Does respondent's heart condition limits daily activities          |

|         |   |
|---------|---|
| C26_15  | Has a doctor or medical personnel ever told respondent  |
| C31_15  | Stroke limits respondent's daily activities             |
| C32_15  | Has a doctor or medical personnel ever diagnosed respon |
| C35_15  | Does arthritis limit respondent's daily activities      |
| Wave 5: |   |
| C19_18  | Has a doctor or medical personnel ever diagnosed R with |
| C21_18  | Does R's health condition limits his/her daily activiti |
| C22A_18 | Has a doctor or medical personnel ever told R he/she ha |
| C25A_18 | Does R's heart condition limits daily activities        |
| C26_18  | Has a doctor or medical personnel ever told R he/she ha |
| C31_18  | Stroke limits R's daily activities                      |
| C32_18  | Has a doctor or medical personnel ever diagnosed R with |
| C35_18  | Does arthritis limit R's daily activities               |

Doctor Diagnosed Diseases: Age of Diagnosis

| Wave | Variable    | Label   | Type |
|------|-------------|---|------|
| 1    | R1RECCANCR  | r1reccancr: w1 R Age most recent cancer diagnosis | Cont |
| 2    | R2RECCANCR  | r2reccancr: w2 R Age most recent cancer diagnosis | Cont |
| 3    | R3RECCANCR  | r3reccancr: w3 R Age most recent cancer diagnosis | Cont |
| 4    | R4RECCANCR  | r4reccancr: w4 R Age most recent cancer diagnosis | Cont |
| 5    | R5RECCANCR  | r5reccancr: w5 R Age most recent cancer diagnosis | Cont |
| 1    | S1RECCANCR  | s1reccancr: w1 S Age most recent cancer diagnosis | Cont |
| 2    | S2RECCANCR  | s2reccancr: w2 S Age most recent cancer diagnosis | Cont |
| 3    | S3RECCANCR  | s3reccancr: w3 S Age most recent cancer diagnosis | Cont |
| 4    | S4RECCANCR  | s4reccancr: w4 S Age most recent cancer diagnosis | Cont |
| 5    | S5RECCANCR  | s5reccancr: w5 S Age most recent cancer diagnosis | Cont |
| 1    | R1RECHRTATT | r1rechrtatt: w1 R Age most recent heart attack    | Cont |
| 2    | R2RECHRTATT | r2rechrtatt: w2 R Age most recent heart attack    | Cont |
| 3    | R3RECHRTATT | r3rechrtatt: w3 R Age most recent heart attack    | Cont |
| 4    | R4RECHRTATT | r4rechrtatt: w4 R Age most recent heart attack    | Cont |
| 5    | R5RECHRTATT | r5rechrtatt: w5 R Age most recent heart attack    | Cont |
| 1    | S1RECHRTATT | s1rechrtatt: w1 S Age most recent heart attack    | Cont |
| 2    | S2RECHRTATT | s2rechrtatt: w2 S Age most recent heart attack    | Cont |
| 3    | S3RECHRTATT | s3rechrtatt: w3 S Age most recent heart attack    | Cont |
| 4    | S4RECHRTATT | s4rechrtatt: w4 S Age most recent heart attack    | Cont |
| 5    | S5RECHRTATT | s5rechrtatt: w5 S Age most recent heart attack    | Cont |
| 1    | R1RECSTROK  | r1recstrok: w1 R Age most recent stroke           | Cont |
| 2    | R2RECSTROK  | r2recstrok: w2 R Age most recent stroke           | Cont |
| 3    | R3RECSTROK  | r3recstrok: w3 R Age most recent stroke           | Cont |
| 4    | R4RECSTROK  | r4recstrok: w4 R Age most recent stroke           | Cont |
| 5    | R5RECSTROK  | r5recstrok: w5 R Age most recent stroke           | Cont |
| 1    | S1RECSTROK  | s1recstrok: w1 S Age most recent stroke           | Cont |
| 2    | S2RECSTROK  | s2recstrok: w2 S Age most recent stroke           | Cont |
| 3    | S3RECSTROK  | s3recstrok: w3 S Age most recent stroke           | Cont |
| 4    | S4RECSTROK  | s4recstrok: w4 S Age most recent stroke           | Cont |
| 5    | S5RECSTROK  | s5recstrok: w5 S Age most recent stroke           | Cont |

Descriptive Statistics

| Variable    | N    | Mean  | Std Dev | Minimum | Maximum |
|-------------|------|-------|---------|---------|---------|
| R1RECCANCR  | 287  | 52.12 | 13.67   | 6.00    | 90.00   |
| R2RECCANCR  | 303  | 53.67 | 14.23   | 6.00    | 89.00   |
| R3RECCANCR  | 467  | 54.85 | 14.63   | 2.00    | 93.00   |
| R4RECCANCR  | 570  | 55.88 | 14.90   | 2.00    | 89.00   |
| R5RECCANCR  | 689  | 56.07 | 15.08   | 2.00    | 99.00   |
| S1RECCANCR  | 199  | 49.71 | 12.88   | 6.00    | 84.00   |
| S2RECCANCR  | 203  | 52.04 | 13.67   | 9.00    | 89.00   |
| S3RECCANCR  | 298  | 54.37 | 13.87   | 9.00    | 88.00   |
| S4RECCANCR  | 365  | 55.04 | 14.51   | 5.00    | 88.00   |
| S5RECCANCR  | 345  | 56.66 | 14.07   | 9.00    | 88.00   |
| R1RECHRTATT | 468  | 56.51 | 15.21   | 3.00    | 106.00  |
| R2RECHRTATT | 607  | 58.56 | 14.23   | 5.00    | 92.00   |
| R3RECHRTATT | 790  | 59.00 | 13.60   | 1.00    | 98.00   |
| R4RECHRTATT | 953  | 59.65 | 14.10   | 1.00    | 93.00   |
| R5RECHRTATT | 1126 | 59.36 | 14.50   | 1.00    | 98.00   |



|             |     |       |       |       |        |
|-------------|-----|-------|-------|-------|--------|
| S1RECHRTATT | 328 | 54.70 | 14.03 | 3.00  | 87.00  |
| S2RECHRTATT | 427 | 57.26 | 13.54 | 5.00  | 92.00  |
| S3RECHRTATT | 505 | 57.62 | 12.89 | 1.00  | 88.00  |
| S4RECHRTATT | 607 | 58.09 | 13.26 | 1.00  | 93.00  |
| S5RECHRTATT | 597 | 59.80 | 12.79 | 1.00  | 94.00  |
|             |     |       |       |       |        |
| R1RECSTROK  | 382 | 58.31 | 14.44 | 5.00  | 98.00  |
| R2RECSTROK  | 420 | 59.75 | 14.28 | 5.00  | 95.00  |
| R3RECSTROK  | 518 | 59.73 | 14.24 | 0.00  | 94.00  |
| R4RECSTROK  | 606 | 60.51 | 14.90 | 0.00  | 105.00 |
| R5RECSTROK  | 683 | 59.69 | 15.73 | 0.00  | 93.00  |
|             |     |       |       |       |        |
| S1RECSTROK  | 239 | 56.26 | 13.18 | 6.00  | 87.00  |
| S2RECSTROK  | 260 | 57.41 | 13.63 | 6.00  | 87.00  |
| S3RECSTROK  | 305 | 58.02 | 13.33 | 19.00 | 94.00  |
| S4RECSTROK  | 343 | 57.54 | 14.13 | 11.00 | 89.00  |
| S5RECSTROK  | 329 | 58.78 | 13.65 | 11.00 | 85.00  |

## How Constructed

RwRECCANCER indicates the most recent age at which the respondent was diagnosed with cancer. In Waves 1 and 2, respondents are asked the year or age in which they were diagnosed, and these responses are converted to the year of diagnosis in the MHAS data. Starting in Wave 3, both year and/or age responses are recorded in the MHAS data. RwRECCANCER is then constructed using the reported year or age reported. Previous responses are carried forward if the respondent does not report a new cancer diagnosis. Respondents who have never been diagnosed with cancer are not asked this question and are assigned a special missing code .x. RwRECCANCER is also assigned a special missing value .i if the year reported was invalid. Don't know, refused, or other missing responses of RwRECCANCER are assigned special missing codes .d, .r, and .m, respectively. RwRECCANCER is set to plain missing (.) for respondents who did not participate in the current wave.

SwRECCANCER indicates the most recent age at which the respondent's current wave's spouse was diagnosed with cancer, and is taken from RwRECCANCER. In addition to the special missing codes employed by RwRECCANCER, SwRECCANCER employs two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

RwRECHRTATT indicates the most recent age at which the respondent had a heart attack. In Waves 1 and 2, respondents are asked the year or age in which they were diagnosed, and these responses are converted to the year of diagnosis in the MHAS data. Starting in Wave 3, both year and/or age responses are recorded in the MHAS data. RwRECHRTATT is then constructed using first the reported year or age reported. Previous responses are carried forward if the respondent did not report a new heart attack. Respondents who have never had a heart attack are not asked this question and are assigned a special missing code .x. RwRECHRTATT is also assigned a special missing value .i if the year reported was invalid. Don't know, refused, or other missing responses of RwRECHRTATT are assigned special missing codes .d, .r, and .m, respectively. RwRECHRTATT is set to plain missing (.) for respondents who did not participate in the current wave.

SwRECHRTATT indicates the most recent age at which the respondent's current wave's spouse had a heart attack, and is taken from RwRECHRTATT. In addition to the special missing codes employed by RwRECHRTATT, SwRECHRTATT employs two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

RwRECSTROK indicates the most recent age at which the respondent had a stroke. In Waves 1 and 2, respondents are asked the year or age in which they were diagnosed, and these responses are converted to the year at diagnosis in the MHAS data. Starting in Wave 3, both year and/or age responses are recorded in the MHAS data. RwRECSTROK is then constructed using the first reported year or age reported. Previous responses are carried forward if the respondent did not report a new heart attack. Respondents who have never had a heart attack are not asked this question and are assigned a special missing code .x. RwRECSTROK is also assigned a special missing value .i if the year reported was invalid. Don't know, refused, or other missing responses of RwRECSTROK are assigned special missing codes .d, .r, and .m, respectively. RwRECSTROK is set to plain missing (.) for respondents who did not participate in the current wave.

SwRECSTROK indicates the most recent age at which the respondent's current wave's spouse had a heart attack, and is taken from RwRECSTROK. In addition to the special missing codes employed by RwRECSTROK, SwRECSTROK employs two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

For each diagnosed condition (heart attack, cancer, and stroke), respondents are asked the year or age in which they were diagnosed. In Waves 1 and 2, these responses are converted to the year of diagnosis in the MHAS data. Starting in Wave 3, both year and/or age responses are recorded in the MHAS data. RwRECCANCR, RwRECHRTATT, and RwRECSTROK are then constructed using first the reported year or age. Previous responses are carried forward if the respondent does not report a new diagnosis.

## Differences with the RAND HRS/Harmonized HRS

Different to the HRS, starting in Wave 3, the MHAS recorded both year and/or age of diagnosis while the HRS only recorded the year of diagnosis.

The HRS also asks the age at which the respondent was first diagnosed with several conditions, which are not asked in the MHAS.

## MHAS Variables Used

|          |   |
|----------|---|
| Wave 1:  |   |
| C12      | cancer or tumor                                     |
| C18      | year of cancer                                      |
| C22      | heart attack  |
| C23      | year of heart attack                                |
| C27      | stroke  |
| C32      | year of stroke                                      |
| Wave 2:  |   |
| C12      | doctor ever say you have cancer                     |
| C18      | when was most recent cancer diagnosed               |
| C22A     | doctor ever say you had a heart attack              |
| C22B     | when have last heart attack                         |
| C26      | doctor ever say you had a stroke                    |
| C30      | when did you have your last stroke                  |
| Wave 3:  |   |
| C18_1_12 | Respondent's year of most recent cancer diagnosis   |
| C18_2_12 | Respondent's age of most recent cancer diagnosis    |
| C22B1_12 | Respondent's year of most recent heart attack       |
| C22B2_12 | Respondent's age of most recent heart attack        |
| C30_1_12 | Respondent's year of recent stroke                  |
| C30_2_12 | Respondent's age of recent stroke                   |
| Wave 4:  |   |
| C18_1_15 | Respondent's year when most recent cancer diagnosed |
| C18_2_15 | Respondent's age when most recent cancer diagnosed  |
| C22B1_15 | Respondent's year of (most) recent heart attack     |
| C22B2_15 | Respondent's age of (most) recent heart attack      |
| C30_1_15 | Year respondent had (most) recent stroke            |
| C30_2_15 | Respondent's age of (most) recent stroke            |
| Wave 5:  |   |
| C18_1_18 | R's year when most recent cancer diagnosed          |
| C18_2_18 | R's age when most recent cancer diagnosed           |
| C22B1_18 | R's year of (most) recent heart attack              |
| C22B2_18 | R's age of (most) recent heart attack               |
| C30_1_18 | Year R had (most) recent stroke                     |
| C30_2_18 | R's age of (most) recent stroke                     |

Vision

| Wave | Variable  | Label                             | Type  |
|------|-----------|-----------------------------------|-------|
| 1    | R1SIGHT   | r1sight: w1 R Self-rated eyesight | Categ |
| 2    | R2SIGHT   | r2sight: w2 R Self-rated eyesight | Categ |
| 3    | R3SIGHT   | r3sight: w3 R Self-rated eyesight | Categ |
| 4    | R4SIGHT   | r4sight: w4 R Self-rated eyesight | Categ |
| 5    | R5SIGHT   | r5sight: w5 R Self-rated eyesight | Categ |
| 1    | S1SIGHT   | s1sight: w1 S Self-rated eyesight | Categ |
| 2    | S2SIGHT   | s2sight: w2 S Self-rated eyesight | Categ |
| 3    | S3SIGHT   | s3sight: w3 S Self-rated eyesight | Categ |
| 4    | S4SIGHT   | s4sight: w4 S Self-rated eyesight | Categ |
| 5    | S5SIGHT   | s5sight: w5 S Self-rated eyesight | Categ |
| 1    | R1GLASSES | r1glasses: w1 R Wears glasses     | Categ |
| 2    | R2GLASSES | r2glasses: w2 R Wears glasses     | Categ |
| 3    | R3GLASSES | r3glasses: w3 R Wears glasses     | Categ |
| 4    | R4GLASSES | r4glasses: w4 R Wears glasses     | Categ |
| 5    | R5GLASSES | r5glasses: w5 R Wears glasses     | Categ |
| 1    | S1GLASSES | s1glasses: w1 S Wears glasses     | Categ |
| 2    | S2GLASSES | s2glasses: w2 S Wears glasses     | Categ |
| 3    | S3GLASSES | s3glasses: w3 S Wears glasses     | Categ |
| 4    | S4GLASSES | s4glasses: w4 S Wears glasses     | Categ |
| 5    | S5GLASSES | s5glasses: w5 S Wears glasses     | Categ |

Descriptive Statistics

| Variable  | N     | Mean | Std Dev | Minimum | Maximum |
|-----------|-------|------|---------|---------|---------|
| R1SIGHT   | 14049 | 3.38 | 0.90    | 1.00    | 6.00    |
| R2SIGHT   | 12446 | 3.40 | 0.90    | 1.00    | 6.00    |
| R3SIGHT   | 14101 | 3.34 | 0.90    | 1.00    | 6.00    |
| R4SIGHT   | 13837 | 3.40 | 0.89    | 1.00    | 6.00    |
| R5SIGHT   | 15748 | 3.36 | 0.95    | 1.00    | 6.00    |
| S1SIGHT   | 9909  | 3.36 | 0.90    | 1.00    | 6.00    |
| S2SIGHT   | 8693  | 3.38 | 0.88    | 1.00    | 6.00    |
| S3SIGHT   | 9639  | 3.33 | 0.90    | 1.00    | 6.00    |
| S4SIGHT   | 9177  | 3.38 | 0.88    | 1.00    | 6.00    |
| S5SIGHT   | 7060  | 3.41 | 0.92    | 1.00    | 6.00    |
| R1GLASSES | 15162 | 0.40 | 0.49    | 0.00    | 1.00    |
| R2GLASSES | 13700 | 0.43 | 0.50    | 0.00    | 1.00    |
| R3GLASSES | 15721 | 0.50 | 0.50    | 0.00    | 1.00    |
| R4GLASSES | 14772 | 0.53 | 0.50    | 0.00    | 1.00    |
| R5GLASSES | 17110 | 0.56 | 0.50    | 0.00    | 1.00    |
| S1GLASSES | 10629 | 0.39 | 0.49    | 0.00    | 1.00    |
| S2GLASSES | 9562  | 0.43 | 0.49    | 0.00    | 1.00    |
| S3GLASSES | 10590 | 0.49 | 0.50    | 0.00    | 1.00    |
| S4GLASSES | 9649  | 0.52 | 0.50    | 0.00    | 1.00    |
| S5GLASSES | 7636  | 0.57 | 0.50    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----                    | R1SIGHT | R2SIGHT | R3SIGHT | R4SIGHT | R5SIGHT |
|-------------------------------|---------|---------|---------|---------|---------|
| .d:DK                         | 43      | 72      | 271     | 11      | 25      |
| .m:Missing                    | 4       |         |         | 2       |         |
| .p:Proxy interview, not asked | 1032    | 1178    | 1275    | 929     | 1328    |

|                               |  |           |           |           |           |           |
|-------------------------------|--|-----------|-----------|-----------|-----------|-----------|
| .r:Refuse                     |  | 58        | 8         | 76        |           | 13        |
| 1.Excellent                   |  | 427       | 443       | 604       | 580       | 910       |
| 2.Very good                   |  | 1363      | 893       | 1168      | 909       | 1366      |
| 3.Good                        |  | 6029      | 5577      | 6203      | 5815      | 5879      |
| 4.Fair                        |  | 4891      | 4309      | 5071      | 5507      | 6447      |
| 5.Poor                        |  | 1295      | 1171      | 1014      | 979       | 1097      |
| 6.Legally Blind               |  | 44        | 53        | 41        | 47        | 49        |
| Value-----                    |  | S1SIGHT   | S2SIGHT   | S3SIGHT   | S4SIGHT   | S5SIGHT   |
| .d:DK                         |  | 34        | 46        | 180       | 5         | 8         |
| .m:Missing                    |  | 3         |           |           |           |           |
| .p:Proxy interview, not asked |  | 660       | 821       | 726       | 470       | 563       |
| .r:Refuse                     |  | 42        | 4         | 47        |           | 7         |
| .u:Unmar                      |  | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      |  | 333       | 131       | 349       | 280       | 501       |
| 1.Excellent                   |  | 322       | 306       | 427       | 398       | 333       |
| 2.Very good                   |  | 988       | 626       | 820       | 601       | 588       |
| 3.Good                        |  | 4254      | 3990      | 4258      | 3902      | 2545      |
| 4.Fair                        |  | 3482      | 3009      | 3479      | 3662      | 3068      |
| 5.Poor                        |  | 843       | 735       | 631       | 590       | 500       |
| 6.Legally Blind               |  | 20        | 27        | 24        | 24        | 26        |
| Value-----                    |  | R1GLASSES | R2GLASSES | R3GLASSES | R4GLASSES | R5GLASSES |
| .d:DK                         |  | 6         | 3         |           |           | 1         |
| .m:Missing                    |  | 4         |           |           | 2         |           |
| .p:Proxy interview, not asked |  | 2         |           |           | 1         | 1         |
| .r:Refuse                     |  | 12        | 1         | 2         | 4         | 2         |
| 0.no                          |  | 9092      | 7768      | 7829      | 7009      | 7555      |
| 1.yes                         |  | 6070      | 5932      | 7892      | 7763      | 9555      |
| Value-----                    |  | S1GLASSES | S2GLASSES | S3GLASSES | S4GLASSES | S5GLASSES |
| .d:DK                         |  | 5         | 2         |           |           | 1         |
| .m:Missing                    |  | 3         |           |           |           |           |
| .p:Proxy interview, not asked |  | 1         |           |           |           | 1         |
| .r:Refuse                     |  | 10        |           | 2         | 3         |           |
| .u:Unmar                      |  | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      |  | 333       | 131       | 349       | 280       | 501       |
| 0.no                          |  | 6521      | 5487      | 5377      | 4608      | 3281      |
| 1.yes                         |  | 4108      | 4075      | 5213      | 5041      | 4355      |

## How Constructed

RwSIGHT indicates the respondent's self-rated vision (while wearing glasses if they normally do). RwSIGHT is coded as follows: 1.Excellent, 2.Very good, 3.Good, 4.Fair, 5.Poor, and 6.Legally blind. Please note that "legally blind" is not a specified option, but rather a voluntary response from the respondent. When respondents don't know or refuse to answer, RwSIGHT is assigned special missing values .d or .r, respectively. RwSIGHT is set to the special missing value .p if the current interview was completed by proxy. Other missing responses are assigned special missing .m. RwSIGHT is assigned plain missing (.) if the respondent did not participate in the current wave.

RwGLASSES indicates whether the respondent usually wears glasses and is coded as 1 "Yes" and 0 "No". When respondents don't know or refuse to answer, RwGLASSES is assigned special missing values .d or .r, respectively. RwGLASSES is set to the special missing value .p if the current interview was completed by proxy. Other missing responses are assigned special missing .m. RwGLASSES is assigned plain missing (.) if the respondent did not participate in the current wave.

SwSIGHT and SwGLASSES variables are taken from the Wave 'w' spouse's self-reported RwSIGHT and RwGLASSES variables. In addition to the special missing codes used in RwSIGHT and RwGLASSES, SwSIGHT and SwGLASSES employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

Unlike the MHAS, the HRS does not ask whether the respondent wears glasses or contact lenses.

MHAS Variables Used

|         |                                       |
|---------|---------------------------------------|
| Wave 1: |                                       |
| C44     | glasses                               |
| C45     | vision                                |
| Wave 2: |                                       |
| C41     | use glasses                           |
| C42     | status of vision (with glasses)       |
| Wave 3: |                                       |
| C41_12  | Respondent wears glasses              |
| C42_12  | Respondent's vision with glasses      |
| Wave 4: |                                       |
| C41_15  | Does respondent usually wears glasses |
| C42_15  | Respondent's vision (with glasses)    |
| Wave 5: |                                       |
| C41_18  | Does R usually wears glasses          |
| C42_18  | R's vision (with glasses)             |

Hearing

| Wave | Variable  | Label                              | Type  |
|------|-----------|------------------------------------|-------|
| 1    | R1HEARING | r1hearing: w1 R Self-rated hearing | Categ |
| 2    | R2HEARING | r2hearing: w2 R Self-rated hearing | Categ |
| 3    | R3HEARING | r3hearing: w3 R Self-rated hearing | Categ |
| 4    | R4HEARING | r4hearing: w4 R Self-rated hearing | Categ |
| 5    | R5HEARING | r5hearing: w5 R Self-rated hearing | Categ |
| 1    | S1HEARING | s1hearing: w1 S Self-rated hearing | Categ |
| 2    | S2HEARING | s2hearing: w2 S Self-rated hearing | Categ |
| 3    | S3HEARING | s3hearing: w3 S Self-rated hearing | Categ |
| 4    | S4HEARING | s4hearing: w4 S Self-rated hearing | Categ |
| 5    | S5HEARING | s5hearing: w5 S Self-rated hearing | Categ |
| 1    | R1HEARAID | r1hearaid: w1 R Wears hearing aid  | Categ |
| 2    | R2HEARAID | r2hearaid: w2 R Wears hearing aid  | Categ |
| 3    | R3HEARAID | r3hearaid: w3 R Wears hearing aid  | Categ |
| 4    | R4HEARAID | r4hearaid: w4 R Wears hearing aid  | Categ |
| 5    | R5HEARAID | r5hearaid: w5 R Wears hearing aid  | Categ |
| 1    | S1HEARAID | s1hearaid: w1 S Wears hearing aid  | Categ |
| 2    | S2HEARAID | s2hearaid: w2 S Wears hearing aid  | Categ |
| 3    | S3HEARAID | s3hearaid: w3 S Wears hearing aid  | Categ |
| 4    | S4HEARAID | s4hearaid: w4 S Wears hearing aid  | Categ |
| 5    | S5HEARAID | s5hearaid: w5 S Wears hearing aid  | Categ |

Descriptive Statistics

| Variable  | N     | Mean | Std Dev | Minimum | Maximum |
|-----------|-------|------|---------|---------|---------|
| R1HEARING | 13940 | 3.04 | 0.87    | 1.00    | 6.00    |
| R2HEARING | 12359 | 3.11 | 0.85    | 1.00    | 6.00    |
| R3HEARING | 164   | 3.43 | 1.03    | 1.00    | 6.00    |
| R4HEARING | 13805 | 3.19 | 0.85    | 1.00    | 6.00    |
| R5HEARING | 15767 | 3.11 | 0.94    | 1.00    | 6.00    |
| S1HEARING | 9824  | 3.01 | 0.87    | 1.00    | 6.00    |
| S2HEARING | 8626  | 3.09 | 0.85    | 1.00    | 6.00    |
| S3HEARING | 97    | 3.42 | 1.04    | 1.00    | 6.00    |
| S4HEARING | 9161  | 3.17 | 0.84    | 1.00    | 6.00    |
| S5HEARING | 7069  | 3.18 | 0.90    | 1.00    | 6.00    |
| R1HEARAID | 15160 | 0.01 | 0.12    | 0.00    | 1.00    |
| R2HEARAID | 13700 | 0.02 | 0.13    | 0.00    | 1.00    |
| R3HEARAID | 15719 | 0.01 | 0.12    | 0.00    | 1.00    |
| R4HEARAID | 14775 | 0.02 | 0.14    | 0.00    | 1.00    |
| R5HEARAID | 17108 | 0.02 | 0.15    | 0.00    | 1.00    |
| S1HEARAID | 10627 | 0.01 | 0.12    | 0.00    | 1.00    |
| S2HEARAID | 9560  | 0.02 | 0.13    | 0.00    | 1.00    |
| S3HEARAID | 10589 | 0.01 | 0.11    | 0.00    | 1.00    |
| S4HEARAID | 9652  | 0.02 | 0.13    | 0.00    | 1.00    |
| S5HEARAID | 7637  | 0.03 | 0.16    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----                    | R1HEARING | R2HEARING | R3HEARING | R4HEARING | R5HEARING |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         | 70        | 116       | 1         | 34        | 7         |
| .m:Missing                    | 4         |           |           | 2         |           |
| .p:Proxy interview, not asked | 1032      | 1178      | 1275      | 929       | 1328      |

|                               |  |           |           |           |           |           |
|-------------------------------|--|-----------|-----------|-----------|-----------|-----------|
| .r:Refuse                     |  | 140       | 51        | 2         | 9         | 12        |
| .x:no hearing aid             |  |           |           | 14281     |           |           |
| 1.Excellent                   |  | 802       | 589       | 7         | 673       | 1215      |
| 2.Very good                   |  | 1961      | 1435      | 23        | 1331      | 1861      |
| 3.Good                        |  | 7747      | 7052      | 47        | 7101      | 7310      |
| 4.Fair                        |  | 2774      | 2631      | 67        | 4121      | 4757      |
| 5.Poor                        |  | 643       | 637       | 19        | 576       | 619       |
| 6.Legally Deaf                |  | 13        | 15        | 1         | 3         | 5         |
| Value-----                    |  | S1HEARING | S2HEARING | S3HEARING | S4HEARING | S5HEARING |
| .d:DK                         |  | 52        | 80        |           | 17        | 2         |
| .m:Missing                    |  | 3         |           |           |           |           |
| .p:Proxy interview, not asked |  | 660       | 821       | 726       | 470       | 563       |
| .r:Refuse                     |  | 109       | 37        | 1         | 4         | 4         |
| .u:Unmar                      |  | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      |  | 333       | 131       | 349       | 280       | 501       |
| .x:no hearing aid             |  |           |           | 9768      |           |           |
| 1.Excellent                   |  | 610       | 427       | 3         | 461       | 430       |
| 2.Very good                   |  | 1405      | 1028      | 17        | 894       | 747       |
| 3.Good                        |  | 5503      | 4965      | 26        | 4777      | 3285      |
| 4.Fair                        |  | 1883      | 1788      | 39        | 2698      | 2316      |
| 5.Poor                        |  | 416       | 405       | 11        | 329       | 290       |
| 6.Legally Deaf                |  | 7         | 13        | 1         | 2         | 1         |
| Value-----                    |  | R1HEARAID | R2HEARAID | R3HEARAID | R4HEARAID | R5HEARAID |
| .d:DK                         |  | 8         | 3         | 1         | 1         | 1         |
| .m:Missing                    |  | 4         |           |           | 2         |           |
| .r:Refuse                     |  | 14        | 1         | 3         | 1         | 5         |
| 0.no                          |  | 14945     | 13455     | 15504     | 14487     | 16724     |
| 1.yes                         |  | 215       | 245       | 215       | 288       | 384       |
| Value-----                    |  | S1HEARAID | S2HEARAID | S3HEARAID | S4HEARAID | S5HEARAID |
| .d:DK                         |  | 8         | 3         | 1         |           |           |
| .m:Missing                    |  | 3         |           |           |           |           |
| .r:Refuse                     |  | 10        | 1         | 2         |           | 1         |
| .u:Unmar                      |  | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      |  | 333       | 131       | 349       | 280       | 501       |
| 0.no                          |  | 10480     | 9408      | 10467     | 9485      | 7435      |
| 1.yes                         |  | 147       | 152       | 122       | 167       | 202       |

## How Constructed

RwHEARING indicates the respondent's self-rated hearing (while wearing hearing aid if they normally do). RwHEARING is coded as follows: 1.Excellent, 2.Very good, 3.Good, 4.Fair, 5.Poor, and 6.Legally deaf. Please note that "legally deaf" is not a specified option, but rather a voluntary response from the respondent. When respondents don't know or refuse to answer, RwHEARING is assigned special missing values .d or .r, respectively. RwHEARING is set to the special missing value .p if the current interview was completed by proxy. Other missing responses are assigned special missing .m. In Wave 3, respondents are not asked to rate their hearing if they reported not using a hearing aid or answered don't know or refused to the hearing aid question, in which case RwHEARING is assigned special missing .x. RwHEARING is assigned plain missing (.) if the respondent did not participate in the current wave.

RwHEARAID indicates whether the respondent usually wears a hearing aid and is coded as 1 "Yes" and 0 "No". When respondents don't know or refuse to answer, RwHEARAID is assigned special missing values .d or .r, respectively. RwHEARAID is set to the special missing value .p if the current interview was completed by proxy. Other missing responses are assigned special missing .m. RwHEARAID is assigned plain missing (.) if the respondent did not participate in the current wave.

SwHEARING and SwHEARAID variables are taken from the Wave 'w' spouse's self-reported RwHEARING and RwHEARAID variables. In addition to the special missing codes used in RwHEARING and RwHEARAID, SwHEARING and SwHEARAID employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Different from all other waves, in Wave 3 the self-reported hearing question is skipped if the respondent reports not using a hearing aid, or if they answer don't know or refused to the hearing aid question.

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| C46     | hearing aid   |
| C47     | hearing range   |
| Wave 2: |   |
| C43     | use hearing aid   |
| C44     | status of hearing (with hearing aid)                    |
| Wave 3: |   |
| C43_12  | Respondent uses hearing/auditory device                 |
| C44_12  | Respondent's hearing range with hearing/auditory device |
| Wave 4: |   |
| C43_15  | Does respondent use hearing aid/auditory device         |
| C44_15  | Respondent's hearing range with hearing aid/auditory de |
| Wave 5: |   |
| C43_18  | Does R use hearing aid/auditory device                  |
| C44_18  | R's hearing range with hearing aid/auditory device      |



|              |
|--------------|
| <b>Falls</b> |
|--------------|

| Wave | Variable  | Label  | Type  |
|------|-----------|--|-------|
| 1    | R1FALL    | r1fall: w1 R Fallen down last 2 years                        | Categ |
| 2    | R2FALL    | r2fall: w2 R Fallen down last 2 years                        | Categ |
| 3    | R3FALL    | r3fall: w3 R Fallen down last 2 years                        | Categ |
| 4    | R4FALL    | r4fall: w4 R Fallen down last 2 years                        | Categ |
| 5    | R5FALL    | r5fall: w5 R Fallen down last 2 years                        | Categ |
| 1    | S1FALL    | s1fall: w1 S Fallen down last 2 years                        | Categ |
| 2    | S2FALL    | s2fall: w2 S Fallen down last 2 years                        | Categ |
| 3    | S3FALL    | s3fall: w3 S Fallen down last 2 years                        | Categ |
| 4    | S4FALL    | s4fall: w4 S Fallen down last 2 years                        | Categ |
| 5    | S5FALL    | s5fall: w5 S Fallen down last 2 years                        | Categ |
| 1    | R1FALLNUM | r1fallnum: w1 R Number of falls                              | Cont  |
| 2    | R2FALLNUM | r2fallnum: w2 R Number of falls                              | Cont  |
| 3    | R3FALLNUM | r3fallnum: w3 R Number of falls                              | Cont  |
| 4    | R4FALLNUM | r4fallnum: w4 R Number of falls                              | Cont  |
| 5    | R5FALLNUM | r5fallnum: w5 R Number of falls                              | Cont  |
| 1    | S1FALLNUM | s1fallnum: w1 S Number of falls                              | Cont  |
| 2    | S2FALLNUM | s2fallnum: w2 S Number of falls                              | Cont  |
| 3    | S3FALLNUM | s3fallnum: w3 S Number of falls                              | Cont  |
| 4    | S4FALLNUM | s4fallnum: w4 S Number of falls                              | Cont  |
| 5    | S5FALLNUM | s5fallnum: w5 S Number of falls                              | Cont  |
| 1    | R1FALLINJ | r1fallinj: w1 R Injured from fall                            | Categ |
| 2    | R2FALLINJ | r2fallinj: w2 R Injured from fall                            | Categ |
| 3    | R3FALLINJ | r3fallinj: w3 R Injured from fall                            | Categ |
| 4    | R4FALLINJ | r4fallinj: w4 R Injured from fall                            | Categ |
| 5    | R5FALLINJ | r5fallinj: w5 R Injured from fall                            | Categ |
| 1    | S1FALLINJ | s1fallinj: w1 S Injured from fall                            | Categ |
| 2    | S2FALLINJ | s2fallinj: w2 S Injured from fall                            | Categ |
| 3    | S3FALLINJ | s3fallinj: w3 S Injured from fall                            | Categ |
| 4    | S4FALLINJ | s4fallinj: w4 S Injured from fall                            | Categ |
| 5    | S5FALLINJ | s5fallinj: w5 S Injured from fall                            | Categ |
| 1    | R1HIPE_M  | r1hipe_m: w1 R Ever fractured a bone (including hip)         | Categ |
| 2    | R2HIPE_M  | r2hipe_m: w2 R Ever fractured a bone (including hip)         | Categ |
| 3    | R3HIPE_M  | r3hipe_m: w3 R Ever fractured a bone (including hip)         | Categ |
| 4    | R4HIPE_M  | r4hipe_m: w4 R Ever fractured a bone (including hip)         | Categ |
| 1    | S1HIPE_M  | s1hipe_m: w1 S Ever fractured a bone (including hip)         | Categ |
| 2    | S2HIPE_M  | s2hipe_m: w2 S Ever fractured a bone (including hip)         | Categ |
| 3    | S3HIPE_M  | s3hipe_m: w3 S Ever fractured a bone (including hip)         | Categ |
| 4    | S4HIPE_M  | s4hipe_m: w4 S Ever fractured a bone (including hip)         | Categ |
| 3    | R3HIP_M   | r3hip_m: w3 R Fractured a bone (including hip) in the last 2 | Categ |
| 4    | R4HIP_M   | r4hip_m: w4 R Fractured a bone (including hip) in the last 2 | Categ |
| 5    | R5HIP_M   | r5hip_m: w5 R Fractured a bone (including hip) in the last 2 | Categ |
| 3    | S3HIP_M   | s3hip_m: w3 S Fractured a bone (including hip) in the last 2 | Categ |
| 4    | S4HIP_M   | s4hip_m: w4 S Fractured a bone (including hip) in the last 2 | Categ |
| 5    | S5HIP_M   | s5hip_m: w5 S Fractured a bone (including hip) in the last 2 | Categ |
| 5    | R5HIP     | r5hip: w5 R Fractured hip in the last 2 yrs                  | Categ |
| 5    | S5HIP     | s5hip: w5 R Fractured hip in the last 2 yrs                  | Categ |

Descriptive Statistics

| Variable  | N     | Mean | Std Dev | Minimum | Maximum |
|-----------|-------|------|---------|---------|---------|
| R1FALL    | 15159 | 0.35 | 0.48    | 0.00    | 1.00    |
| R2FALL    | 13683 | 0.36 | 0.48    | 0.00    | 1.00    |
| R3FALL    | 15715 | 0.39 | 0.49    | 0.00    | 1.00    |
| R4FALL    | 14766 | 0.44 | 0.50    | 0.00    | 1.00    |
| R5FALL    | 17104 | 0.41 | 0.49    | 0.00    | 1.00    |
| S1FALL    | 10625 | 0.32 | 0.47    | 0.00    | 1.00    |
| S2FALL    | 9554  | 0.33 | 0.47    | 0.00    | 1.00    |
| S3FALL    | 10585 | 0.36 | 0.48    | 0.00    | 1.00    |
| S4FALL    | 9647  | 0.41 | 0.49    | 0.00    | 1.00    |
| S5FALL    | 7632  | 0.40 | 0.49    | 0.00    | 1.00    |
| R1FALLNUM | 15038 | 0.99 | 2.42    | 0.00    | 50.00   |
| R2FALLNUM | 13590 | 1.00 | 2.46    | 0.00    | 50.00   |
| R3FALLNUM | 15676 | 1.14 | 2.94    | 0.00    | 98.00   |
| R4FALLNUM | 14728 | 1.29 | 3.11    | 0.00    | 98.00   |
| R5FALLNUM | 17048 | 1.14 | 2.75    | 0.00    | 98.00   |
| S1FALLNUM | 10549 | 0.86 | 2.23    | 0.00    | 50.00   |
| S2FALLNUM | 9494  | 0.88 | 2.31    | 0.00    | 50.00   |
| S3FALLNUM | 10567 | 1.00 | 2.56    | 0.00    | 98.00   |
| S4FALLNUM | 9625  | 1.14 | 2.71    | 0.00    | 80.00   |
| S5FALLNUM | 7604  | 1.10 | 2.74    | 0.00    | 98.00   |
| R1FALLINJ | 11845 | 0.17 | 0.38    | 0.00    | 1.00    |
| R2FALLINJ | 10740 | 0.19 | 0.39    | 0.00    | 1.00    |
| R3FALLINJ | 11792 | 0.19 | 0.39    | 0.00    | 1.00    |
| R4FALLINJ | 10602 | 0.23 | 0.42    | 0.00    | 1.00    |
| R5FALLINJ | 12818 | 0.21 | 0.41    | 0.00    | 1.00    |
| S1FALLINJ | 8488  | 0.15 | 0.35    | 0.00    | 1.00    |
| S2FALLINJ | 7624  | 0.16 | 0.37    | 0.00    | 1.00    |
| S3FALLINJ | 8083  | 0.16 | 0.37    | 0.00    | 1.00    |
| S4FALLINJ | 7042  | 0.20 | 0.40    | 0.00    | 1.00    |
| S5FALLINJ | 5724  | 0.20 | 0.40    | 0.00    | 1.00    |
| R1HIPE_M  | 13416 | 0.13 | 0.34    | 0.00    | 1.00    |
| R2HIPE_M  | 5528  | 0.19 | 0.39    | 0.00    | 1.00    |
| R3HIPE_M  | 15289 | 0.17 | 0.38    | 0.00    | 1.00    |
| R4HIPE_M  | 14620 | 0.23 | 0.42    | 0.00    | 1.00    |
| S1HIPE_M  | 9014  | 0.11 | 0.32    | 0.00    | 1.00    |
| S2HIPE_M  | 3553  | 0.17 | 0.37    | 0.00    | 1.00    |
| S3HIPE_M  | 10193 | 0.15 | 0.35    | 0.00    | 1.00    |
| S4HIPE_M  | 9510  | 0.20 | 0.40    | 0.00    | 1.00    |
| R3HIP_M   | 15286 | 0.05 | 0.22    | 0.00    | 1.00    |
| R4HIP_M   | 14614 | 0.05 | 0.22    | 0.00    | 1.00    |
| R5HIP_M   | 17104 | 0.09 | 0.28    | 0.00    | 1.00    |
| S3HIP_M   | 10192 | 0.04 | 0.20    | 0.00    | 1.00    |
| S4HIP_M   | 9509  | 0.05 | 0.21    | 0.00    | 1.00    |
| S5HIP_M   | 7631  | 0.08 | 0.28    | 0.00    | 1.00    |
| R5HIP     | 17104 | 0.03 | 0.18    | 0.00    | 1.00    |
| S5HIP     | 7631  | 0.03 | 0.17    | 0.00    | 1.00    |

Categorical Variable Codes

|                            |           |           |           |           |           |
|----------------------------|-----------|-----------|-----------|-----------|-----------|
| Value-----                 | R1FALL    | R2FALL    | R3FALL    | R4FALL    | R5FALL    |
| .d:DK                      | 19        | 19        | 5         | 9         | 9         |
| .m:Missing                 | 4         |           |           | 2         |           |
| .r:Refuse                  | 4         | 2         | 3         | 2         | 1         |
| 0.no                       | 9781      | 8711      | 9552      | 8209      | 10110     |
| 1.yes                      | 5378      | 4972      | 6163      | 6557      | 6994      |
| Value-----                 | S1FALL    | S2FALL    | S3FALL    | S4FALL    | S5FALL    |
| .d:DK                      | 16        | 9         | 4         | 4         | 6         |
| .m:Missing                 | 3         |           |           |           |           |
| .r:Refuse                  | 4         | 1         | 3         | 1         |           |
| .u:Unmar                   | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                   | 333       | 131       | 349       | 280       | 501       |
| 0.no                       | 7233      | 6387      | 6762      | 5649      | 4579      |
| 1.yes                      | 3392      | 3167      | 3823      | 3998      | 3053      |
| Value-----                 | R1FALLINJ | R2FALLINJ | R3FALLINJ | R4FALLINJ | R5FALLINJ |
| .d:DK                      | 28        | 21        | 7         | 9         | 9         |
| .m:Missing                 | 4         |           |           | 2         |           |
| .r:Refuse                  | 23        | 2         | 6         | 2         | 4         |
| .x:does not have condition | 3286      | 2941      | 3918      | 4164      | 4283      |
| 0.no                       | 9781      | 8711      | 9552      | 8209      | 10110     |
| 1.yes                      | 2064      | 2029      | 2240      | 2393      | 2708      |
| Value-----                 | S1FALLINJ | S2FALLINJ | S3FALLINJ | S4FALLINJ | S5FALLINJ |
| .d:DK                      | 20        | 11        | 4         | 4         | 6         |
| .m:Missing                 | 3         |           |           |           |           |
| .r:Refuse                  | 17        | 1         | 5         | 1         | 2         |
| .u:Unmar                   | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                   | 333       | 131       | 349       | 280       | 501       |
| .x:does not have condition | 2120      | 1928      | 2500      | 2605      | 1906      |
| 0.no                       | 7233      | 6387      | 6762      | 5649      | 4579      |
| 1.yes                      | 1255      | 1237      | 1321      | 1393      | 1145      |
| Value-----                 | R1HIPE_M  | R2HIPE_M  | R3HIPE_M  | R4HIPE_M  |           |
| .a:age lt 50               | 1413      | 205       | 430       | 42        |           |
| .d:DK                      | 89        | 16        | 2         | 114       |           |
| .m:Missing                 | 31        |           |           | 2         |           |
| .r:Refuse                  | 237       | 2         | 2         | 1         |           |
| .s:Skip                    |           | 7953      |           |           |           |
| 0.no                       | 11667     | 4500      | 12629     | 11313     |           |
| 1.yes                      | 1749      | 1028      | 2660      | 3307      |           |
| Value-----                 | S1HIPE_M  | S2HIPE_M  | S3HIPE_M  | S4HIPE_M  |           |
| .a:age lt 50               | 1356      | 190       | 396       | 41        |           |
| .d:DK                      | 68        | 8         | 1         | 100       |           |
| .m:Missing                 | 19        |           |           |           |           |
| .r:Refuse                  | 191       | 1         | 2         | 1         |           |
| .s:Skip                    |           | 5812      |           |           |           |
| .u:Unmar                   | 4205      | 4009      | 4782      | 4847      |           |
| .v:SP NR                   | 333       | 131       | 349       | 280       |           |
| 0.no                       | 7979      | 2952      | 8698      | 7652      |           |
| 1.yes                      | 1035      | 601       | 1495      | 1858      |           |
| Value-----                 |           |           | R3HIP_M   | R4HIP_M   | R5HIP_M   |
| .a:age lt 50               |           |           | 430       | 42        |           |
| .d:DK                      |           |           | 4         | 120       | 4         |
| .m:Missing                 |           |           |           | 2         |           |
| .r:Refuse                  |           |           | 3         | 1         | 6         |
| 0.no                       |           |           | 14528     | 13845     | 15621     |
| 1.yes                      |           |           | 758       | 769       | 1483      |
| Value-----                 |           |           | S3HIP_M   | S4HIP_M   | S5HIP_M   |
| .a:age lt 50               |           |           | 396       | 41        |           |
| .d:DK                      |           |           | 1         | 101       | 3         |
| .r:Refuse                  |           |           | 3         | 1         | 4         |
| .u:Unmar                   |           |           | 4782      | 4847      | 5227      |
| .v:SP NR                   |           |           | 349       | 280       | 501       |
| 0.no                       |           |           | 9767      | 9069      | 6984      |
| 1.yes                      |           |           | 425       | 440       | 647       |
| Value-----                 |           |           |           |           | R5HIP     |

|            |  |       |
|------------|--|-------|
| .d:DK      |  | 4     |
| .r:Refuse  |  | 6     |
| 0.no       |  | 16563 |
| 1.yes      |  | 541   |
| Value----- |  | S5HIP |
| .d:DK      |  | 3     |
| .r:Refuse  |  | 4     |
| .u:Unmar   |  | 5227  |
| .v:SP NR   |  | 501   |
| 0.no       |  | 7390  |
| 1.yes      |  | 241   |

How Constructed

RwFALL indicates whether the respondent has fallen down in the last 2 years. RwFALL is coded as 0.No and 1.Yes. Don't know, refused, or other missing responses are assigned special missing codes .d, .r, and .m, respectively. RwFALL is set to plain missing (.) for respondents who did not participate in the current wave.

RwFALLNUM indicates the number of times the respondent has fallen down (in the last 2 years). RwFALLNUM is coded as 0 if the respondent has not fallen down in the last 2 years. RwFALLINJ indicates whether the respondent has ever been injured seriously enough from a fall to need medical treatment. RwFALLINJ is coded as 0.No and 1.Yes. RwFALLINJ is assigned special missing .x if the respondent did not experience a fall in the previous two years. Don't know, refused, or other missing responses are assigned special missing codes .d, .r, and .m, respectively. RwFALLNUM and RwFALLINJ are set to plain missing (.) for respondents who did not participate in the current wave.

RwHIPE\_M indicates whether the respondent has ever had a fractured a bone, including the hip, since their fiftieth birthday. RwHIP\_M indicates whether the respondent has fractured a bone, including the hip, in the past two years, and is available starting in Wave 3. RwHIP indicates whether the respondent has fractured their hip in the past two years and is available starting in Wave 5. RwHIPE\_M, RwHIP\_M, and RwHIP are coded as 0.No and 1.Yes. Respondents younger than age 50 are not asked about a broken hip in Waves 1 through 4 and RwHIPE\_M and RwHIP\_M are assigned special missing .a. In Wave 2, RwHIPE\_M is assigned special missing .s if the respondent had not fallen down in the last two years and the question about hip fracture was skipped. Don't know, refused, or other missing responses are assigned special missing codes .d, .r, and .m, respectively. RwHIPE\_M, RwHIP\_M, and RwHIP are set to plain missing (.) for respondents who did not participate in the current wave.

SwFALL, SwFALLNUM, SwFALLINJ, SwHIPE\_M, SwHIP\_M, and SwHIP variables are taken from the Wave 'w' spouse's self-reported RwFALL, RwFALLNUM, RwFALLINJ, RwHIPE\_M, RwHIP\_M, and RwHIP variables. In addition to the special missing codes used in RwFALL, RwFALLNUM, RwFALLINJ, RwHIPE\_M, RwHIP\_M, and RwHIP; SwFALL, SwFALLNUM, SwFALLINJ, SwHIPE\_M, SwHIP\_M, and SwHIP employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

Cross Wave Differences in MHAS

In Wave 1, all respondents age 50 and older are asked if they have fractured any bone including their hip since their fiftieth birthday. In Wave 2, respondents age 50 and older who have fallen in the last two years are asked if they have fractured any bone including their hip since their fiftieth birthday. In Waves 3 and 4, follow-up respondents age 50 and older are asked if they have fractured any bones including their hip in the last 10 years, while new respondents age 50 and older are asked if they have fractured any bones including their hip since their fiftieth birthday. If follow-up or new respondents report a fracture, they are then asked if the fracture occurred in the last two years. Starting in Wave 5, all respondents are asked if they have fractured any bones including their hip in the last two years, and are given the option of answering: 1.no, none, 2.yes, the hip, 3.yes, the hip and other bones, 4.yes, other bones.

Differences with the RAND HRS/Harmonized HRS

In the HRS, respondents are asked whether they have fractured the hip, whereas in most waves the MHAS respondent are asked if they fractured any bone, including the hip. As such, the Harmonized HRS includes RwHIPE, indicating whether the respondent has ever broken their hip, while the Harmonized MHAS includes RwHIPE\_M and RwHIP\_M, indicating whether the respondent has broken a bone including their hip since their

fiftieth birthday or in the last two years, respectively. Starting in Wave 5, the Harmonized MHAS also includes RWHIP, indicating whether the respondent has broken their hip in the last two years.

## MHAS Variables Used

### Wave 1:

C40                    fallen down  
C41                    number of falls  
C42                    treatment for falls  
C43                    bone fracture

### Wave 2:

C37                    fell in last two years  
C38                    number of falls  
C39                    needed to see doctor after fall  
C40                    broken bones since age 50

### Wave 3:

C37\_12                Last 2 years:Has respondent fallen down  
C38\_12                Last 2 years:Respondent's number of falls  
C39\_12                Last 2 years:Respondent's treatment for falls  
C40A\_12               Since age 50:Has respondent fractured bone(s)  
C40B\_12               Last 10 years:Has respondent fractured bone(s)  
C40C\_12               Last 2 years:Did respondent fracture bone(s)

### Wave 4:

C37\_15                In the last 2 years: Has respondent fall down  
C38\_15                In the last 2 years: Respondent's number of falls  
C39\_15                In the last 2 years: Respondent needed treatment for fa  
C40A\_15               Since age 50: Has respondent fractured any bone(s)  
C40B\_15               Last 10 years: Has respondent fractured any bone(s)

### Wave 5:

C37\_18                In the last 2 years: Has R fall down  
C38\_18                In the last 2 years: R's number of falls  
C39\_18                In the last 2 years: R needed treatment for falls  
C40B\_18               Last 2 years: Did R fracture any bone(s)

|                             |
|-----------------------------|
| <b>Urinary Incontinence</b> |
|-----------------------------|

| Wave | Variable    | Label  | Type  |
|------|-------------|--|-------|
| 1    | R1URINA2Y   | r1urina2y: w1 R Any urinary incontinence (last 2 yrs)    | Categ |
| 2    | R2URINA2Y   | r2urina2y: w2 R Any urinary incontinence (last 2 yrs)    | Categ |
| 1    | S1URINA2Y   | s1urina2y: w1 S Any urinary incontinence (last 2 yrs)    | Categ |
| 2    | S2URINA2Y   | s2urina2y: w2 S Any urinary incontinence (last 2 yrs)    | Categ |
| 3    | R3URINURG2Y | r3urinurg2y: w3 R Urge to urinate (last 2 yrs)           | Categ |
| 4    | R4URINURG2Y | r4urinurg2y: w4 R Urge to urinate (last 2 yrs)           | Categ |
| 5    | R5URINURG2Y | r5urinurg2y: w5 R Urge to urinate (last 2 yrs)           | Categ |
| 3    | S3URINURG2Y | s3urinurg2y: w3 S Urge to urinate (last 2 yrs)           | Categ |
| 4    | S4URINURG2Y | s4urinurg2y: w4 S Urge to urinate (last 2 yrs)           | Categ |
| 5    | S5URINURG2Y | s5urinurg2y: w5 S Urge to urinate (last 2 yrs)           | Categ |
| 3    | R3URINCGH2Y | r3urincgh2y: w3 R Leaks urine when coughing (last 2 yrs) | Categ |
| 4    | R4URINCGH2Y | r4urincgh2y: w4 R Leaks urine when coughing (last 2 yrs) | Categ |
| 5    | R5URINCGH2Y | r5urincgh2y: w5 R Leaks urine when coughing (last 2 yrs) | Categ |
| 3    | S3URINCGH2Y | s3urincgh2y: w3 S Leaks urine when coughing (last 2 yrs) | Categ |
| 4    | S4URINCGH2Y | s4urincgh2y: w4 S Leaks urine when coughing (last 2 yrs) | Categ |
| 5    | S5URINCGH2Y | s5urincgh2y: w5 S Leaks urine when coughing (last 2 yrs) | Categ |

### Descriptive Statistics

| Variable    | N     | Mean | Std Dev | Minimum | Maximum |
|-------------|-------|------|---------|---------|---------|
| R1URINA2Y   | 14121 | 0.08 | 0.27    | 0.00    | 1.00    |
| R2URINA2Y   | 12517 | 0.09 | 0.28    | 0.00    | 1.00    |
| S1URINA2Y   | 9966  | 0.07 | 0.26    | 0.00    | 1.00    |
| S2URINA2Y   | 8738  | 0.08 | 0.28    | 0.00    | 1.00    |
| R3URINURG2Y | 14432 | 0.15 | 0.35    | 0.00    | 1.00    |
| R4URINURG2Y | 13837 | 0.20 | 0.40    | 0.00    | 1.00    |
| R5URINURG2Y | 15770 | 0.16 | 0.37    | 0.00    | 1.00    |
| S3URINURG2Y | 9856  | 0.13 | 0.34    | 0.00    | 1.00    |
| S4URINURG2Y | 9178  | 0.18 | 0.39    | 0.00    | 1.00    |
| S5URINURG2Y | 7067  | 0.16 | 0.37    | 0.00    | 1.00    |
| R3URINCGH2Y | 14437 | 0.15 | 0.36    | 0.00    | 1.00    |
| R4URINCGH2Y | 13837 | 0.19 | 0.39    | 0.00    | 1.00    |
| R5URINCGH2Y | 15770 | 0.17 | 0.38    | 0.00    | 1.00    |
| S3URINCGH2Y | 9859  | 0.14 | 0.35    | 0.00    | 1.00    |
| S4URINCGH2Y | 9178  | 0.17 | 0.38    | 0.00    | 1.00    |
| S5URINCGH2Y | 7067  | 0.16 | 0.37    | 0.00    | 1.00    |

### Categorical Variable Codes

| Value-----                    | R1URINA2Y | R2URINA2Y |
|-------------------------------|-----------|-----------|
| .d:DK                         | 13        | 8         |
| .m:Missing                    | 4         |           |
| .p:Proxy interview, not asked | 1032      | 1178      |
| .r:Refuse                     | 16        | 1         |
| 0.no                          | 13023     | 11408     |
| 1.yes                         | 1098      | 1109      |

| Value-----                    | S1URINA2Y | S2URINA2Y |  |  |  |
|-------------------------------|-----------|-----------|--|--|--|
| .d:DK                         | 8         | 4         |  |  |  |
| .m:Missing                    | 3         |           |  |  |  |
| .p:Proxy interview, not asked | 660       | 821       |  |  |  |
| .r:Refuse                     | 11        | 1         |  |  |  |
| .u:Unmar                      | 4205      | 4009      |  |  |  |
| .v:SP NR                      | 333       | 131       |  |  |  |
| 0.no                          | 9242      | 8004      |  |  |  |
| 1.yes                         | 724       | 734       |  |  |  |

| Value-----                    | R3URINURG2Y | R4URINURG2Y | R5URINURG2Y |
|-------------------------------|-------------|-------------|-------------|
| .d:DK                         | 4           | 1           | 5           |
| .m:Missing                    |             | 9           |             |
| .p:Proxy interview, not asked | 1275        | 929         | 1328        |
| .r:Refuse                     | 12          | 3           | 11          |
| 0.no                          | 12328       | 11034       | 13169       |
| 1.yes                         | 2104        | 2803        | 2601        |

| Value-----                    | S3URINURG2Y | S4URINURG2Y | S5URINURG2Y |
|-------------------------------|-------------|-------------|-------------|
| .d:DK                         | 2           | 1           | 4           |
| .m:Missing                    |             | 1           |             |
| .p:Proxy interview, not asked | 726         | 470         | 563         |
| .r:Refuse                     | 8           | 2           | 4           |
| .u:Unmar                      | 4782        | 4847        | 5227        |
| .v:SP NR                      | 349         | 280         | 501         |
| 0.no                          | 8531        | 7487        | 5911        |
| 1.yes                         | 1325        | 1691        | 1156        |

| Value-----                    | R3URINCGH2Y | R4URINCGH2Y | R5URINCGH2Y |
|-------------------------------|-------------|-------------|-------------|
| .d:DK                         | 3           | 2           | 5           |
| .m:Missing                    |             | 9           |             |
| .p:Proxy interview, not asked | 1275        | 929         | 1328        |
| .r:Refuse                     | 8           | 2           | 11          |
| 0.no                          | 12203       | 11204       | 13088       |
| 1.yes                         | 2234        | 2633        | 2682        |

| Value-----                    | S3URINCGH2Y | S4URINCGH2Y | S5URINCGH2Y |
|-------------------------------|-------------|-------------|-------------|
| .d:DK                         | 2           | 1           | 4           |
| .m:Missing                    |             | 1           |             |
| .p:Proxy interview, not asked | 726         | 470         | 563         |
| .r:Refuse                     | 5           | 2           | 4           |
| .u:Unmar                      | 4782        | 4847        | 5227        |
| .v:SP NR                      | 349         | 280         | 501         |
| 0.no                          | 8460        | 7579        | 5941        |
| 1.yes                         | 1399        | 1599        | 1126        |

## How Constructed

RwURINA2Y indicates whether the respondent has experienced any urinary incontinence in the last 2 yrs. RwURINA2Y is only available in Waves 1 and 2. RwURINA2Y is coded as 0.No and 1.Yes. RwURINA2Y is set to the special missing value .p if the current interview was completed by proxy. Don't know, refused, or other missing responses are assigned special missing codes .d, .r, and .m, respectively. RwURINA2Y is set to plain missing (.) for respondents who did not participate in the current wave.

RwURINCGH2Y indicates whether in the last 2 years, the respondent has experienced any incontinence when coughing, sneezing, picking something up, or exercising. RwURINURG2Y indicates whether the respondent has experienced any incontinence when they had the urge to urinate, but couldn't reach the bathroom in time. RwURINCGH2Y and Rw4URINURG2Y are available starting in Wave 3. RwURINCGH2Y and Rw4URINURG2Y are coded as 0.No and 1.Yes. RwURINCGH2Y and Rw4URINURG2Y are set to the special missing value .p if the current interview was completed by proxy. Don't know, refused, or other missing responses are assigned special missing codes .d, .r, and .m, respectively. RwURINCGH2Y and Rw4URINURG2Y are set to plain missing (.) for respondents who did not participate in the current wave.

SwURINA2Y, SwURINCGH2Y, and SwURINURG2Y variables are taken from the Wave 'w' spouse's self-reported RwURINA2Y, RwURINCGH2Y, and RwURINURG2Y variables. In addition to the special missing codes used in RwURINA2Y, RwURINCGH2Y, and RwURINURG2Y; SwURINA2Y, SwURINCGH2Y, and SwURINURG2Y employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

Cross Wave Differences in MHAS

The series of questions on urinary incontinence in the MHAS are part of the symptoms battery in the Health section. These questions have been modified across waves. In the first two waves, respondents were only asked if they had experienced any urinary incontinence. However, starting in Wave 3, respondents were instead asked, in two separate questions, if they had experienced any incontinence when coughing, sneezing, picking something up, or exercising, and if they had experienced any incontinence when they had the urge to urinate, but couldn't reach the bathroom in time.

Differences with the RAND HRS/Harmonized HRS

Different to the HRS, in the MHAS respondents are asked whether they have experienced any of these symptoms in the past 2 years instead of the past 12 months. As such, the Harmonized HRS includes RwURINA, RwURINCGH, and RwURINURG, while the Harmonized MHAS includes RwURINA2Y, RwURINCGH2Y, and RwURINURG2Y due to the different time frames.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| C73I    | urine loss  |
| Wave 2: |   |
| C68I    | involuntary bladder movements                           |
| Wave 3: |   |
| C68G_12 | Last 2 years:frequent incontinence while performing tas |
| C68H_12 | Last 2 years:Frequent incontinence with urge to urinate |
| Wave 4: |   |
| C68G_15 | During the last 2 years: Respondent had frequent incont |
| C68H_15 | During the last 2 years: Respondent had frequent incont |
| Wave 5: |   |
| C68G_18 | During the last 2 years: R had frequent incontinence    |
| C68H_18 | During the last 2 years: R had frequent incontinence wh |



|                                   |
|-----------------------------------|
| <b>Persistent Health Problems</b> |
|-----------------------------------|

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 1    | R1SWELL    | r1swell: w1 R Persistent swelling in feet/ankles       | Categ |
| 2    | R2SWELL    | r2swell: w2 R Persistent swelling in feet/ankles       | Categ |
| 3    | R3SWELL    | r3swell: w3 R Persistent swelling in feet/ankles       | Categ |
| 4    | R4SWELL    | r4swell: w4 R Persistent swelling in feet/ankles       | Categ |
| 5    | R5SWELL    | r5swell: w5 R Persistent swelling in feet/ankles       | Categ |
| 1    | S1SWELL    | s1swell: w1 S Persistent swelling in feet/ankles       | Categ |
| 2    | S2SWELL    | s2swell: w2 S Persistent swelling in feet/ankles       | Categ |
| 3    | S3SWELL    | s3swell: w3 S Persistent swelling in feet/ankles       | Categ |
| 4    | S4SWELL    | s4swell: w4 S Persistent swelling in feet/ankles       | Categ |
| 5    | S5SWELL    | s5swell: w5 S Persistent swelling in feet/ankles       | Categ |
| 1    | R1BREATH_M | r1breath_m: w1 R Difficulty breathing while lying down | Categ |
| 2    | R2BREATH_M | r2breath_m: w2 R Difficulty breathing while lying down | Categ |
| 3    | R3BREATH_M | r3breath_m: w3 R Difficulty breathing or coughing      | Categ |
| 4    | R4BREATH_M | r4breath_m: w4 R Difficulty breathing or coughing      | Categ |
| 5    | R5BREATH_M | r5breath_m: w5 R Difficulty breathing or coughing      | Categ |
| 1    | S1BREATH_M | s1breath_m: w1 S Difficulty breathing while lying down | Categ |
| 2    | S2BREATH_M | s2breath_m: w2 S Difficulty breathing while lying down | Categ |
| 3    | S3BREATH_M | s3breath_m: w3 S Difficulty breathing or coughing      | Categ |
| 4    | S4BREATH_M | s4breath_m: w4 S Difficulty breathing or coughing      | Categ |
| 5    | S5BREATH_M | s5breath_m: w5 S Difficulty breathing or coughing      | Categ |
| 1    | R1WHEEZE   | r1wheeze: w1 R Persistent wheezing                     | Categ |
| 2    | R2WHEEZE   | r2wheeze: w2 R Persistent wheezing                     | Categ |
| 1    | S1WHEEZE   | s1wheeze: w1 S Persistent wheezing                     | Categ |
| 2    | S2WHEEZE   | s2wheeze: w2 S Persistent wheezing                     | Categ |
| 1    | R1FATIGUE  | r1fatigue: w1 R Severe fatigue                         | Categ |
| 2    | R2FATIGUE  | r2fatigue: w2 R Severe fatigue                         | Categ |
| 3    | R3FATIGUE  | r3fatigue: w3 R Severe fatigue                         | Categ |
| 4    | R4FATIGUE  | r4fatigue: w4 R Severe fatigue                         | Categ |
| 5    | R5FATIGUE  | r5fatigue: w5 R Severe fatigue                         | Categ |
| 1    | S1FATIGUE  | s1fatigue: w1 S Severe fatigue                         | Categ |
| 2    | S2FATIGUE  | s2fatigue: w2 S Severe fatigue                         | Categ |
| 3    | S3FATIGUE  | s3fatigue: w3 S Severe fatigue                         | Categ |
| 4    | S4FATIGUE  | s4fatigue: w4 S Severe fatigue                         | Categ |
| 5    | S5FATIGUE  | s5fatigue: w5 S Severe fatigue                         | Categ |

## Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1SWELL  | 14128 | 0.28 | 0.45    | 0.00    | 1.00    |
| R2SWELL  | 12518 | 0.26 | 0.44    | 0.00    | 1.00    |
| R3SWELL  | 14442 | 0.26 | 0.44    | 0.00    | 1.00    |
| R4SWELL  | 13839 | 0.26 | 0.44    | 0.00    | 1.00    |
| R5SWELL  | 15778 | 0.23 | 0.42    | 0.00    | 1.00    |
| S1SWELL  | 9970  | 0.27 | 0.44    | 0.00    | 1.00    |
| S2SWELL  | 8737  | 0.24 | 0.43    | 0.00    | 1.00    |
| S3SWELL  | 9862  | 0.24 | 0.43    | 0.00    | 1.00    |
| S4SWELL  | 9177  | 0.24 | 0.43    | 0.00    | 1.00    |
| S5SWELL  | 7072  | 0.23 | 0.42    | 0.00    | 1.00    |

|            |       |      |      |      |      |
|------------|-------|------|------|------|------|
| R1BREATH_M | 14127 | 0.14 | 0.35 | 0.00 | 1.00 |
| R2BREATH_M | 12521 | 0.14 | 0.35 | 0.00 | 1.00 |
| R3BREATH_M | 14443 | 0.18 | 0.38 | 0.00 | 1.00 |
| R4BREATH_M | 13841 | 0.19 | 0.40 | 0.00 | 1.00 |
| R5BREATH_M | 15778 | 0.18 | 0.38 | 0.00 | 1.00 |
|            |       |      |      |      |      |
| S1BREATH_M | 9969  | 0.14 | 0.35 | 0.00 | 1.00 |
| S2BREATH_M | 8739  | 0.14 | 0.35 | 0.00 | 1.00 |
| S3BREATH_M | 9862  | 0.17 | 0.38 | 0.00 | 1.00 |
| S4BREATH_M | 9179  | 0.19 | 0.39 | 0.00 | 1.00 |
| S5BREATH_M | 7072  | 0.17 | 0.38 | 0.00 | 1.00 |
|            |       |      |      |      |      |
| R1WHEEZE   | 14120 | 0.18 | 0.38 | 0.00 | 1.00 |
| R2WHEEZE   | 12524 | 0.17 | 0.38 | 0.00 | 1.00 |
|            |       |      |      |      |      |
| S1WHEEZE   | 9964  | 0.17 | 0.37 | 0.00 | 1.00 |
| S2WHEEZE   | 8741  | 0.16 | 0.37 | 0.00 | 1.00 |
|            |       |      |      |      |      |
| R1FATIGUE  | 14118 | 0.27 | 0.44 | 0.00 | 1.00 |
| R2FATIGUE  | 12523 | 0.26 | 0.44 | 0.00 | 1.00 |
| R3FATIGUE  | 14440 | 0.22 | 0.41 | 0.00 | 1.00 |
| R4FATIGUE  | 13838 | 0.21 | 0.41 | 0.00 | 1.00 |
| R5FATIGUE  | 15773 | 0.19 | 0.39 | 0.00 | 1.00 |
|            |       |      |      |      |      |
| S1FATIGUE  | 9960  | 0.26 | 0.44 | 0.00 | 1.00 |
| S2FATIGUE  | 8740  | 0.25 | 0.43 | 0.00 | 1.00 |
| S3FATIGUE  | 9859  | 0.21 | 0.41 | 0.00 | 1.00 |
| S4FATIGUE  | 9178  | 0.20 | 0.40 | 0.00 | 1.00 |
| S5FATIGUE  | 7069  | 0.18 | 0.39 | 0.00 | 1.00 |

## Categorical Variable Codes

|                               |         |         |         |         |         |
|-------------------------------|---------|---------|---------|---------|---------|
| Value-----                    | R1SWELL | R2SWELL | R3SWELL | R4SWELL | R5SWELL |
| .d:DK                         | 10      | 7       | 2       | 3       | 2       |
| .m:Missing                    | 4       |         |         | 7       |         |
| .p:Proxy interview, not asked | 1032    | 1178    | 1275    | 929     | 1328    |
| .r:Refuse                     | 12      | 1       | 4       | 1       | 6       |
| 0.no                          | 10169   | 9252    | 10754   | 10308   | 12089   |
| 1.yes                         | 3959    | 3266    | 3688    | 3531    | 3689    |

|                               |         |         |         |         |         |
|-------------------------------|---------|---------|---------|---------|---------|
| Value-----                    | S1SWELL | S2SWELL | S3SWELL | S4SWELL | S5SWELL |
| .d:DK                         | 7       | 6       | 1       | 3       | 1       |
| .m:Missing                    | 3       |         |         | 1       |         |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 8       |         | 3       | 1       | 2       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| 0.no                          | 7282    | 6610    | 7497    | 6957    | 5462    |
| 1.yes                         | 2688    | 2127    | 2365    | 2220    | 1610    |

|                               |            |            |            |            |            |
|-------------------------------|------------|------------|------------|------------|------------|
| Value-----                    | R1BREATH_M | R2BREATH_M | R3BREATH_M | R4BREATH_M | R5BREATH_M |
| .d:DK                         | 10         | 3          |            | 1          | 2          |
| .m:Missing                    | 4          |            |            | 7          |            |
| .p:Proxy interview, not asked | 1032       | 1178       | 1275       | 929        | 1328       |
| .r:Refuse                     | 13         | 2          | 5          | 1          | 6          |
| 0.no                          | 12101      | 10737      | 11855      | 11160      | 13007      |
| 1.yes                         | 2026       | 1784       | 2588       | 2681       | 2771       |

|                               |            |            |            |            |            |
|-------------------------------|------------|------------|------------|------------|------------|
| Value-----                    | S1BREATH_M | S2BREATH_M | S3BREATH_M | S4BREATH_M | S5BREATH_M |
| .d:DK                         | 8          | 2          |            | 1          | 1          |
| .m:Missing                    | 3          |            |            | 1          |            |
| .p:Proxy interview, not asked | 660        | 821        | 726        | 470        | 563        |
| .r:Refuse                     | 8          | 2          | 4          | 1          | 2          |
| .u:Unmar                      | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      | 333        | 131        | 349        | 280        | 501        |
| 0.no                          | 8554       | 7523       | 8143       | 7467       | 5860       |
| 1.yes                         | 1415       | 1216       | 1719       | 1712       | 1212       |

| Value-----                    | R1WHEEZE | R2WHEEZE |
|-------------------------------|----------|----------|
| .d:DK                         | 13       | 2        |
| .m:Missing                    | 4        |          |
| .p:Proxy interview, not asked | 1032     | 1178     |
| .r:Refuse                     | 17       |          |
| 0.no                          | 11625    | 10345    |
| 1.yes                         | 2495     | 2179     |

| Value-----                    | S1WHEEZE | S2WHEEZE |
|-------------------------------|----------|----------|
| .d:DK                         | 9        | 2        |
| .m:Missing                    | 3        |          |
| .p:Proxy interview, not asked | 660      | 821      |
| .r:Refuse                     | 12       |          |
| .u:Unmar                      | 4205     | 4009     |
| .v:SP NR                      | 333      | 131      |
| 0.no                          | 8310     | 7322     |
| 1.yes                         | 1654     | 1419     |

| Value-----                    | R1FATIGUE | R2FATIGUE | R3FATIGUE | R4FATIGUE | R5FATIGUE |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         | 14        | 2         | 2         | 1         | 3         |
| .m:Missing                    | 4         |           |           | 7         |           |
| .p:Proxy interview, not asked | 1032      | 1178      | 1275      | 929       | 1328      |
| .r:Refuse                     | 18        | 1         | 6         | 4         | 10        |
| 0.no                          | 10315     | 9294      | 11282     | 10928     | 12777     |
| 1.yes                         | 3803      | 3229      | 3158      | 2910      | 2996      |

| Value-----                    | S1FATIGUE | S2FATIGUE | S3FATIGUE | S4FATIGUE | S5FATIGUE |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         | 11        | 2         | 2         | 1         | 2         |
| .m:Missing                    | 3         |           |           | 1         |           |
| .p:Proxy interview, not asked | 660       | 821       | 726       | 470       | 563       |
| .r:Refuse                     | 14        | 1         | 5         | 2         | 4         |
| .u:Unmar                      | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      | 333       | 131       | 349       | 280       | 501       |
| 0.no                          | 7351      | 6576      | 7784      | 7331      | 5774      |
| 1.yes                         | 2609      | 2164      | 2075      | 1847      | 1295      |

## How Constructed

RwSWELL, RwBREATH\_M, RwwHEEZE, and RwfFATIGUE indicate whether the respondent has experienced any persistent health problems in the last 2 years. These variables are coded as 0.no, and 1.yes. RwsWELL, RwbREATH\_M, RwwHEEZE, and RwfFATIGUE are set to the special missing value .p if the current interview was completed by proxy. Don't know, refused, or other missing responses of these variables are assigned special missing codes .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwSWELL indicates whether the respondent has experienced persistent swelling in their feet or ankles. In Waves 1 and 2, RwbREATH\_M indicates whether the respondent has experienced difficulty breathing while lying down. Starting in Wave 3, RwbREATH\_M indicates whether the respondent has experienced difficulting breathing, panting or coughing, or phlegm. In Waves 1 and 2, RwwHEEZE indicates whether the respondent has experienced persistent wheezing or cough, or bringing up phlegm. RwfFATIGUE indicates whether the respondent has experienced severe fatigue or exhaustion.

SwSWELL, SwBREATH\_M, SwWHEEZE, and SwFATIGUE variables are taken from the Wave 'w' spouse's self-reported RwsWELL, RwbREATH\_M, RwwHEEZE, and RwfFATIGUE variables. In addition to the special missing codes used in RwsWELL, RwbREATH\_M, RwwHEEZE, and RwfFATIGUE; SwSWELL, SwBREATH\_M, SwWHEEZE, and SwFATIGUE employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

In Waves 1 and 2, the respondent is asked whether they had difficulty breathing while lying down and whether they had wheezing or cough, or bring up phlegm, as separate questions. Starting in Wave 3, the respondent is asked a single question asking whether they had difficulty breathing, panting or coughing, or phlegm.

Differences with the RAND HRS/Harmonized HRS

RwBREATH\_M is a Harmonized MHAS specific variable to reflect the difference between the HRS and the MHAS. In the MHAS, respondents are asked whether they had difficulty breathing while lying down in Waves 1 and 2, and whether they have experienced difficulty breathing, pantings or coughing, or phlegm starting in Wave 3, while in the HRS they are asked whether they have experienced shortness of breath while awake.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| C73A    | swelling feet   |
| C73B    | breathing difficulty                                    |
| C73E    | severe fatigue  |
| C73F    | wheezing  |
| Wave 2: |   |
| C68A    | pain in feet/knees                                      |
| C68B    | difficulty in breathing                                 |
| C68E    | severe fatigue  |
| C68F    | cough   |
| Wave 3: |   |
| C68A_12 | Last 2 years:Respondent had frequent swelling feet/ankl |
| C68B_12 | Last 2 years:Respondent had frequent difficulty breathi |
| C68E_12 | Last 2 years:Respondent experienced frequent fatigue/ex |
| Wave 4: |   |
| C68A_15 | During the last 2 years: Respondent had frequent swell  |
| C68B_15 | During the last 2 years: Respondent had frequent diffic |
| C68E_15 | During the last 2 years: Respondent had frequent severe |
| Wave 5: |   |
| C68A_18 | During the last 2 years: R had frequent swelling in fee |
| C68B_18 | During the last 2 years: R had frequent difficulty brea |
| C68E_18 | During the last 2 years: R had frequent severe fatigue/ |

Sleep

| Wave | Variable  | Label                                     | Type  |
|------|-----------|---|-------|
| 4    | R4FALLSLP | r4fallslep: w4 R Trouble falling asleep   | Categ |
| 5    | R5FALLSLP | r5fallslep: w5 R Trouble falling asleep   | Categ |
| 4    | S4FALLSLP | s4fallslep: w4 S Trouble falling asleep   | Categ |
| 5    | S5FALLSLP | s5fallslep: w5 S Trouble falling asleep   | Categ |
| 4    | R4WAKENT  | r4wakent: w4 R Wakes up during night      | Categ |
| 5    | R5WAKENT  | r5wakent: w5 R Wakes up during night      | Categ |
| 4    | S4WAKENT  | s4wakent: w4 S Wakes up during night      | Categ |
| 5    | S5WAKENT  | s5wakent: w5 S Wakes up during night      | Categ |
| 4    | R4WAKEUP  | r4wakeup: w4 R Wakes up too early         | Categ |
| 5    | R5WAKEUP  | r5wakeup: w5 R Wakes up too early         | Categ |
| 4    | S4WAKEUP  | s4wakeup: w4 S Wakes up too early         | Categ |
| 5    | S5WAKEUP  | s5wakeup: w5 S Wakes up too early         | Categ |
| 3    | R3RESTED  | r3rested: w3 R Feels rested when wakes up | Categ |
| 4    | R4RESTED  | r4rested: w4 R Feels rested when wakes up | Categ |
| 5    | R5RESTED  | r5rested: w5 R Feels rested when wakes up | Categ |
| 3    | S3RESTED  | s3rested: w3 S Feels rested when wakes up | Categ |
| 4    | S4RESTED  | s4rested: w4 S Feels rested when wakes up | Categ |
| 5    | S5RESTED  | s5rested: w5 S Feels rested when wakes up | Categ |

Descriptive Statistics

| Variable  | N     | Mean | Std Dev | Minimum | Maximum |
|-----------|-------|------|---------|---------|---------|
| R4FALLSLP | 13837 | 2.45 | 0.71    | 1.00    | 3.00    |
| R5FALLSLP | 15782 | 2.46 | 0.71    | 1.00    | 3.00    |
| S4FALLSLP | 9180  | 2.47 | 0.70    | 1.00    | 3.00    |
| S5FALLSLP | 7075  | 2.46 | 0.72    | 1.00    | 3.00    |
| R4WAKENT  | 13834 | 2.18 | 0.71    | 1.00    | 3.00    |
| R5WAKENT  | 15781 | 2.22 | 0.71    | 1.00    | 3.00    |
| S4WAKENT  | 9177  | 2.20 | 0.71    | 1.00    | 3.00    |
| S5WAKENT  | 7075  | 2.19 | 0.71    | 1.00    | 3.00    |
| R4WAKEUP  | 13830 | 2.33 | 0.76    | 1.00    | 3.00    |
| R5WAKEUP  | 15775 | 2.30 | 0.78    | 1.00    | 3.00    |
| S4WAKEUP  | 9175  | 2.35 | 0.75    | 1.00    | 3.00    |
| S5WAKEUP  | 7070  | 2.30 | 0.79    | 1.00    | 3.00    |
| R3RESTED  | 14441 | 1.50 | 0.68    | 1.00    | 3.00    |
| R4RESTED  | 13829 | 1.53 | 0.71    | 1.00    | 3.00    |
| R5RESTED  | 15772 | 1.59 | 0.74    | 1.00    | 3.00    |
| S3RESTED  | 9861  | 1.49 | 0.68    | 1.00    | 3.00    |
| S4RESTED  | 9177  | 1.52 | 0.71    | 1.00    | 3.00    |
| S5RESTED  | 7072  | 1.57 | 0.74    | 1.00    | 3.00    |

Categorical Variable Codes

|                               |          |           |           |      |
|-------------------------------|----------|-----------|-----------|------|
| Value-----                    |          | R4FALLSLP | R5FALLSLP |      |
| .d:DK                         |          | 1         | 1         |      |
| .m:Missing                    |          | 11        |           |      |
| .p:Proxy interview, not asked |          | 929       | 1328      |      |
| .r:Refuse                     |          | 1         | 3         |      |
| 1.Most of the time            |          | 1750      | 2013      |      |
| 2.Sometimes                   |          | 4073      | 4424      |      |
| 3.Rarely or never             |          | 8014      | 9345      |      |
| Value-----                    |          | S4FALLSLP | S5FALLSLP |      |
| .d:DK                         |          | 1         |           |      |
| .m:Missing                    |          | 1         |           |      |
| .p:Proxy interview, not asked |          | 470       | 563       |      |
| .u:Unmar                      |          | 4847      | 5227      |      |
| .v:SP NR                      |          | 280       | 501       |      |
| 1.Most of the time            |          | 1107      | 930       |      |
| 2.Sometimes                   |          | 2609      | 1953      |      |
| 3.Rarely or never             |          | 5464      | 4192      |      |
| Value-----                    |          | R4WAKENT  | R5WAKENT  |      |
| .d:DK                         |          | 2         | 2         |      |
| .m:Missing                    |          | 11        |           |      |
| .p:Proxy interview, not asked |          | 929       | 1328      |      |
| .r:Refuse                     |          | 3         | 3         |      |
| 1.Most of the time            |          | 2454      | 2638      |      |
| 2.Sometimes                   |          | 6455      | 7090      |      |
| 3.Rarely or never             |          | 4925      | 6053      |      |
| Value-----                    |          | S4WAKENT  | S5WAKENT  |      |
| .d:DK                         |          | 2         |           |      |
| .m:Missing                    |          | 1         |           |      |
| .p:Proxy interview, not asked |          | 470       | 563       |      |
| .r:Refuse                     |          | 2         |           |      |
| .u:Unmar                      |          | 4847      | 5227      |      |
| .v:SP NR                      |          | 280       | 501       |      |
| 1.Most of the time            |          | 1566      | 1247      |      |
| 2.Sometimes                   |          | 4237      | 3214      |      |
| 3.Rarely or never             |          | 3374      | 2614      |      |
| Value-----                    |          | R4WAKEUP  | R5WAKEUP  |      |
| .d:DK                         |          | 2         | 6         |      |
| .m:Missing                    |          | 11        |           |      |
| .p:Proxy interview, not asked |          | 929       | 1328      |      |
| .r:Refuse                     |          | 7         | 5         |      |
| 1.Most of the time            |          | 2451      | 3200      |      |
| 2.Sometimes                   |          | 4406      | 4650      |      |
| 3.Rarely or never             |          | 6973      | 7925      |      |
| Value-----                    |          | S4WAKEUP  | S5WAKEUP  |      |
| .d:DK                         |          | 2         | 4         |      |
| .m:Missing                    |          | 1         |           |      |
| .p:Proxy interview, not asked |          | 470       | 563       |      |
| .r:Refuse                     |          | 4         | 1         |      |
| .u:Unmar                      |          | 4847      | 5227      |      |
| .v:SP NR                      |          | 280       | 501       |      |
| 1.Most of the time            |          | 1574      | 1448      |      |
| 2.Sometimes                   |          | 2852      | 2050      |      |
| 3.Rarely or never             |          | 4749      | 3572      |      |
| Value-----                    | R3RESTED | R4RESTED  | R5RESTED  |      |
| .d:DK                         |          | 4         | 6         | 10   |
| .m:Missing                    |          | 1275      | 12        |      |
| .p:Proxy interview, not asked |          |           | 929       | 1328 |
| .r:Refuse                     |          | 3         | 3         | 4    |
| 1.Most of the time            |          | 8847      | 8248      | 8876 |
| 2.Sometimes                   |          | 4034      | 3862      | 4434 |
| 3.Rarely or never             |          | 1560      | 1719      | 2462 |
| Value-----                    | S3RESTED | S4RESTED  | S5RESTED  |      |
| .d:DK                         |          | 3         | 4         | 3    |
| .m:Missing                    |          | 726       | 1         |      |
| .p:Proxy interview, not asked |          |           | 470       | 563  |

|                    |  |      |      |      |
|--------------------|--|------|------|------|
| .r:Refuse          |  | 2    |      |      |
| .u:Unmar           |  | 4782 | 4847 | 5227 |
| .v:SP NR           |  | 349  | 280  | 501  |
| 1.Most of the time |  | 6084 | 5508 | 4092 |
| 2.Sometimes        |  | 2712 | 2528 | 1916 |
| 3.Rarely or never  |  | 1065 | 1141 | 1064 |

How Constructed

RwFALLSLP, RwWAKENT, RwWAKEUP, and RwRESTED indicate the frequency with which the respondent experiences sleep issues. RwFALLSLP indicates how often the respondent has trouble falling asleep. RwWAKENT indicates how often the respondent wakes up during the night. RwWAKEUP indicates how often the respondent wakes up too early and is unable to go back to sleep. RwRESTED indicates how often the respondent feels rested when they wake up. These variables are coded as 1.Most of the time, 2.Sometimes, 3.Rarely or never. RwRESTED is available starting in Wave 3, while RwFALLSLP, RwWAKENT, and RwWAKEUP are available starting in Wave 4. RwFALLSLP, RwWAKENT, RwWAKEUP, and RwRESTED are set to the special missing value .p if the current interview was completed by proxy. Don't know, refused, or other missing responses of these variables are assigned special missing codes .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

SwFALLSLP, SwWAKENT, SwWAKEUP, and SwRESTED variables are taken from the Wave 'w' spouse's self-reported RwFALLSLP, RwWAKENT, RwWAKEUP, and RwRESTED variables. In addition to the special missing codes used in RwFALLSLP, RwWAKENT, RwWAKEUP, and RwRESTED; SwFALLSLP, SwWAKENT, SwWAKEUP, and SwRESTED employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

Cross Wave Differences in MHAS

Respondents are asked about feeling rested when they wake up starting in Wave 3. Respondents are asked about trouble falling asleep, waking up during the night, and waking up too early starting in Wave 4.

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 3: |   |
| C74_12  | Respondent's frequency of feeling well rested in the mo |
| Wave 4: |   |
| C74A_15 | Respondent's frequency having trouble falling asleep    |
| C74B_15 | Respondent's frequency having trouble with waking up du |
| C74C_15 | Respondent's frequency having trouble with waking up to |
| C74D_15 | Respondent's frequency feeling really rested when he/sh |
| Wave 5: |   |
| C74A_18 | R's frequency having trouble falling asleep             |
| C74B_18 | R's frequency having trouble with waking up during the  |
| C74C_18 | R's frequency having trouble with waking up early, unab |
| C74D_18 | R's frequency feeling really rested when he/she wakes u |

|             |
|-------------|
| <b>Pain</b> |
|-------------|

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1PAINFR | r1painfr: w1 R Frequent problems with pain           | Categ |
| 2    | R2PAINFR | r2painfr: w2 R Frequent problems with pain           | Categ |
| 3    | R3PAINFR | r3painfr: w3 R Frequent problems with pain           | Categ |
| 4    | R4PAINFR | r4painfr: w4 R Frequent problems with pain           | Categ |
| 5    | R5PAINFR | r5painfr: w5 R Frequent problems with pain           | Categ |
| 1    | S1PAINFR | s1painfr: w1 S Frequent problems with pain           | Categ |
| 2    | S2PAINFR | s2painfr: w2 S Frequent problems with pain           | Categ |
| 3    | S3PAINFR | s3painfr: w3 S Frequent problems with pain           | Categ |
| 4    | S4PAINFR | s4painfr: w4 S Frequent problems with pain           | Categ |
| 5    | S5PAINFR | s5painfr: w5 S Frequent problems with pain           | Categ |
| 1    | R1PAINLV | r1painlv: w1 R Usual level of pain                   | Categ |
| 2    | R2PAINLV | r2painlv: w2 R Usual level of pain                   | Categ |
| 3    | R3PAINLV | r3painlv: w3 R Usual level of pain                   | Categ |
| 4    | R4PAINLV | r4painlv: w4 R Usual level of pain                   | Categ |
| 5    | R5PAINLV | r5painlv: w5 R Usual level of pain                   | Categ |
| 1    | S1PAINLV | s1painlv: w1 S Usual level of pain                   | Categ |
| 2    | S2PAINLV | s2painlv: w2 S Usual level of pain                   | Categ |
| 3    | S3PAINLV | s3painlv: w3 S Usual level of pain                   | Categ |
| 4    | S4PAINLV | s4painlv: w4 S Usual level of pain                   | Categ |
| 5    | S5PAINLV | s5painlv: w5 S Usual level of pain                   | Categ |
| 1    | R1PAINA  | r1paina: w1 R Pain interferes with normal activities | Categ |
| 2    | R2PAINA  | r2paina: w2 R Pain interferes with normal activities | Categ |
| 3    | R3PAINA  | r3paina: w3 R Pain interferes with normal activities | Categ |
| 4    | R4PAINA  | r4paina: w4 R Pain interferes with normal activities | Categ |
| 5    | R5PAINA  | r5paina: w5 R Pain interferes with normal activities | Categ |
| 1    | S1PAINA  | s1paina: w1 S Pain interferes with normal activities | Categ |
| 2    | S2PAINA  | s2paina: w2 S Pain interferes with normal activities | Categ |
| 3    | S3PAINA  | s3paina: w3 S Pain interferes with normal activities | Categ |
| 4    | S4PAINA  | s4paina: w4 S Pain interferes with normal activities | Categ |
| 5    | S5PAINA  | s5paina: w5 S Pain interferes with normal activities | Categ |

## Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1PAINFR | 14136 | 0.41 | 0.49    | 0.00    | 1.00    |
| R2PAINFR | 12523 | 0.39 | 0.49    | 0.00    | 1.00    |
| R3PAINFR | 14443 | 0.38 | 0.49    | 0.00    | 1.00    |
| R4PAINFR | 13846 | 0.38 | 0.49    | 0.00    | 1.00    |
| R5PAINFR | 15779 | 0.39 | 0.49    | 0.00    | 1.00    |
| S1PAINFR | 9973  | 0.40 | 0.49    | 0.00    | 1.00    |
| S2PAINFR | 8740  | 0.38 | 0.49    | 0.00    | 1.00    |
| S3PAINFR | 9861  | 0.37 | 0.48    | 0.00    | 1.00    |
| S4PAINFR | 9180  | 0.38 | 0.48    | 0.00    | 1.00    |
| S5PAINFR | 7072  | 0.39 | 0.49    | 0.00    | 1.00    |
| R1PAINLV | 14124 | 0.80 | 1.07    | 0.00    | 3.00    |
| R2PAINLV | 12522 | 0.77 | 1.07    | 0.00    | 3.00    |
| R3PAINLV | 14441 | 0.73 | 1.04    | 0.00    | 3.00    |
| R4PAINLV | 13846 | 0.74 | 1.04    | 0.00    | 3.00    |
| R5PAINLV | 15779 | 0.75 | 1.04    | 0.00    | 3.00    |



|          |      |      |      |      |      |
|----------|------|------|------|------|------|
| S1PAINLV | 9964 | 0.78 | 1.07 | 0.00 | 3.00 |
| S2PAINLV | 8739 | 0.74 | 1.06 | 0.00 | 3.00 |
| S3PAINLV | 9859 | 0.70 | 1.02 | 0.00 | 3.00 |
| S4PAINLV | 9180 | 0.71 | 1.02 | 0.00 | 3.00 |
| S5PAINLV | 7072 | 0.74 | 1.03 | 0.00 | 3.00 |
| R1PAINA  | 5819 | 0.47 | 0.50 | 0.00 | 1.00 |
| R2PAINA  | 4926 | 0.50 | 0.50 | 0.00 | 1.00 |
| R3PAINA  | 5504 | 0.48 | 0.50 | 0.00 | 1.00 |
| R4PAINA  | 5313 | 0.48 | 0.50 | 0.00 | 1.00 |
| R5PAINA  | 6217 | 0.47 | 0.50 | 0.00 | 1.00 |
| S1PAINA  | 3994 | 0.47 | 0.50 | 0.00 | 1.00 |
| S2PAINA  | 3331 | 0.49 | 0.50 | 0.00 | 1.00 |
| S3PAINA  | 3675 | 0.46 | 0.50 | 0.00 | 1.00 |
| S4PAINA  | 3445 | 0.47 | 0.50 | 0.00 | 1.00 |
| S5PAINA  | 2779 | 0.46 | 0.50 | 0.00 | 1.00 |

Categorical Variable Codes

|                               |          |          |          |          |          |
|-------------------------------|----------|----------|----------|----------|----------|
| Value-----                    | R1PAINFR | R2PAINFR | R3PAINFR | R4PAINFR | R5PAINFR |
| .d:DK                         | 7        | 3        | 1        | 1        | 1        |
| .m:Missing                    | 4        |          |          | 2        |          |
| .p:Proxy interview, not asked | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     | 7        |          | 4        | 1        | 6        |
| 0.no                          | 8298     | 7594     | 8935     | 8532     | 9561     |
| 1.yes                         | 5838     | 4929     | 5508     | 5314     | 6218     |
| Value-----                    | S1PAINFR | S2PAINFR | S3PAINFR | S4PAINFR | S5PAINFR |
| .d:DK                         | 6        | 3        | 1        | 1        |          |
| .m:Missing                    | 3        |          |          |          |          |
| .p:Proxy interview, not asked | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     | 6        |          | 4        | 1        | 3        |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| 0.no                          | 5966     | 5406     | 6182     | 5735     | 4293     |
| 1.yes                         | 4007     | 3334     | 3679     | 3445     | 2779     |
| Value-----                    | R1PAINLV | R2PAINLV | R3PAINLV | R4PAINLV | R5PAINLV |
| .d:DK                         | 13       | 3        | 2        | 1        | 1        |
| .m:Missing                    | 4        |          |          | 2        |          |
| .p:Proxy interview, not asked | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     | 13       | 1        | 5        | 1        | 6        |
| 0.No pain                     | 8298     | 7594     | 8935     | 8532     | 9561     |
| 1.Mild                        | 1910     | 1656     | 1837     | 1731     | 2101     |
| 2.Moderate                    | 2371     | 1859     | 2340     | 2297     | 2676     |
| 3.Severe                      | 1545     | 1413     | 1329     | 1286     | 1441     |
| Value-----                    | S1PAINLV | S2PAINLV | S3PAINLV | S4PAINLV | S5PAINLV |
| .d:DK                         | 11       | 3        | 2        | 1        |          |
| .m:Missing                    | 3        |          |          |          |          |
| .p:Proxy interview, not asked | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     | 10       | 1        | 5        | 1        | 3        |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| 0.No pain                     | 5966     | 5406     | 6182     | 5735     | 4293     |
| 1.Mild                        | 1320     | 1126     | 1281     | 1164     | 936      |
| 2.Moderate                    | 1611     | 1277     | 1537     | 1496     | 1217     |
| 3.Severe                      | 1067     | 930      | 859      | 785      | 626      |
| Value-----                    | R1PAINA  | R2PAINA  | R3PAINA  | R4PAINA  | R5PAINA  |
| .d:DK                         | 16       | 5        | 3        | 1        | 1        |
| .m:Missing                    | 4        |          |          | 2        |          |
| .p:Proxy interview, not asked | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     | 17       | 1        | 6        | 2        | 7        |
| .x:does not have condition    | 8298     | 7594     | 8935     | 8532     | 9561     |
| 0.no                          | 3071     | 2474     | 2875     | 2765     | 3322     |
| 1.yes                         | 2748     | 2452     | 2629     | 2548     | 2895     |

| Value-----                    | S1PAINA | S2PAINA | S3PAINA | S4PAINA | S5PAINA |
|-------------------------------|---------|---------|---------|---------|---------|
| .d:DK                         | 12      | 5       | 3       | 1       |         |
| .m:Missing                    | 3       |         |         |         |         |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 13      | 1       | 6       | 1       | 3       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| .x:does not have condition    | 5966    | 5406    | 6182    | 5735    | 4293    |
| 0.no                          | 2119    | 1703    | 1977    | 1833    | 1495    |
| 1.yes                         | 1875    | 1628    | 1698    | 1612    | 1284    |

## How Constructed

RwPAINFR indicates whether the respondent suffers from pain. RwPAINFR is coded as 0.No, and 1.Yes. RwPAINLV indicates the respondent's pain level the majority of the time. RwPAINLV is coded as 0.No pain, 1.Mild, 2.Moderate, 3.Severe. If the respondent does not suffer from pain, then RwPAINLV is assigned a value of 0. RwPAINA indicates whether the respondent's pain interferes with usual activities such as household chores or their job. RwPAINA is coded as 0.No and 1.Yes, and is assigned special missing .x if the respondent does not experience pain. RwPAINFR, RwPAINLV, and RwPAINA are set to the special missing value .p if the current interview was completed by proxy. Don't know, refused, or other missing responses of these variables are assigned special missing codes .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

SwPAINFR, SwPAINLV, and SwPAINA variables are taken from the Wave 'w' spouse's self-reported RwPAINFR, RwPAINLV, and RwPAINA variables. In addition to the special missing codes used in RwPAINFR, RwPAINLV, and RwPAINA; SwPAINFR, SwPAINLV, and SwPAINA employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

Please note that the HRS asks whether the respondent is "often troubled with pain", while the MHAS asks whether the respondent "suffers from pain". Despite these differences in question wording, these variables have been constructed to be as comparable as possible.

## MHAS Variables Used

|         |  |
|---------|--|
| Wave 1: |  |
| C48     | pain   |
| C49     | pain type                                      |
| C50     | pain limits activities                         |
| Wave 2: |  |
| C45     | often suffer from physical pain                |
| C46     | suffer pain a majority of the time             |
| C47     | condition limits your normal activities        |
| Wave 3: |  |
| C45_12  | Respondent suffers from pain                   |
| C46_12  | Report respondent's pain level                 |
| C47_12  | Pain limits respondent's daily activities      |
| Wave 4: |  |
| C45_15  | Does respondent suffer from pain               |
| C46_15  | Respondent's pain level                        |
| C47_15  | Does pain limits respondent's daily activities |
| Wave 5: |  |
| C45_18  | Does R suffer from pain                        |
| C46_18  | R's pain level                                 |
| C47_18  | Does pain limits R's daily activities          |

Menopause

| Wave | Variable    | Label  | Type  |
|------|-------------|--|-------|
| 4    | R4HYSTERE   | r4hystere: w4 R Ever had hysterectomy            | Categ |
| 5    | R5HYSTERE   | r5hystere: w5 R Ever had hysterectomy            | Categ |
| 4    | S4HYSTERE   | s4hystere: w4 S Ever had hysterectomy            | Categ |
| 5    | S5HYSTERE   | s5hystere: w5 S Ever had hysterectomy            | Categ |
| 4    | R4LSTMNSPD  | r4lstmnspd: w4 R Age last menstrual period       | Cont  |
| 5    | R5LSTMNSPD  | r5lstmnspd: w5 R Age last menstrual period       | Cont  |
| 4    | S4LSTMNSPD  | s4lstmnspd: w4 S Age last menstrual period       | Cont  |
| 5    | S5LSTMNSPD  | s5lstmnspd: w5 S Age last menstrual period       | Cont  |
| 4    | R4FLSTMNSPD | r4flstmnspd: w4 R Flag age last menstrual period | Categ |
| 5    | R5FLSTMNSPD | r5flstmnspd: w5 R Flag age last menstrual period | Categ |
| 4    | S4FLSTMNSPD | s4flstmnspd: w4 S Flag age last menstrual period | Categ |
| 5    | S5FLSTMNSPD | s5flstmnspd: w5 S Flag age last menstrual period | Categ |

Descriptive Statistics

| Variable    | N    | Mean  | Std Dev | Minimum | Maximum |
|-------------|------|-------|---------|---------|---------|
| R4HYSTERE   | 8106 | 0.21  | 0.40    | 0.00    | 1.00    |
| R5HYSTERE   | 9189 | 0.19  | 0.39    | 0.00    | 1.00    |
| S4HYSTERE   | 4623 | 0.21  | 0.41    | 0.00    | 1.00    |
| S5HYSTERE   | 3590 | 0.21  | 0.41    | 0.00    | 1.00    |
| R4LSTMNSPD  | 7434 | 46.88 | 6.69    | 4.00    | 99.00   |
| R5LSTMNSPD  | 8620 | 46.86 | 6.89    | 4.00    | 99.00   |
| S4LSTMNSPD  | 4120 | 46.85 | 6.64    | 4.00    | 99.00   |
| S5LSTMNSPD  | 3545 | 46.93 | 6.95    | 4.00    | 99.00   |
| R4FLSTMNSPD | 7434 | 0.01  | 0.12    | 0.00    | 1.00    |
| R5FLSTMNSPD | 8620 | 0.03  | 0.17    | 0.00    | 1.00    |
| S4FLSTMNSPD | 4120 | 0.01  | 0.09    | 0.00    | 1.00    |
| S5FLSTMNSPD | 3545 | 0.02  | 0.15    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----                    | R4HYSTERE | R5HYSTERE |
|-------------------------------|-----------|-----------|
| .d:DK                         | 11        | 24        |
| .g:not asked-gender           | 11790     | 11790     |
| .m:Missing                    | 2         |           |
| .p:Proxy interview, not asked | 515       | 686       |
| .r:Refuse                     | 3         | 17        |
| 0.no                          | 6439      | 7422      |
| 1.yes                         | 1667      | 1767      |
| Value-----                    | S4HYSTERE | S5HYSTERE |
| .d:DK                         | 8         | 13        |
| .g:not asked-gender           | 4944      | 4356      |
| .p:Proxy interview, not asked | 193       | 223       |
| .r:Refuse                     | 2         | 8         |
| .u:Unmar                      | 4845      | 5226      |
| .v:SP NR                      | 164       | 379       |
| 0.no                          | 3651      | 2831      |

|                               |  |             |             |
|-------------------------------|--|-------------|-------------|
| 1.yes                         |  | 972         | 759         |
| Value-----                    |  | R4FLSTMNSPD | R5FLSTMNSPD |
| .d:DK                         |  | 40          | 17          |
| .g:not asked-gender           |  | 11790       | 11790       |
| .m:Missing                    |  | 2           |             |
| .o:older than 55              |  | 21          | 6           |
| .p:Proxy interview, not asked |  | 515         | 288         |
| .r:Refuse                     |  | 13          | 14          |
| .x:still menstruating         |  | 527         | 925         |
| .y:younger than 45            |  | 85          | 46          |
| 0.Reported value              |  | 7329        | 8378        |
| 1.Estimated value             |  | 105         | 242         |
| Value-----                    |  | S4FLSTMNSPD | S5FLSTMNSPD |
| .d:DK                         |  | 15          | 2           |
| .g:not asked-gender           |  | 4944        | 4356        |
| .o:older than 55              |  | 6           | 1           |
| .p:Proxy interview, not asked |  | 193         | 80          |
| .r:Refuse                     |  | 8           | 2           |
| .u:Unmar                      |  | 4845        | 5226        |
| .v:SP NR                      |  | 164         | 379         |
| .x:still menstruating         |  | 451         | 194         |
| .y:younger than 45            |  | 33          | 10          |
| 0.Reported value              |  | 4083        | 3463        |
| 1.Estimated value             |  | 37          | 82          |

## How Constructed

RwHYSTERE indicates whether the respondent has ever had a hysterectomy. RwHYSTERE is coded as 0.No, and 1.Yes. RwHYSTERE is available starting in Wave 4. In RwHYSTERE, respondents who are men are assigned special missing .g. Proxy respondents are not asked about a hysterectomy and are assigned special missing .p. Don't know, refused, or other missing responses of this variable is assigned special missing codes .d, .r, and .m, respectively. RwHYSTERE is set to plain missing (.) for respondents who did not participate in the current wave.

RwLSTMNSPD indicates the respondent's age at their last menstrual period. Respondents who are women are asked how old they were when they stopped menstruating, and if they answer don't know or refuse, are then asked if they were less than 45 years old, about 50 years old, or more than 55 years old. RwLSTMNSPD takes the value reported by the respondent if available, and is assigned a value of 50, if they did not answer the first question and respond to the second question that they were about 50 years old. RwFLSTMNSPD is a flag variable indicating whether the value of RwLSTMNSPD was reported, in which case RwFLSTMNSPD is assigned a value of 0, or if RwLSTMNSPD was set to 50 because the respondent reported being about 50 years old in the second question, in which case RwFLSTMNSPD is assigned a value of 1. If the respondent reported that they were less than 45 years old, then RwLSTMNSPD and RwFLSTMNSPD are assigned special missing .y. If the respondent reported that they were older than 55 years old, then RwLSTMNSPD and RwFLSTMNSPD are assigned special missing .o. If the respondent voluntarily reports she still menstruates, RwLSTMNSPD and RwFLSTMNSPD are set to special missing value .x. RwLSTMNSPD and RwFLSTMNSPD are available starting in Wave 4. Values of RwLSTMNSPD and RwFLSTMNSPD are carried forward in future waves. In RwLSTMNSPD and RwFLSTMNSPD, respondents who are men are assigned special missing .g. Proxy respondents are not asked about the age at their last menstrual period and are assigned special missing .p. Don't know, refused, or other missing responses of these variables are assigned special missing codes .d, .r, and .m, respectively. RwLSTMNSPD and RwFLSTMNSPD are set to plain missing (.) for respondents who did not participate in the current wave.

SwHYSTERE, SwLSTMNSPD, and SwFLSTMNSPD are variables are taken from the Wave 'w' spouse's RwHYSTERE, RwLSTMNSPD, and RwFLSTMNSPD variables. In addition to the special missing codes used in RwHYSTERE, RwLSTMNSPD, and RwFLSTMNSPD; SwHYSTERE, SwLSTMNSPD, and SwFLSTMNSPD employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents who are women are asked whether they have had a hysterectomy and their age when they stopped menstruating starting in Wave 4.

Differences with the RAND HRS/Harmonized HRS

The HRS asks whether the respondent had a hysterectomy and the age of their last period starting in Wave 9, while the MHAS asks the same questions starting in Wave 4. Additionally, the HRS asks what stage of menopause the respondent thinks they are in, recorded in RwmENOPE in the Harmonized HRS.

MHAS Variables Used

|          |   |
|----------|---|
| Wave 4:  |   |
| C48I_15  | In the last 2 years: Respondent had a mammogram/x-ray |
| C48K1_15 | Was respondent...                                     |
| C48K_15  | Respondent's age when she stopped menstruating        |
| Wave 5:  |   |
| C48I_18  | In the last 2 years: R had a mammogram/x-ray          |
| C48K1_18 | Was R...  |
| C48K_18  | R's age when she stopped menstruating                 |

BMI

| Wave | Variable | Label                              | Type |
|------|----------|------------------------------------|------|
| 1    | R1BMI    | r1bmi: w1 R Body Mass Index=kg/m2  | Cont |
| 2    | R2BMI    | r2bmi: w2 R Body Mass Index=kg/m2  | Cont |
| 3    | R3BMI    | r3bmi: w3 R Body Mass Index=kg/m2  | Cont |
| 4    | R4BMI    | r4bmi: w4 R Body Mass Index=kg/m2  | Cont |
| 5    | R5BMI    | r5bmi: w5 R Body Mass Index=kg/m2  | Cont |
| 1    | S1BMI    | s1bmi: w1 S Body Mass Index=kg/m2  | Cont |
| 2    | S2BMI    | s2bmi: w2 S Body Mass Index=kg/m2  | Cont |
| 3    | S3BMI    | s3bmi: w3 S Body Mass Index=kg/m2  | Cont |
| 4    | S4BMI    | s4bmi: w4 S Body Mass Index=kg/m2  | Cont |
| 5    | S5BMI    | s5bmi: w5 S Body Mass Index=kg/m2  | Cont |
| 1    | R1WEIGHT | r1weight: w1 R Weight in kilograms | Cont |
| 2    | R2WEIGHT | r2weight: w2 R Weight in kilograms | Cont |
| 3    | R3WEIGHT | r3weight: w3 R Weight in kilograms | Cont |
| 4    | R4WEIGHT | r4weight: w4 R Weight in kilograms | Cont |
| 5    | R5WEIGHT | r5weight: w5 R Weight in kilograms | Cont |
| 1    | S1WEIGHT | s1weight: w1 S Weight in kilograms | Cont |
| 2    | S2WEIGHT | s2weight: w2 S Weight in kilograms | Cont |
| 3    | S3WEIGHT | s3weight: w3 S Weight in kilograms | Cont |
| 4    | S4WEIGHT | s4weight: w4 S Weight in kilograms | Cont |
| 5    | S5WEIGHT | s5weight: w5 S Weight in kilograms | Cont |
| 1    | R1HEIGHT | r1height: w1 R Height in meters    | Cont |
| 2    | R2HEIGHT | r2height: w2 R Height in meters    | Cont |
| 3    | R3HEIGHT | r3height: w3 R Height in meters    | Cont |
| 4    | R4HEIGHT | r4height: w4 R Height in meters    | Cont |
| 5    | R5HEIGHT | r5height: w5 R Height in meters    | Cont |
| 1    | S1HEIGHT | s1height: w1 S Height in meters    | Cont |
| 2    | S2HEIGHT | s2height: w2 S Height in meters    | Cont |
| 3    | S3HEIGHT | s3height: w3 S Height in meters    | Cont |
| 4    | S4HEIGHT | s4height: w4 S Height in meters    | Cont |
| 5    | S5HEIGHT | s5height: w5 S Height in meters    | Cont |

Descriptive Statistics

| Variable | N     | Mean  | Std Dev | Minimum | Maximum |
|----------|-------|-------|---------|---------|---------|
| R1BMI    | 11361 | 27.27 | 5.15    | 10.49   | 99.00   |
| R2BMI    | 9431  | 27.51 | 5.42    | 10.12   | 109.28  |
| R3BMI    | 13831 | 27.49 | 5.01    | 12.49   | 70.25   |
| R4BMI    | 12813 | 27.57 | 5.10    | 11.20   | 73.87   |
| R5BMI    | 15215 | 27.79 | 5.18    | 8.33    | 75.02   |
| S1BMI    | 8174  | 27.45 | 5.14    | 10.49   | 99.00   |
| S2BMI    | 6813  | 27.67 | 5.36    | 10.12   | 109.28  |
| S3BMI    | 9505  | 27.71 | 4.89    | 12.49   | 70.25   |
| S4BMI    | 8569  | 27.81 | 4.95    | 11.20   | 73.87   |
| S5BMI    | 6822  | 27.72 | 5.04    | 8.33    | 71.07   |
| R1WEIGHT | 13566 | 69.84 | 14.07   | 30.00   | 180.00  |
| R2WEIGHT | 12134 | 69.72 | 14.16   | 20.00   | 176.00  |
| R3WEIGHT | 14998 | 69.90 | 14.01   | 30.00   | 190.00  |
| R4WEIGHT | 14078 | 69.69 | 14.25   | 30.00   | 187.00  |
| R5WEIGHT | 16361 | 70.60 | 14.30   | 30.00   | 175.00  |

|          |       |       |       |       |        |
|----------|-------|-------|-------|-------|--------|
| S1WEIGHT | 9646  | 71.28 | 13.96 | 30.00 | 180.00 |
| S2WEIGHT | 8608  | 71.08 | 13.94 | 20.00 | 176.00 |
| S3WEIGHT | 10207 | 71.47 | 13.79 | 30.00 | 190.00 |
| S4WEIGHT | 9321  | 71.34 | 13.93 | 30.00 | 187.00 |
| S5WEIGHT | 7341  | 70.89 | 13.72 | 30.00 | 156.00 |
|          |       |       |       |       |        |
| R1HEIGHT | 11736 | 1.61  | 0.10  | 1.00  | 2.00   |
| R2HEIGHT | 9712  | 1.61  | 0.10  | 1.00  | 2.00   |
| R3HEIGHT | 14084 | 1.60  | 0.10  | 1.00  | 2.00   |
| R4HEIGHT | 13064 | 1.60  | 0.10  | 1.00  | 1.99   |
| R5HEIGHT | 15561 | 1.60  | 0.10  | 1.00  | 2.00   |
|          |       |       |       |       |        |
| S1HEIGHT | 8411  | 1.62  | 0.10  | 1.00  | 2.00   |
| S2HEIGHT | 7004  | 1.62  | 0.10  | 1.00  | 2.00   |
| S3HEIGHT | 9639  | 1.61  | 0.10  | 1.07  | 2.00   |
| S4HEIGHT | 8703  | 1.61  | 0.10  | 1.00  | 1.99   |
| S5HEIGHT | 6966  | 1.60  | 0.10  | 1.00  | 2.00   |

## How Constructed

RwHEIGHT, RwWEIGHT, and RwBMI are the respondent's self-reported height, weight, and body mass index, respectively.

Height is given in meters, weight in kilograms, and BMI is weight divided by the square of height. A special missing code .i is used for RwHEIGHT when the respondent reports a height less than 90cm or if an invalid code is selected (either 9, 915, 949, 990, or 992). Don't know, refused, or otherwise missing responses are assigned special missing values .d, .r, .m, respectively. RwHEIGHT, RwWEIGHT, and RwBMI are assigned plain missing (.) if the respondent did not participate in the current wave.

SwHEIGHT, SwWEIGHT, and SwBMI are the measures of the respondent's spouse and are taken directly from the spouse's RwHEIGHT, RwWEIGHT, and RwBMI, respectively. In addition to the special missing values employed by RwHEIGHT, RwWEIGHT, and RwBMI, SwHEIGHT, SwWEIGHT, and SwBMI employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

No differences known.

## MHAS Variables Used

|          |  |
|----------|--|
| Wave 1:  |  |
| C71      | weight   |
| C72      | height   |
| Wave 2:  |  |
| C66      | weight   |
| C67      | height without shoes                           |
| Wave 3:  |  |
| C66_12   | Respondent's current weight in kilos           |
| C67_1_12 | Respondent's height without shoes_Meters       |
| C67_2_12 | Respondent's height without shoes_Centimeters  |
| Wave 4:  |  |
| C66_15   | Respondent's current weight in kilos           |
| C67_1_15 | Respondent's height without shoes: Meters      |
| C67_2_15 | Respondent's height without shoes: Centimeters |
| Wave 5:  |  |
| C66_18   | R's current weight in kilos                    |
| C67_1_18 | R's height without shoes: Meters               |
| C67_2_18 | R's height without shoes: Centimeters          |

Health Behaviors: Physical Activity or Exercise

| Wave | Variable | Label                                      | Type  |
|------|----------|--|-------|
| 1    | R1VIGACT | r1vigact: w1 R Wtr vigorous phys act 3+/wk | Categ |
| 2    | R2VIGACT | r2vigact: w2 R Wtr vigorous phys act 3+/wk | Categ |
| 3    | R3VIGACT | r3vigact: w3 R Wtr vigorous phys act 3+/wk | Categ |
| 4    | R4VIGACT | r4vigact: w4 R Wtr vigorous phys act 3+/wk | Categ |
| 5    | R5VIGACT | r5vigact: w5 R Wtr vigorous phys act 3+/wk | Categ |
| 1    | S1VIGACT | s1vigact: w1 S Wtr vigorous phys act 3+/wk | Categ |
| 2    | S2VIGACT | s2vigact: w2 S Wtr vigorous phys act 3+/wk | Categ |
| 3    | S3VIGACT | s3vigact: w3 S Wtr vigorous phys act 3+/wk | Categ |
| 4    | S4VIGACT | s4vigact: w4 S Wtr vigorous phys act 3+/wk | Categ |
| 5    | S5VIGACT | s5vigact: w5 S Wtr vigorous phys act 3+/wk | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1VIGACT | 14036 | 0.34 | 0.47    | 0.00    | 1.00    |
| R2VIGACT | 12520 | 0.36 | 0.48    | 0.00    | 1.00    |
| R3VIGACT | 14442 | 0.39 | 0.49    | 0.00    | 1.00    |
| R4VIGACT | 13842 | 0.38 | 0.49    | 0.00    | 1.00    |
| R5VIGACT | 15772 | 0.35 | 0.48    | 0.00    | 1.00    |
| S1VIGACT | 9889  | 0.36 | 0.48    | 0.00    | 1.00    |
| S2VIGACT | 8737  | 0.38 | 0.49    | 0.00    | 1.00    |
| S3VIGACT | 9862  | 0.42 | 0.49    | 0.00    | 1.00    |
| S4VIGACT | 9180  | 0.41 | 0.49    | 0.00    | 1.00    |
| S5VIGACT | 7069  | 0.33 | 0.47    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----                    | R1VIGACT | R2VIGACT | R3VIGACT | R4VIGACT | R5VIGACT |
|-------------------------------|----------|----------|----------|----------|----------|
| .d:DK                         | 42       | 4        | 3        | 1        | 6        |
| .m:Missing                    | 4        |          |          | 6        |          |
| .p:Proxy interview, not asked | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     | 72       | 2        | 3        | 1        | 8        |
| 0.No                          | 9268     | 7989     | 8767     | 8526     | 10268    |
| 1.Yes                         | 4768     | 4531     | 5675     | 5316     | 5504     |

| Value-----                    | S1VIGACT | S2VIGACT | S3VIGACT | S4VIGACT | S5VIGACT |
|-------------------------------|----------|----------|----------|----------|----------|
| .d:DK                         | 39       | 4        | 1        | 1        | 3        |
| .m:Missing                    | 3        |          |          | 1        |          |
| .p:Proxy interview, not asked | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     | 57       | 2        | 3        |          | 3        |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| 0.No                          | 6281     | 5380     | 5724     | 5397     | 4711     |
| 1.Yes                         | 3608     | 3357     | 4138     | 3783     | 2358     |

How Constructed

RwVIGACT indicates whether the respondent has participated in hard physical work on average during the last two years, three or more times a week; including various activities such as sports, heavy household chores, or other physical work. A code of 1 indicates that the respondent did participate in vigorous activity three or more times a week. A code of 0 indicates that the respondent did not participate in vigorous activity three or more times a week. When respondents "don't know", refuse to answer, or answers are missing, RwVIGACT is assigned special missing values .d, .r, .m, respectively. Variables are set to special missing value .p for proxy interviews and to plain missing (.) for respondents who did not respond to the current wave.



SwVIGACT indicates whether the respondent's spouse has participated in hard physical work on average during the last two years three or more times a week and is taken directly from the spouse's RwVIGACT. In addition to the special missing codes employed by RwVIGACT, SwVIGACT employs the special missing value .u, if the respondent is not designated as coupled in the current wave and assumed to be single a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

The MHAS only asks one question regarding vigorous physical activity. In the HRS, from Wave 3 (1996) to Wave 6 (2002), the HRS only asks about vigorous exercise, but does not collect information about moderate or light physical activities. Starting from Wave 7 (2004), the HRS questionnaire features a series of three questions, one concerning vigorous, one concerning moderate, and one concerning mild/light physical activity.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| C53     | done hard physical work                                   |
| Wave 2: |   |
| C50     | does physical work regularly                              |
| Wave 3: |   |
| C50B_12 | Last 2 years:Respondent ... exercise or hard physical wor |
| Wave 4: |   |
| C50B_15 | In the last 2 years: Respondent exercised or did hard p   |
| Wave 5: |   |
| C50B_18 | Last 2 years: R exercised or did hard physical work 3+    |

|                                   |
|-----------------------------------|
| <b>Health Behaviors: Drinking</b> |
|-----------------------------------|

| Wave | Variable | Label   | Type  |
|------|----------|---|-------|
| 1    | R1DRINK  | r1drink: w1 R Ever drinks any alcohol           | Categ |
| 2    | R2DRINK  | r2drink: w2 R Ever drinks any alcohol           | Categ |
| 3    | R3DRINK  | r3drink: w3 R Ever drinks any alcohol           | Categ |
| 4    | R4DRINK  | r4drink: w4 R Ever drinks any alcohol           | Categ |
| 5    | R5DRINK  | r5drink: w5 R Ever drinks any alcohol           | Categ |
| 1    | S1DRINK  | s1drink: w1 S Ever drinks any alcohol           | Categ |
| 2    | S2DRINK  | s2drink: w2 S Ever drinks any alcohol           | Categ |
| 3    | S3DRINK  | s3drink: w3 S Ever drinks any alcohol           | Categ |
| 4    | S4DRINK  | s4drink: w4 S Ever drinks any alcohol           | Categ |
| 5    | S5DRINK  | s5drink: w5 S Ever drinks any alcohol           | Categ |
| 1    | R1DRINKD | r1drinkd: w1 R Number of days/week drinks       | Cont  |
| 2    | R2DRINKD | r2drinkd: w2 R Number of days/week drinks       | Cont  |
| 3    | R3DRINKD | r3drinkd: w3 R Number of days/week drinks       | Cont  |
| 4    | R4DRINKD | r4drinkd: w4 R Number of days/week drinks       | Cont  |
| 5    | R5DRINKD | r5drinkd: w5 R Number of days/week drinks       | Cont  |
| 1    | S1DRINKD | s1drinkd: w1 S Number of days/week drinks       | Cont  |
| 2    | S2DRINKD | s2drinkd: w2 S Number of days/week drinks       | Cont  |
| 3    | S3DRINKD | s3drinkd: w3 S Number of days/week drinks       | Cont  |
| 4    | S4DRINKD | s4drinkd: w4 S Number of days/week drinks       | Cont  |
| 5    | S5DRINKD | s5drinkd: w5 S Number of days/week drinks       | Cont  |
| 1    | R1DRINKN | r1drinkn: w1 R Number of drinks/day when drinks | Cont  |
| 2    | R2DRINKN | r2drinkn: w2 R Number of drinks/day when drinks | Cont  |
| 3    | R3DRINKN | r3drinkn: w3 R Number of drinks/day when drinks | Cont  |
| 4    | R4DRINKN | r4drinkn: w4 R Number of drinks/day when drinks | Cont  |
| 5    | R5DRINKN | r5drinkn: w5 R Number of drinks/day when drinks | Cont  |
| 1    | S1DRINKN | s1drinkn: w1 S Number of drinks/day when drinks | Cont  |
| 2    | S2DRINKN | s2drinkn: w2 S Number of drinks/day when drinks | Cont  |
| 3    | S3DRINKN | s3drinkn: w3 S Number of drinks/day when drinks | Cont  |
| 4    | S4DRINKN | s4drinkn: w4 S Number of drinks/day when drinks | Cont  |
| 5    | S5DRINKN | s5drinkn: w5 S Number of drinks/day when drinks | Cont  |
| 1    | R1DRINKB | r1drinkb: w1 R Ever binge drinks                | Categ |
| 2    | R2DRINKB | r2drinkb: w2 R Ever binge drinks                | Categ |
| 3    | R3DRINKB | r3drinkb: w3 R Ever binge drinks                | Categ |
| 4    | R4DRINKB | r4drinkb: w4 R Ever binge drinks                | Categ |
| 5    | R5DRINKB | r5drinkb: w5 R Ever binge drinks                | Categ |
| 1    | S1DRINKB | s1drinkb: w1 S Ever binge drinks                | Categ |
| 2    | S2DRINKB | s2drinkb: w2 S Ever binge drinks                | Categ |
| 3    | S3DRINKB | s3drinkb: w3 S Ever binge drinks                | Categ |
| 4    | S4DRINKB | s4drinkb: w4 S Ever binge drinks                | Categ |
| 5    | S5DRINKB | s5drinkb: w5 S Ever binge drinks                | Categ |
| 1    | R1BINGED | r1binged: w1 R Number of days binge drinks      | Cont  |
| 2    | R2BINGED | r2binged: w2 R Number of days binge drinks      | Cont  |
| 3    | R3BINGED | r3binged: w3 R Number of days binge drinks      | Cont  |
| 4    | R4BINGED | r4binged: w4 R Number of days binge drinks      | Cont  |
| 5    | R5BINGED | r5binged: w5 R Number of days binge drinks      | Cont  |
| 1    | S1BINGED | s1binged: w1 S Number of days binge drinks      | Cont  |
| 2    | S2BINGED | s2binged: w2 S Number of days binge drinks      | Cont  |
| 3    | S3BINGED | s3binged: w3 S Number of days binge drinks      | Cont  |
| 4    | S4BINGED | s4binged: w4 S Number of days binge drinks      | Cont  |
| 5    | S5BINGED | s5binged: w5 S Number of days binge drinks      | Cont  |

|   |            |  |       |
|---|------------|--|-------|
| 1 | R1DRINKCUT | r1drinkcut: w1 R Feels should cut down on drinking | Categ |
| 2 | R2DRINKCUT | r2drinkcut: w2 R Feels should cut down on drinking | Categ |
| 3 | R3DRINKCUT | r3drinkcut: w3 R Feels should cut down on drinking | Categ |
| 4 | R4DRINKCUT | r4drinkcut: w4 R Feels should cut down on drinking | Categ |
| 1 | S1DRINKCUT | s1drinkcut: w1 S Feels should cut down on drinking | Categ |
| 2 | S2DRINKCUT | s2drinkcut: w2 S Feels should cut down on drinking | Categ |
| 3 | S3DRINKCUT | s3drinkcut: w3 S Feels should cut down on drinking | Categ |
| 4 | S4DRINKCUT | s4drinkcut: w4 S Feels should cut down on drinking | Categ |
| 1 | R1DRINKCR  | r1drinkcr: w1 R Others criticize your drinking     | Categ |
| 2 | R2DRINKCR  | r2drinkcr: w2 R Others criticize your drinking     | Categ |
| 3 | R3DRINKCR  | r3drinkcr: w3 R Others criticize your drinking     | Categ |
| 4 | R4DRINKCR  | r4drinkcr: w4 R Others criticize your drinking     | Categ |
| 1 | S1DRINKCR  | s1drinkcr: w1 S Others criticize your drinking     | Categ |
| 2 | S2DRINKCR  | s2drinkcr: w2 S Others criticize your drinking     | Categ |
| 3 | S3DRINKCR  | s3drinkcr: w3 S Others criticize your drinking     | Categ |
| 4 | S4DRINKCR  | s4drinkcr: w4 S Others criticize your drinking     | Categ |
| 1 | R1DRINKBD  | r1drinkbd: w1 R Feels bad about drinking           | Categ |
| 2 | R2DRINKBD  | r2drinkbd: w2 R Feels bad about drinking           | Categ |
| 3 | R3DRINKBD  | r3drinkbd: w3 R Feels bad about drinking           | Categ |
| 4 | R4DRINKBD  | r4drinkbd: w4 R Feels bad about drinking           | Categ |
| 1 | S1DRINKBD  | s1drinkbd: w1 S Feels bad about drinking           | Categ |
| 2 | S2DRINKBD  | s2drinkbd: w2 S Feels bad about drinking           | Categ |
| 3 | S3DRINKBD  | s3drinkbd: w3 S Feels bad about drinking           | Categ |
| 4 | S4DRINKBD  | s4drinkbd: w4 S Feels bad about drinking           | Categ |
| 1 | R1DRINKNR  | r1drinknr: w1 R Takes drink for nerve in am        | Categ |
| 2 | R2DRINKNR  | r2drinknr: w2 R Takes drink for nerve in am        | Categ |
| 3 | R3DRINKNR  | r3drinknr: w3 R Takes drink for nerve in am        | Categ |
| 4 | R4DRINKNR  | r4drinknr: w4 R Takes drink for nerve in am        | Categ |
| 1 | S1DRINKNR  | s1drinknr: w1 S Takes drink for nerve in am        | Categ |
| 2 | S2DRINKNR  | s2drinknr: w2 S Takes drink for nerve in am        | Categ |
| 3 | S3DRINKNR  | s3drinknr: w3 S Takes drink for nerve in am        | Categ |
| 4 | S4DRINKNR  | s4drinknr: w4 S Takes drink for nerve in am        | Categ |
| 1 | R1CAGE     | r1cage: w1 R Cage summary score                    | Cont  |
| 2 | R2CAGE     | r2cage: w2 R Cage summary score                    | Cont  |
| 3 | R3CAGE     | r3cage: w3 R Cage summary score                    | Cont  |
| 4 | R4CAGE     | r4cage: w4 R Cage summary score                    | Cont  |
| 1 | S1CAGE     | s1cage: w1 S Cage summary score                    | Cont  |
| 2 | S2CAGE     | s2cage: w2 S Cage summary score                    | Cont  |
| 3 | S3CAGE     | s3cage: w3 S Cage summary score                    | Cont  |
| 4 | S4CAGE     | s4cage: w4 S Cage summary score                    | Cont  |
| 1 | R1CAGEM    | r1cagem: w1 R Cage missings                        | Cont  |
| 2 | R2CAGEM    | r2cagem: w2 R Cage missings                        | Cont  |
| 3 | R3CAGEM    | r3cagem: w3 R Cage missings                        | Cont  |
| 4 | R4CAGEM    | r4cagem: w4 R Cage missings                        | Cont  |
| 1 | S1CAGEM    | s1cagem: w1 S Cage missings                        | Cont  |
| 2 | S2CAGEM    | s2cagem: w2 S Cage missings                        | Cont  |
| 3 | S3CAGEM    | s3cagem: w3 S Cage missings                        | Cont  |
| 4 | S4CAGEM    | s4cagem: w4 S Cage missings                        | Cont  |

## Descriptive Statistics

| Variable | N | Mean | Std Dev | Minimum | Maximum |
|----------|---|------|---------|---------|---------|
|----------|---|------|---------|---------|---------|

|            |       |      |      |      |       |
|------------|-------|------|------|------|-------|
| R1DRINK    | 15175 | 0.31 | 0.46 | 0.00 | 1.00  |
| R2DRINK    | 13700 | 0.26 | 0.44 | 0.00 | 1.00  |
| R3DRINK    | 15719 | 0.23 | 0.42 | 0.00 | 1.00  |
| R4DRINK    | 14770 | 0.23 | 0.42 | 0.00 | 1.00  |
| R5DRINK    | 17105 | 0.27 | 0.45 | 0.00 | 1.00  |
| S1DRINK    | 10641 | 0.34 | 0.47 | 0.00 | 1.00  |
| S2DRINK    | 9561  | 0.28 | 0.45 | 0.00 | 1.00  |
| S3DRINK    | 10588 | 0.26 | 0.44 | 0.00 | 1.00  |
| S4DRINK    | 9650  | 0.25 | 0.44 | 0.00 | 1.00  |
| S5DRINK    | 7635  | 0.27 | 0.44 | 0.00 | 1.00  |
| R1DRINKD   | 15102 | 0.35 | 1.17 | 0.00 | 7.00  |
| R2DRINKD   | 13657 | 0.34 | 1.13 | 0.00 | 7.00  |
| R3DRINKD   | 15648 | 0.35 | 1.09 | 0.00 | 7.00  |
| R4DRINKD   | 14713 | 0.33 | 1.05 | 0.00 | 7.00  |
| R5DRINKD   | 17021 | 0.41 | 1.12 | 0.00 | 7.00  |
| S1DRINKD   | 10584 | 0.40 | 1.24 | 0.00 | 7.00  |
| S2DRINKD   | 9533  | 0.38 | 1.17 | 0.00 | 7.00  |
| S3DRINKD   | 10533 | 0.39 | 1.14 | 0.00 | 7.00  |
| S4DRINKD   | 9607  | 0.38 | 1.10 | 0.00 | 7.00  |
| S5DRINKD   | 7599  | 0.41 | 1.15 | 0.00 | 7.00  |
| R1DRINKN   | 15060 | 0.67 | 2.50 | 0.00 | 70.00 |
| R2DRINKN   | 13615 | 0.65 | 2.28 | 0.00 | 30.00 |
| R3DRINKN   | 15663 | 0.65 | 2.56 | 0.00 | 70.00 |
| R4DRINKN   | 14749 | 0.63 | 2.38 | 0.00 | 72.00 |
| R5DRINKN   | 17028 | 0.85 | 3.16 | 0.00 | 82.00 |
| S1DRINKN   | 10549 | 0.78 | 2.71 | 0.00 | 70.00 |
| S2DRINKN   | 9501  | 0.74 | 2.42 | 0.00 | 30.00 |
| S3DRINKN   | 10543 | 0.75 | 2.79 | 0.00 | 70.00 |
| S4DRINKN   | 9638  | 0.74 | 2.55 | 0.00 | 72.00 |
| S5DRINKN   | 7609  | 0.81 | 3.02 | 0.00 | 82.00 |
| R1DRINKB   | 15079 | 0.08 | 0.28 | 0.00 | 1.00  |
| R2DRINKB   | 13638 | 0.08 | 0.27 | 0.00 | 1.00  |
| R3DRINKB   | 15690 | 0.08 | 0.28 | 0.00 | 1.00  |
| R4DRINKB   | 14761 | 0.08 | 0.27 | 0.00 | 1.00  |
| R5DRINKB   | 17064 | 0.11 | 0.32 | 0.00 | 1.00  |
| S1DRINKB   | 10564 | 0.09 | 0.29 | 0.00 | 1.00  |
| S2DRINKB   | 9511  | 0.09 | 0.29 | 0.00 | 1.00  |
| S3DRINKB   | 10563 | 0.10 | 0.29 | 0.00 | 1.00  |
| S4DRINKB   | 9644  | 0.09 | 0.29 | 0.00 | 1.00  |
| S5DRINKB   | 7615  | 0.11 | 0.31 | 0.00 | 1.00  |
| R1BINGED   | 15079 | 0.91 | 6.43 | 0.00 | 87.00 |
| R2BINGED   | 13638 | 0.71 | 5.09 | 0.00 | 87.00 |
| R3BINGED   | 15690 | 0.48 | 3.65 | 0.00 | 87.00 |
| R4BINGED   | 14761 | 0.49 | 3.82 | 0.00 | 87.00 |
| R5BINGED   | 17064 | 0.63 | 4.34 | 0.00 | 87.00 |
| S1BINGED   | 10564 | 0.99 | 6.47 | 0.00 | 87.00 |
| S2BINGED   | 9511  | 0.77 | 5.10 | 0.00 | 87.00 |
| S3BINGED   | 10563 | 0.54 | 3.90 | 0.00 | 87.00 |
| S4BINGED   | 9644  | 0.55 | 3.81 | 0.00 | 87.00 |
| S5BINGED   | 7615  | 0.55 | 3.81 | 0.00 | 87.00 |
| R1DRINKCUT | 6087  | 0.37 | 0.48 | 0.00 | 1.00  |
| R2DRINKCUT | 2300  | 0.44 | 0.50 | 0.00 | 1.00  |
| R3DRINKCUT | 3113  | 0.46 | 0.50 | 0.00 | 1.00  |

|            |       |      |      |      |      |
|------------|-------|------|------|------|------|
| R4DRINKCUT | 3131  | 0.46 | 0.50 | 0.00 | 1.00 |
| S1DRINKCUT | 4510  | 0.38 | 0.48 | 0.00 | 1.00 |
| S2DRINKCUT | 1740  | 0.44 | 0.50 | 0.00 | 1.00 |
| S3DRINKCUT | 2362  | 0.48 | 0.50 | 0.00 | 1.00 |
| S4DRINKCUT | 2283  | 0.48 | 0.50 | 0.00 | 1.00 |
| R1DRINKCR  | 6085  | 0.24 | 0.42 | 0.00 | 1.00 |
| R2DRINKCR  | 2294  | 0.21 | 0.41 | 0.00 | 1.00 |
| R3DRINKCR  | 3112  | 0.20 | 0.40 | 0.00 | 1.00 |
| R4DRINKCR  | 3132  | 0.21 | 0.41 | 0.00 | 1.00 |
| S1DRINKCR  | 4508  | 0.25 | 0.43 | 0.00 | 1.00 |
| S2DRINKCR  | 1735  | 0.21 | 0.41 | 0.00 | 1.00 |
| S3DRINKCR  | 2360  | 0.21 | 0.41 | 0.00 | 1.00 |
| S4DRINKCR  | 2283  | 0.22 | 0.41 | 0.00 | 1.00 |
| R1DRINKBD  | 6084  | 0.26 | 0.44 | 0.00 | 1.00 |
| R2DRINKBD  | 2297  | 0.25 | 0.43 | 0.00 | 1.00 |
| R3DRINKBD  | 3115  | 0.23 | 0.42 | 0.00 | 1.00 |
| R4DRINKBD  | 3133  | 0.25 | 0.43 | 0.00 | 1.00 |
| S1DRINKBD  | 4507  | 0.26 | 0.44 | 0.00 | 1.00 |
| S2DRINKBD  | 1737  | 0.25 | 0.43 | 0.00 | 1.00 |
| S3DRINKBD  | 2362  | 0.25 | 0.43 | 0.00 | 1.00 |
| S4DRINKBD  | 2285  | 0.27 | 0.44 | 0.00 | 1.00 |
| R1DRINKNR  | 6083  | 0.18 | 0.39 | 0.00 | 1.00 |
| R2DRINKNR  | 2301  | 0.15 | 0.36 | 0.00 | 1.00 |
| R3DRINKNR  | 3116  | 0.12 | 0.33 | 0.00 | 1.00 |
| R4DRINKNR  | 3134  | 0.12 | 0.33 | 0.00 | 1.00 |
| S1DRINKNR  | 4506  | 0.19 | 0.39 | 0.00 | 1.00 |
| S2DRINKNR  | 1741  | 0.15 | 0.36 | 0.00 | 1.00 |
| S3DRINKNR  | 2363  | 0.13 | 0.33 | 0.00 | 1.00 |
| S4DRINKNR  | 2284  | 0.13 | 0.33 | 0.00 | 1.00 |
| R1CAGE     | 6100  | 1.04 | 1.31 | 0.00 | 4.00 |
| R2CAGE     | 2304  | 1.04 | 1.19 | 0.00 | 4.00 |
| R3CAGE     | 3118  | 1.01 | 1.16 | 0.00 | 4.00 |
| R4CAGE     | 3135  | 1.04 | 1.18 | 0.00 | 4.00 |
| S1CAGE     | 4519  | 1.07 | 1.33 | 0.00 | 4.00 |
| S2CAGE     | 1744  | 1.05 | 1.18 | 0.00 | 4.00 |
| S3CAGE     | 2364  | 1.06 | 1.17 | 0.00 | 4.00 |
| S4CAGE     | 2285  | 1.09 | 1.20 | 0.00 | 4.00 |
| R1CAGEM    | 15186 | 2.40 | 1.96 | 0.00 | 4.00 |
| R2CAGEM    | 13704 | 3.33 | 1.49 | 0.00 | 4.00 |
| R3CAGEM    | 15723 | 3.21 | 1.59 | 0.00 | 4.00 |
| R4CAGEM    | 14779 | 3.15 | 1.63 | 0.00 | 4.00 |
| S1CAGEM    | 10648 | 2.31 | 1.97 | 0.00 | 4.00 |
| S2CAGEM    | 9564  | 3.27 | 1.54 | 0.00 | 4.00 |
| S3CAGEM    | 10592 | 3.11 | 1.66 | 0.00 | 4.00 |
| S4CAGEM    | 9652  | 3.05 | 1.70 | 0.00 | 4.00 |

Categorical Variable Codes

|            |         |         |         |         |         |
|------------|---------|---------|---------|---------|---------|
| Value----- | R1DRINK | R2DRINK | R3DRINK | R4DRINK | R5DRINK |
| .d:DK      | 3       | 3       | 2       | 2       | 3       |
| .m:Missing | 4       |         |         | 6       |         |
| .r:Refuse  | 4       | 1       | 2       | 1       | 6       |
| 0.no       | 10441   | 10159   | 12147   | 11382   | 12414   |

|                               |            |            |            |            |          |
|-------------------------------|------------|------------|------------|------------|----------|
| 1.yes                         | 4734       | 3541       | 3572       | 3388       | 4691     |
| Value-----                    | S1DRINK    | S2DRINK    | S3DRINK    | S4DRINK    | S5DRINK  |
| .d:DK                         | 2          | 3          | 2          | 1          | 1        |
| .m:Missing                    | 3          |            |            | 1          |          |
| .r:Refuse                     | 2          |            | 2          |            | 2        |
| .u:Unmar                      | 4205       | 4009       | 4782       | 4847       | 5227     |
| .v:SP NR                      | 333        | 131        | 349        | 280        | 501      |
| 0.no                          | 7032       | 6863       | 7887       | 7197       | 5578     |
| 1.yes                         | 3609       | 2698       | 2701       | 2453       | 2057     |
| Value-----                    | R1DRINKB   | R2DRINKB   | R3DRINKB   | R4DRINKB   | R5DRINKB |
| .d:DK                         | 73         | 58         | 28         | 9          | 31       |
| .m:Missing                    | 4          |            |            | 6          |          |
| .r:Refuse                     | 30         | 8          | 5          | 3          | 19       |
| 0.no                          | 13824      | 12518      | 14378      | 13551      | 15150    |
| 1.yes                         | 1255       | 1120       | 1312       | 1210       | 1914     |
| Value-----                    | S1DRINKB   | S2DRINKB   | S3DRINKB   | S4DRINKB   | S5DRINKB |
| .d:DK                         | 58         | 47         | 25         | 5          | 11       |
| .m:Missing                    | 3          |            |            | 1          |          |
| .r:Refuse                     | 23         | 6          | 4          | 2          | 12       |
| .u:Unmar                      | 4205       | 4009       | 4782       | 4847       | 5227     |
| .v:SP NR                      | 333        | 131        | 349        | 280        | 501      |
| 0.no                          | 9567       | 8620       | 9556       | 8729       | 6795     |
| 1.yes                         | 997        | 891        | 1007       | 915        | 820      |
| Value-----                    | R1DRINKCUT | R2DRINKCUT | R3DRINKCUT | R4DRINKCUT |          |
| .d:DK                         | 55         | 7          | 4          | 4          |          |
| .m:Missing                    | 4          | 1          |            | 6          |          |
| .n:does not drink             | 8455       | 10378      | 11506      | 10831      |          |
| .p:Proxy interview, not asked | 523        | 1015       | 1092       | 804        |          |
| .r:Refuse                     | 62         | 3          | 8          | 3          |          |
| 0.no                          | 3841       | 1288       | 1678       | 1685       |          |
| 1.yes                         | 2246       | 1012       | 1435       | 1446       |          |
| Value-----                    | S1DRINKCUT | S2DRINKCUT | S3DRINKCUT | S4DRINKCUT |          |
| .d:DK                         | 44         | 7          | 2          | 3          |          |
| .m:Missing                    | 3          | 1          |            | 1          |          |
| .n:does not drink             | 5678       | 7102       | 7588       | 6944       |          |
| .p:Proxy interview, not asked | 365        | 712        | 636        | 420        |          |
| .r:Refuse                     | 48         | 2          | 4          | 1          |          |
| .u:Unmar                      | 4205       | 4009       | 4782       | 4847       |          |
| .v:SP NR                      | 333        | 131        | 349        | 280        |          |
| 0.no                          | 2806       | 969        | 1217       | 1179       |          |
| 1.yes                         | 1704       | 771        | 1145       | 1104       |          |
| Value-----                    | R1DRINKCR  | R2DRINKCR  | R3DRINKCR  | R4DRINKCR  |          |
| .d:DK                         | 57         | 9          | 4          | 3          |          |
| .m:Missing                    | 4          | 2          |            | 6          |          |
| .n:does not drink             | 8455       | 10378      | 11506      | 10831      |          |
| .p:Proxy interview, not asked | 523        | 1015       | 1092       | 804        |          |
| .r:Refuse                     | 62         | 6          | 9          | 3          |          |
| 0.no                          | 4650       | 1817       | 2494       | 2481       |          |
| 1.yes                         | 1435       | 477        | 618        | 651        |          |
| Value-----                    | S1DRINKCR  | S2DRINKCR  | S3DRINKCR  | S4DRINKCR  |          |
| .d:DK                         | 48         | 9          | 2          | 3          |          |
| .m:Missing                    | 3          | 2          |            | 1          |          |
| .n:does not drink             | 5678       | 7102       | 7588       | 6944       |          |
| .p:Proxy interview, not asked | 365        | 712        | 636        | 420        |          |
| .r:Refuse                     | 46         | 4          | 6          | 1          |          |
| .u:Unmar                      | 4205       | 4009       | 4782       | 4847       |          |
| .v:SP NR                      | 333        | 131        | 349        | 280        |          |
| 0.no                          | 3401       | 1371       | 1871       | 1788       |          |
| 1.yes                         | 1107       | 364        | 489        | 495        |          |
| Value-----                    | R1DRINKBD  | R2DRINKBD  | R3DRINKBD  | R4DRINKBD  |          |
| .d:DK                         | 58         | 6          | 2          | 1          |          |
| .m:Missing                    | 4          | 2          |            | 6          |          |
| .n:does not drink             | 8455       | 10378      | 11506      | 10831      |          |
| .p:Proxy interview, not asked | 523        | 1015       | 1092       | 804        |          |
| .r:Refuse                     | 62         | 6          | 8          | 4          |          |

|                               |  |           |           |           |           |
|-------------------------------|--|-----------|-----------|-----------|-----------|
| 0.no                          |  | 4521      | 1724      | 2409      | 2364      |
| 1.yes                         |  | 1563      | 573       | 706       | 769       |
| Value-----                    |  | S1DRINKBD | S2DRINKBD | S3DRINKBD | S4DRINKBD |
| .d:DK                         |  | 48        | 6         | 2         | 1         |
| .m:Missing                    |  | 3         | 2         |           | 1         |
| .n:does not drink             |  | 5678      | 7102      | 7588      | 6944      |
| .p:Proxy interview, not asked |  | 365       | 712       | 636       | 420       |
| .r:Refuse                     |  | 47        | 5         | 4         | 1         |
| .u:Unmar                      |  | 4205      | 4009      | 4782      | 4847      |
| .v:SP NR                      |  | 333       | 131       | 349       | 280       |
| 0.no                          |  | 3325      | 1302      | 1780      | 1679      |
| 1.yes                         |  | 1182      | 435       | 582       | 606       |
| Value-----                    |  | R1DRINKNR | R2DRINKNR | R3DRINKNR | R4DRINKNR |
| .d:DK                         |  | 55        | 4         | 1         | 1         |
| .m:Missing                    |  | 4         | 2         |           | 6         |
| .n:does not drink             |  | 8455      | 10378     | 11506     | 10831     |
| .p:Proxy interview, not asked |  | 523       | 1015      | 1092      | 804       |
| .r:Refuse                     |  | 66        | 4         | 8         | 3         |
| 0.no                          |  | 4974      | 1957      | 2738      | 2750      |
| 1.yes                         |  | 1109      | 344       | 378       | 384       |
| Value-----                    |  | S1DRINKNR | S2DRINKNR | S3DRINKNR | S4DRINKNR |
| .d:DK                         |  | 45        | 4         | 1         | 1         |
| .m:Missing                    |  | 3         | 2         |           | 1         |
| .n:does not drink             |  | 5678      | 7102      | 7588      | 6944      |
| .p:Proxy interview, not asked |  | 365       | 712       | 636       | 420       |
| .r:Refuse                     |  | 51        | 3         | 4         | 2         |
| .u:Unmar                      |  | 4205      | 4009      | 4782      | 4847      |
| .v:SP NR                      |  | 333       | 131       | 349       | 280       |
| 0.no                          |  | 3644      | 1483      | 2063      | 1992      |
| 1.yes                         |  | 862       | 258       | 300       | 292       |

## How Constructed

RwDRINK is a yes/no indicator for whether the respondent ever drinks alcoholic beverages, such as beer, wine, liquor, or pulque. A code of 0 indicates that the respondent does not ever have an alcoholic drink. A code of 1 indicates that the respondent does ever have an alcoholic drink. When respondents don't know, refuse to answer, or answers are missing, RwDRINK is assigned special missing values .d, .r, .m, respectively. RwDRINK is set to plain missing (.) for respondents who did not respond to the current wave.

RwDRINKD indicates the number of days per week the respondent drinks. RwDRINKN indicates the number of drinks the respondent has when they drink. A code of 0 was assigned if the respondent reported they never have an alcoholic drink (this is if RwDRINK is 0). When respondents don't know, refuse to answer, or answers are missing, RwDRINKD and RwDRINKN are assigned special missing values .d, .r, .m, respectively. RwDRINKD and RwDRINKN are set to plain missing (.) for respondents who did not respond to the current wave.

RwDRINKB indicates whether the respondent ever binge drinks. RwBINGED indicates the number of days the respondent reports binge drinking in the last 3 months. Binge drinking is determined by the question: "In the last three months, on how many days have you had four or more drinks on one occasion?". If the respondent reports an answer of "no" to this question, reports never drinking, or reports drinking 0 days per week in the last 3 months, then RwDRINKB is coded as 0.No, and RwBINGED is coded as 0. If the respondent reports a number of 1 or greater to this question, then RwDRINKB is coded as 1.Yes and RwBINGED takes the numerical value. If RwBINGED is coded as 87, it indicates that the respondent "drinks 87 days or more". Don't know, refused, or other missing responses of RwDRINKB and RwBINGED are assigned special missing codes .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwDRINKCUT, RwDRINKCR, RwDRINKBD, and RwDRINKNR indicate the respondent's feelings about their drinking habits. RwDRINKCUT indicates whether the respondent has ever felt that they should cut down on their drinking. RwDRINKCR indicates whether people have ever annoyed the respondent by criticizing their drinking. RwDRINKBD indicates whether the respondent has ever felt bad or guilty about drinking. RwDRINKNR indicates whether the respondent has ever taken a drink first thing in the morning to steady their nerves or get rid of a hangover. These variables are coded as 0.No and 1.Yes. RwCAGE is a summary variable for the respondent's feelings about their drinking habits. RwCAGE is equal to RwDRINKCUT +

RwDRINKCR + RwDRINKBD + RwDRINKNR. RwcAGEM indicates the number of variables missing in the calculation of RwcAGE. RwcAGE is calculated as long as at least one of the component variables is not missing. Don't know, refused, or other missing responses are assigned special missing codes .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

SwDRINK, SwDRINKD, SwDRINKN, SwDRINKB, SwBINGED, SwDRINKCUT, SwDRINKCR, SwDRINKBD, SwDRINKNR, SwCAGE, and SwCAGEM record the respondent's spouse's drinking behavior and are taken directly from the spouse's RwDRINK, RwDRINKD, RwDRINKN, RwDRINKB, SwBINGED, SwDRINKCUT, SwDRINKCR, SwDRINKBD, SwDRINKNR, RwcAGE, and RwcAGEM variables. In addition to the special missing codes used in the respondent variables, the spouse variables employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

In the RAND HRS, the variable RwDRINK is constructed using the original HRS question "Do you ever drink any alcoholic beverages, such as beer, wine, or liquor?" It is worth mentioning that in the MHAS they also ask about pulque (alcohol made from fermented cactus sap). Also different to the HRS, when respondents are asked about how many days have they had four or more drinks on one occasion, the maximum allowed is 87 in the MHAS instead of 92 in the HRS.

## MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| C60     | drink now   |
| C61     | how often drink   |
| C62     | how much drink  |
| Wave 2: |   |
| C59A    | currently drink alcohol                                 |
| C59B    | days per week drank alcohol in last three months        |
| C59C    | number of drinks a day                                  |
| Wave 3: |   |
| C59A_12 | Respondent currently drinks alcohol                     |
| C59B_12 | Last 3 months: Number of days per week he/she drank alc |
| C59C_12 | Last 3 months: Number of alcoholic beverages per day    |
| C59D_12 | Last 3 months: Number of days with >= 4 drinks in one o |
| C59E_12 | Last 2 years: Respondent drank alcohol                  |
| C60_12  | Did/Has respondent consider(ed) drinking less           |
| C61_12  | Respondent annoyed by criticism about drinking alcohol  |
| C62_12  | Has respondent felt bad because h/she drank             |
| C63_12  | Does respondent drink alcohol in the morning to calm ne |
| Wave 4: |   |
| C59A_15 | Does respondent currently drinks alcohol                |
| C59B_15 | In the last 3 months: Number of days per week he/she dr |
| C59C_15 | In the last 3 months: Number of alcoholic beverages per |
| C59D_15 | In the last 3 months: Number of days with 4 or more dri |
| C59E_15 | In the last 2 years: Did respondent had any alcohol     |
| C60_15  | Has respondent considered drinking less                 |
| C61_15  | Has respondent ever been annoyed by criticism about dri |
| C62_15  | Has respondent feel bad because h/she drank             |
| C63_15  | Does respondent drink alcohol in the morning to calm ne |
| Wave 5: |   |
| C59A_18 | Does R currently drinks alcohol                         |
| C59B_18 | In the last 3 months: Number of days per week he/she dr |
| C59C_18 | In the last 3 months: Number of alcoholic beverages per |
| C59D_18 | In the last 3 months: Number of days with 4 or more dri |



|   |
|---|
| <b>Health Behaviors: Smoking (Cigarettes)</b> |
|---|

| Wave | Variable   | Label                                   | Type  |
|------|------------|---|-------|
| 1    | R1SMOKEV   | r1smokev: w1 R Ever smoked              | Categ |
| 2    | R2SMOKEV   | r2smokev: w2 R Ever smoked              | Categ |
| 3    | R3SMOKEV   | r3smokev: w3 R Ever smoked              | Categ |
| 4    | R4SMOKEV   | r4smokev: w4 R Ever smoked              | Categ |
| 5    | R5SMOKEV   | r5smokev: w5 R Ever smoked              | Categ |
| 1    | S1SMOKEV   | s1smokev: w1 S Ever smoked              | Categ |
| 2    | S2SMOKEV   | s2smokev: w2 S Ever smoked              | Categ |
| 3    | S3SMOKEV   | s3smokev: w3 S Ever smoked              | Categ |
| 4    | S4SMOKEV   | s4smokev: w4 S Ever smoked              | Categ |
| 5    | S5SMOKEV   | s5smokev: w5 S Ever smoked              | Categ |
| 1    | R1SMOKEN   | r1smoken: w1 R Smokes now               | Categ |
| 2    | R2SMOKEN   | r2smoken: w2 R Smokes now               | Categ |
| 3    | R3SMOKEN   | r3smoken: w3 R Smokes now               | Categ |
| 4    | R4SMOKEN   | r4smoken: w4 R Smokes now               | Categ |
| 5    | R5SMOKEN   | r5smoken: w5 R Smokes now               | Categ |
| 1    | S1SMOKEN   | s1smoken: w1 S Smokes now               | Categ |
| 2    | S2SMOKEN   | s2smoken: w2 S Smokes now               | Categ |
| 3    | S3SMOKEN   | s3smoken: w3 S Smokes now               | Categ |
| 4    | S4SMOKEN   | s4smoken: w4 S Smokes now               | Categ |
| 5    | S5SMOKEN   | s5smoken: w5 S Smokes now               | Categ |
| 1    | R1SMOKEF   | r1smokef: w1 R Number of cigarettes/day | Cont  |
| 2    | R2SMOKEF   | r2smokef: w2 R Number of cigarettes/day | Cont  |
| 3    | R3SMOKEF   | r3smokef: w3 R Number of cigarettes/day | Cont  |
| 4    | R4SMOKEF   | r4smokef: w4 R Number of cigarettes/day | Cont  |
| 5    | R5SMOKEF   | r5smokef: w5 R Number of cigarettes/day | Cont  |
| 1    | S1SMOKEF   | s1smokef: w1 S Number of cigarettes/day | Cont  |
| 2    | S2SMOKEF   | s2smokef: w2 S Number of cigarettes/day | Cont  |
| 3    | S3SMOKEF   | s3smokef: w3 S Number of cigarettes/day | Cont  |
| 4    | S4SMOKEF   | s4smokef: w4 S Number of cigarettes/day | Cont  |
| 5    | S5SMOKEF   | s5smokef: w5 S Number of cigarettes/day | Cont  |
| 1    | R1STRTSMOK | r1strtsmok: w1 R Age started smoking    | Cont  |
| 2    | R2STRTSMOK | r2strtsmok: w2 R Age started smoking    | Cont  |
| 3    | R3STRTSMOK | r3strtsmok: w3 R Age started smoking    | Cont  |
| 4    | R4STRTSMOK | r4strtsmok: w4 R Age started smoking    | Cont  |
| 5    | R5STRTSMOK | r5strtsmok: w5 R Age started smoking    | Cont  |
| 1    | S1STRTSMOK | s1strtsmok: w1 S Age started smoking    | Cont  |
| 2    | S2STRTSMOK | s2strtsmok: w2 S Age started smoking    | Cont  |
| 3    | S3STRTSMOK | s3strtsmok: w3 S Age started smoking    | Cont  |
| 4    | S4STRTSMOK | s4strtsmok: w4 S Age started smoking    | Cont  |
| 5    | S5STRTSMOK | s5strtsmok: w5 S Age started smoking    | Cont  |
| 1    | R1QUITSMOK | r1quitsmok: w1 R Age quit smoking       | Cont  |
| 2    | R2QUITSMOK | r2quitsmok: w2 R Age quit smoking       | Cont  |
| 3    | R3QUITSMOK | r3quitsmok: w3 R Age quit smoking       | Cont  |
| 4    | R4QUITSMOK | r4quitsmok: w4 R Age quit smoking       | Cont  |
| 5    | R5QUITSMOK | r5quitsmok: w5 R Age quit smoking       | Cont  |
| 1    | S1QUITSMOK | s1quitsmok: w1 S Age quit smoking       | Cont  |
| 2    | S2QUITSMOK | s2quitsmok: w2 S Age quit smoking       | Cont  |
| 3    | S3QUITSMOK | s3quitsmok: w3 S Age quit smoking       | Cont  |
| 4    | S4QUITSMOK | s4quitsmok: w4 S Age quit smoking       | Cont  |
| 5    | S5QUITSMOK | s5quitsmok: w5 S Age quit smoking       | Cont  |

**Descriptive Statistics**

| Variable   | N     | Mean  | Std Dev | Minimum | Maximum |
|------------|-------|-------|---------|---------|---------|
| R1SMOKEV   | 15173 | 0.43  | 0.50    | 0.00    | 1.00    |
| R2SMOKEV   | 13695 | 0.41  | 0.49    | 0.00    | 1.00    |
| R3SMOKEV   | 15718 | 0.37  | 0.48    | 0.00    | 1.00    |
| R4SMOKEV   | 14759 | 0.40  | 0.49    | 0.00    | 1.00    |
| R5SMOKEV   | 17100 | 0.37  | 0.48    | 0.00    | 1.00    |
| S1SMOKEV   | 10640 | 0.44  | 0.50    | 0.00    | 1.00    |
| S2SMOKEV   | 9558  | 0.43  | 0.50    | 0.00    | 1.00    |
| S3SMOKEV   | 10589 | 0.39  | 0.49    | 0.00    | 1.00    |
| S4SMOKEV   | 9645  | 0.42  | 0.49    | 0.00    | 1.00    |
| S5SMOKEV   | 7631  | 0.39  | 0.49    | 0.00    | 1.00    |
| R1SMOKEN   | 15169 | 0.17  | 0.38    | 0.00    | 1.00    |
| R2SMOKEN   | 13693 | 0.16  | 0.37    | 0.00    | 1.00    |
| R3SMOKEN   | 15717 | 0.12  | 0.32    | 0.00    | 1.00    |
| R4SMOKEN   | 14759 | 0.12  | 0.32    | 0.00    | 1.00    |
| R5SMOKEN   | 17096 | 0.11  | 0.32    | 0.00    | 1.00    |
| S1SMOKEN   | 10636 | 0.18  | 0.39    | 0.00    | 1.00    |
| S2SMOKEN   | 9556  | 0.17  | 0.38    | 0.00    | 1.00    |
| S3SMOKEN   | 10588 | 0.13  | 0.33    | 0.00    | 1.00    |
| S4SMOKEN   | 9645  | 0.12  | 0.33    | 0.00    | 1.00    |
| S5SMOKEN   | 7629  | 0.11  | 0.31    | 0.00    | 1.00    |
| R1SMOKEF   | 15169 | 1.57  | 6.13    | 0.00    | 99.00   |
| R2SMOKEF   | 13693 | 1.09  | 4.64    | 0.00    | 99.00   |
| R3SMOKEF   | 15706 | 0.72  | 3.38    | 0.00    | 100.00  |
| R4SMOKEF   | 14755 | 0.65  | 3.00    | 0.00    | 60.00   |
| R5SMOKEF   | 17093 | 0.59  | 2.92    | 0.00    | 87.00   |
| S1SMOKEF   | 10636 | 1.63  | 6.02    | 0.00    | 99.00   |
| S2SMOKEF   | 9556  | 1.21  | 5.05    | 0.00    | 99.00   |
| S3SMOKEF   | 10581 | 0.75  | 3.47    | 0.00    | 100.00  |
| S4SMOKEF   | 9642  | 0.66  | 3.03    | 0.00    | 60.00   |
| S5SMOKEF   | 7628  | 0.60  | 3.18    | 0.00    | 87.00   |
| R1STRTSMOK | 5888  | 20.58 | 9.75    | 9.00    | 85.00   |
| R2STRTSMOK | 6461  | 20.71 | 9.75    | 8.00    | 85.00   |
| R3STRTSMOK | 6890  | 20.18 | 8.86    | 1.00    | 75.00   |
| R4STRTSMOK | 7125  | 20.32 | 8.89    | 1.00    | 84.00   |
| R5STRTSMOK | 7730  | 20.14 | 8.55    | 1.00    | 84.00   |
| S1STRTSMOK | 4284  | 19.88 | 8.80    | 9.00    | 77.00   |
| S2STRTSMOK | 4728  | 20.04 | 8.91    | 8.00    | 77.00   |
| S3STRTSMOK | 4789  | 19.40 | 8.09    | 1.00    | 75.00   |
| S4STRTSMOK | 4886  | 19.65 | 8.20    | 1.00    | 75.00   |
| S5STRTSMOK | 3937  | 19.71 | 8.16    | 1.00    | 76.00   |
| R1QUITSMOK | 3310  | 18.12 | 13.59   | 1.00    | 75.00   |
| R2QUITSMOK | 4117  | 18.21 | 13.47   | 1.00    | 76.00   |
| R3QUITSMOK | 4769  | 23.96 | 16.58   | 1.00    | 84.00   |
| R4QUITSMOK | 5360  | 37.69 | 18.49   | 1.00    | 99.00   |
| R5QUITSMOK | 5824  | 39.65 | 17.20   | 1.00    | 99.00   |
| S1QUITSMOK | 2378  | 17.74 | 13.36   | 1.00    | 70.00   |
| S2QUITSMOK | 2985  | 17.81 | 13.24   | 1.00    | 76.00   |
| S3QUITSMOK | 3281  | 24.14 | 16.36   | 1.00    | 81.00   |
| S4QUITSMOK | 3661  | 37.26 | 17.71   | 1.00    | 99.00   |
| S5QUITSMOK | 3143  | 39.95 | 17.34   | 1.00    | 99.00   |

## Categorical Variable Codes

| Value----- | R1SMOKEV | R2SMOKEV | R3SMOKEV | R4SMOKEV | R5SMOKEV |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 8        | 7        | 4        | 9        | 9        |
| .m:Missing | 4        |          |          | 6        |          |
| .r:Refuse  | 1        | 2        | 1        | 5        | 5        |
| 0.No       | 8652     | 8047     | 9957     | 8911     | 10800    |
| 1.Yes      | 6521     | 5648     | 5761     | 5848     | 6300     |

| Value----- | S1SMOKEV | S2SMOKEV | S3SMOKEV | S4SMOKEV | S5SMOKEV |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 4        | 5        | 2        | 3        | 5        |
| .m:Missing | 3        |          |          | 1        |          |
| .r:Refuse  | 1        | 1        | 1        | 3        | 2        |
| .u:Unmar   | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR   | 333      | 131      | 349      | 280      | 501      |
| 0.No       | 5906     | 5427     | 6482     | 5628     | 4666     |
| 1.Yes      | 4734     | 4131     | 4107     | 4017     | 2965     |

| Value----- | R1SMOKEN | R2SMOKEN | R3SMOKEN | R4SMOKEN | R5SMOKEN |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 11       | 9        | 4        | 9        | 11       |
| .m:Missing | 4        |          |          | 6        |          |
| .r:Refuse  | 2        | 2        | 2        | 5        | 7        |
| 0.No       | 12522    | 11493    | 13841    | 13053    | 15136    |
| 1.Yes      | 2647     | 2200     | 1876     | 1706     | 1960     |

| Value----- | S1SMOKEN | S2SMOKEN | S3SMOKEN | S4SMOKEN | S5SMOKEN |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 7        | 7        | 2        | 3        | 7        |
| .m:Missing | 3        |          |          | 1        |          |
| .r:Refuse  | 2        | 1        | 2        | 3        | 2        |
| .u:Unmar   | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR   | 333      | 131      | 349      | 280      | 501      |
| 0.No       | 8679     | 7914     | 9248     | 8461     | 6827     |
| 1.Yes      | 1957     | 1642     | 1340     | 1184     | 802      |

## How Constructed

RwSMOKEV indicates whether the respondent ever smoked cigarettes. A code of 0 indicates that the respondent has never smoked. A code of 1 indicates that the respondent has ever smoked. When respondents don't know, refuse to answer, or answers are missing, RwSMOKEV is assigned special missing values .d, .r, .m, respectively. RwSMOKEV is set to plain missing (.) for respondents who did not respond to the current wave.

RwSMOKEN indicates whether the respondent reports currently smoking. This question is only asked if the respondent reports having ever smoked. If the respondent reports they have never smoked, RwSMOKEN is assigned a code of 0. A code of 0 indicates that the respondent does not currently smoke. A code of 1 indicates that the respondent currently smokes. When respondents don't know, refuse to answer, or answers are missing, RwSMOKEN is assigned special missing values .d, .r, .m, respectively. RwSMOKEN is set to plain missing (.) for respondents who did not respond to the current wave.

RwSMOKEF indicates the number of cigarettes the respondent usually smokes in a day. In Waves 1 and 2, respondents can report the number of cigarettes or the number of packs, and these responses are then converted to the number of cigarettes in the MHAS data. Starting in Wave 3, respondents can report the number of cigarettes or the number of packs which is converted to cigarettes for RwSMOKEF by multiplying the number of packs by 20. This question is only asked if the respondent reports having ever smoked and currently smoking. If the respondent reports they have never smoked or do not currently smoke, RwSMOKEF is assigned a code of 0. When respondents don't know, refuse to answer, or answers are missing, RwSMOKEF is assigned special missing values .d, .r, .m, respectively. RwSMOKEF is set to plain missing (.) for respondents who did not respond to the current wave.

RwSTRTSMOK indicates the age at which the respondent started smoking. In Waves 1 and 2, respondents are asked the year or age they started smoking, and these responses are then converted to the age in the MHAS data. In Wave 3, respondents can report the age at which they started smoking, or the year in which they started smoking. Starting in Wave 4, respondents can report the age at which they started smoking, the number of years ago they started smoking, or the year in which they started smoking. If the respondent reports the number of years ago they started smoking, this value is subtracted from the respondent's age at the time of interview. If the respondent reports the year in which they started smoking, the

respondent's birth year is subtracted from this value to obtain the age at which the respondent started smoking. If the calculated age started smoking takes a value of less than 1, or if the reported age is higher than the respondent's age at the current wave, then `RwSTRTSMOK` is assigned special missing value .i. If the respondent reports multiple ages that they started smoking across waves, the first reported value is used. `RwSTRTSMOK` is assigned special missing .n if the respondent reports never smoking. Don't know, refused, or other missing responses of `RwSTRTSMOK` are assigned special missing codes .d, .r, and .m, respectively. `RwSTRTSMOK` is set to plain missing (.) for respondents who did not participate in the current wave.

`RwQUITSMOK` indicates the age at which the respondent quit smoking. In Waves 1 and 2, respondents are asked the year or age they quit smoking, and these responses are then converted to the age in the MHAS data. In Wave 3, respondents can report the age at which they quit smoking, or the year in which they quit smoking. Starting in Wave 4, respondents can report the age at which they quit smoking, the number of years ago they quit smoking, or the year in which they quit smoking. If the respondent reports the number of years ago they quit smoking, this value is subtracted from the respondent's age at the time of interview. If the respondent reports the year in which they quit smoking, the respondent's birth year is subtracted from this value to obtain the age at which the respondent quit smoking. If the calculated age quit smoking takes a value of less than 1, or if the reported age is higher than the respondent's age at the current wave, then `RwQUITSMOK` is assigned special missing value .i. `RwQUITSMOK` is assigned special missing .n if the respondent reports never smoking. `RwQUITSMOK` is assigned special missing .c if the respondent reports currently smoking. Don't know, refused, or other missing responses of `RwQUITSMOK` are assigned special missing codes .d, .r, and .m, respectively. `RwQUITSMOK` is set to plain missing (.) for respondents who did not participate in the current wave.

`SwSMOKEV`, `SwSMOKEN`, `SwSMOKEF`, `SwSTRTSMOK`, and `SwQUITSMOK` record the respondent's spouse's smoking behavior and are taken directly from the spouse's `RwSMOKEV`, `RwSMOKEN`, `RwSMOKEF`, `RwSTRTSMOK`, and `RwQUITSMOK` variables. In addition to the special missing codes used in `RwSMOKEV`, `RwSMOKEN`, `RwSMOKEF`, `RwSTRTSMOK`, and `RwQUITSMOK`; `SwSMOKEV`, `SwSMOKEN`, `SwSMOKEF`, `SwSTRTSMOK`, and `SwQUITSMOK` employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

In all waves the respondent can report the amount smoked per day by reporting the number of cigarettes or number of packs, but the number of packs is converted to the number of cigarettes in the original MHAS data in Waves 1 and 2.

In all waves the respondent can report the year or age they started smoking, but the year the respondent started smoking is converted to the age in the original MHAS data in Waves 1 and 2. Starting in Wave 4, respondent can also report the number of years ago they started smoking.

In all waves the respondent can report the year or age they quit smoking, but the year the respondent quit smoking is converted to the age in the original MHAS data in Waves 1 and 2. Starting in Wave 4, respondent can also report the number of years ago they quit smoking.

## Differences with the RAND HRS/Harmonized HRS

No differences known.

## MHAS Variables Used

### Wave 1:

|     |                   |
|-----|-------------------|
| C54 | ever smoked       |
| C55 | smoke now         |
| C56 | how much smoke    |
| C57 | age first smoke   |
| C59 | years not smoking |

### Wave 2:

|     |                              |
|-----|------------------------------|
| C51 | ever smoked cigarettes       |
| C52 | how old when started smoking |
| C53 | smoked cigarettes since 2001 |
| C54 | smoke cigarettes now         |

|          |   |
|----------|---|
| C56      | how many cigarettes/packs a day                         |
| C58      | how many years smoked                                   |
| Wave 3:  |   |
| C51_12   | Has respondent ever smoked cigarettes                   |
| C52_1_12 | Age respondent started smoking                          |
| C52_2_12 | Year respondent started smoking                         |
| C53_12   | Last 2 years: Respondent smoked cigarettes              |
| C54_12   | Does respondent currently smoke cigarettes              |
| C56_1_12 | Respondent's number of cigarettes smoked daily          |
| C56_2_12 | Respondent number of cigarette pack(s) smoked daily     |
| C58_1_12 | How many years ago did respondent stop smoking, Or      |
| C58_2_12 | Year when respondent stopped smoking                    |
| Wave 4:  |   |
| C51_15   | Has respondent ever smoked cigarettes                   |
| C52_1_15 | Respondent age when he/she started smoking              |
| C52_2_15 | Year respondent started smoking                         |
| C53_15   | In the last 2 years: Did respondent smoked cigarettes   |
| C54_15   | Does respondent currently smoke cigarettes              |
| C56_15   | Respondent's number of cigarettes smoked daily          |
| C58_1_15 | Total number of years since the respondent stoped smoki |
| C58_2_15 | Year when respondent stopped smoking                    |
| Wave 5:  |   |
| C51_18   | Has R ever smoked cigarettes                            |
| C52_1_18 | R age when he/she started smoking                       |
| C52_2_18 | Year R started smoking                                  |
| C52_3_18 | Total number of years R has smoked                      |
| C53_18   | In the last 2 years: Did R smoked cigarettes            |
| C54_18   | Does R currently smoke cigarettes                       |
| C56_18   | R's number of cigarettes smoked daily                   |
| C58_1_18 | Total number of years since the R stoped smoking        |
| C58_2_18 | Year when R stopped smoking                             |
| C58_3_18 | R's age when he/she stopped smoking                     |

|  |
|--|
| <b>Health Behaviors: Preventive Care</b> |
|--|

| Wave | Variable | Label                                  | Type  |
|------|----------|--|-------|
| 1    | R1CHOLST | r1cholst: w1 R Prev Care: Cholesterol  | Categ |
| 2    | R2CHOLST | r2cholst: w2 R Prev Care: Cholesterol  | Categ |
| 3    | R3CHOLST | r3cholst: w3 R Prev Care: Cholesterol  | Categ |
| 4    | R4CHOLST | r4cholst: w4 R Prev Care: Cholesterol  | Categ |
| 5    | R5CHOLST | r5cholst: w5 R Prev Care: Cholesterol  | Categ |
| 1    | S1CHOLST | s1cholst: w1 S Prev Care: Cholesterol  | Categ |
| 2    | S2CHOLST | s2cholst: w2 S Prev Care: Cholesterol  | Categ |
| 3    | S3CHOLST | s3cholst: w3 S Prev Care: Cholesterol  | Categ |
| 4    | S4CHOLST | s4cholst: w4 S Prev Care: Cholesterol  | Categ |
| 5    | S5CHOLST | s5cholst: w5 S Prev Care: Cholesterol  | Categ |
| 3    | R3FLUSHT | r3flusht: w3 R Prev Care: Flu shot     | Categ |
| 4    | R4FLUSHT | r4flusht: w4 R Prev Care: Flu shot     | Categ |
| 5    | R5FLUSHT | r5flusht: w5 R Prev Care: Flu shot     | Categ |
| 3    | S3FLUSHT | s3flusht: w3 S Prev Care: Flu shot     | Categ |
| 4    | S4FLUSHT | s4flusht: w4 S Prev Care: Flu shot     | Categ |
| 5    | S5FLUSHT | s5flusht: w5 S Prev Care: Flu shot     | Categ |
| 1    | R1BREAST | r1breast: w1 R Prev Care: Breast Check | Categ |
| 2    | R2BREAST | r2breast: w2 R Prev Care: Breast Check | Categ |
| 3    | R3BREAST | r3breast: w3 R Prev Care: Breast Check | Categ |
| 4    | R4BREAST | r4breast: w4 R Prev Care: Breast Check | Categ |
| 5    | R5BREAST | r5breast: w5 R Prev Care: Breast Check | Categ |
| 1    | S1BREAST | s1breast: w1 S Prev Care: Breast Check | Categ |
| 2    | S2BREAST | s2breast: w2 S Prev Care: Breast Check | Categ |
| 3    | S3BREAST | s3breast: w3 S Prev Care: Breast Check | Categ |
| 4    | S4BREAST | s4breast: w4 S Prev Care: Breast Check | Categ |
| 5    | S5BREAST | s5breast: w5 S Prev Care: Breast Check | Categ |
| 1    | R1MAMMOG | r1mammog: w1 R Prev Care: Mammogram    | Categ |
| 2    | R2MAMMOG | r2mammog: w2 R Prev Care: Mammogram    | Categ |
| 3    | R3MAMMOG | r3mammog: w3 R Prev Care: Mammogram    | Categ |
| 4    | R4MAMMOG | r4mammog: w4 R Prev Care: Mammogram    | Categ |
| 5    | R5MAMMOG | r5mammog: w5 R Prev Care: Mammogram    | Categ |
| 1    | S1MAMMOG | s1mammog: w1 S Prev Care: Mammogram    | Categ |
| 2    | S2MAMMOG | s2mammog: w2 S Prev Care: Mammogram    | Categ |
| 3    | S3MAMMOG | s3mammog: w3 S Prev Care: Mammogram    | Categ |
| 4    | S4MAMMOG | s4mammog: w4 S Prev Care: Mammogram    | Categ |
| 5    | S5MAMMOG | s5mammog: w5 S Prev Care: Mammogram    | Categ |
| 1    | R1PAPSM  | r1papsm: w1 R Prev Care: Pap Smear     | Categ |
| 2    | R2PAPSM  | r2papsm: w2 R Prev Care: Pap Smear     | Categ |
| 3    | R3PAPSM  | r3papsm: w3 R Prev Care: Pap Smear     | Categ |
| 4    | R4PAPSM  | r4papsm: w4 R Prev Care: Pap Smear     | Categ |
| 5    | R5PAPSM  | r5papsm: w5 R Prev Care: Pap Smear     | Categ |
| 1    | S1PAPSM  | s1papsm: w1 S Prev Care: Pap Smear     | Categ |
| 2    | S2PAPSM  | s2papsm: w2 S Prev Care: Pap Smear     | Categ |
| 3    | S3PAPSM  | s3papsm: w3 S Prev Care: Pap Smear     | Categ |
| 4    | S4PAPSM  | s4papsm: w4 S Prev Care: Pap Smear     | Categ |
| 5    | S5PAPSM  | s5papsm: w5 S Prev Care: Pap Smear     | Categ |
| 1    | R1PROST  | r1prost: w1 R Prev Care: Prostate      | Categ |
| 2    | R2PROST  | r2prost: w2 R Prev Care: Prostate      | Categ |
| 3    | R3PROST  | r3prost: w3 R Prev Care: Prostate      | Categ |

|   |         |                                   |       |
|---|---------|-----------------------------------|-------|
| 4 | R4PROST | r4prost: w4 R Prev Care: Prostate | Categ |
| 5 | R5PROST | r5prost: w5 R Prev Care: Prostate | Categ |
| 1 | S1PROST | s1prost: w1 S Prev Care: Prostate | Categ |
| 2 | S2PROST | s2prost: w2 S Prev Care: Prostate | Categ |
| 3 | S3PROST | s3prost: w3 S Prev Care: Prostate | Categ |
| 4 | S4PROST | s4prost: w4 S Prev Care: Prostate | Categ |
| 5 | S5PROST | s5prost: w5 S Prev Care: Prostate | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1CHOLST | 14076 | 0.52 | 0.50    | 0.00    | 1.00    |
| R2CHOLST | 12474 | 0.54 | 0.50    | 0.00    | 1.00    |
| R3CHOLST | 14413 | 0.69 | 0.46    | 0.00    | 1.00    |
| R4CHOLST | 14749 | 0.70 | 0.46    | 0.00    | 1.00    |
| R5CHOLST | 17069 | 0.66 | 0.47    | 0.00    | 1.00    |
| S1CHOLST | 9937  | 0.51 | 0.50    | 0.00    | 1.00    |
| S2CHOLST | 8707  | 0.54 | 0.50    | 0.00    | 1.00    |
| S3CHOLST | 9846  | 0.69 | 0.46    | 0.00    | 1.00    |
| S4CHOLST | 9636  | 0.69 | 0.46    | 0.00    | 1.00    |
| S5CHOLST | 7620  | 0.67 | 0.47    | 0.00    | 1.00    |
| R3FLUSHT | 14386 | 0.60 | 0.49    | 0.00    | 1.00    |
| R4FLUSHT | 14703 | 0.60 | 0.49    | 0.00    | 1.00    |
| R5FLUSHT | 17050 | 0.54 | 0.50    | 0.00    | 1.00    |
| S3FLUSHT | 9830  | 0.60 | 0.49    | 0.00    | 1.00    |
| S4FLUSHT | 9618  | 0.60 | 0.49    | 0.00    | 1.00    |
| S5FLUSHT | 7613  | 0.57 | 0.50    | 0.00    | 1.00    |
| R1BREAST | 8163  | 0.39 | 0.49    | 0.00    | 1.00    |
| R2BREAST | 7341  | 0.43 | 0.49    | 0.00    | 1.00    |
| R3BREAST | 8461  | 0.61 | 0.49    | 0.00    | 1.00    |
| R4BREAST | 8103  | 0.59 | 0.49    | 0.00    | 1.00    |
| R5BREAST | 9195  | 0.62 | 0.49    | 0.00    | 1.00    |
| S1BREAST | 5094  | 0.41 | 0.49    | 0.00    | 1.00    |
| S2BREAST | 4502  | 0.46 | 0.50    | 0.00    | 1.00    |
| S3BREAST | 5024  | 0.65 | 0.48    | 0.00    | 1.00    |
| S4BREAST | 4624  | 0.63 | 0.48    | 0.00    | 1.00    |
| S5BREAST | 3592  | 0.63 | 0.48    | 0.00    | 1.00    |
| R1MAMMOG | 8152  | 0.21 | 0.41    | 0.00    | 1.00    |
| R2MAMMOG | 7340  | 0.24 | 0.42    | 0.00    | 1.00    |
| R3MAMMOG | 8460  | 0.52 | 0.50    | 0.00    | 1.00    |
| R4MAMMOG | 8101  | 0.54 | 0.50    | 0.00    | 1.00    |
| R5MAMMOG | 9198  | 0.54 | 0.50    | 0.00    | 1.00    |
| S1MAMMOG | 5093  | 0.23 | 0.42    | 0.00    | 1.00    |
| S2MAMMOG | 4503  | 0.24 | 0.43    | 0.00    | 1.00    |
| S3MAMMOG | 5023  | 0.55 | 0.50    | 0.00    | 1.00    |
| S4MAMMOG | 4622  | 0.59 | 0.49    | 0.00    | 1.00    |
| S5MAMMOG | 3595  | 0.56 | 0.50    | 0.00    | 1.00    |
| R1PAPSM  | 8083  | 0.65 | 0.48    | 0.00    | 1.00    |
| R2PAPSM  | 7310  | 0.63 | 0.48    | 0.00    | 1.00    |
| R3PAPSM  | 8349  | 0.70 | 0.46    | 0.00    | 1.00    |
| R4PAPSM  | 7958  | 0.65 | 0.48    | 0.00    | 1.00    |
| R5PAPSM  | 9185  | 0.58 | 0.49    | 0.00    | 1.00    |
| S1PAPSM  | 5047  | 0.68 | 0.46    | 0.00    | 1.00    |

|         |      |      |      |      |      |
|---------|------|------|------|------|------|
| S2PAPSM | 4485 | 0.68 | 0.47 | 0.00 | 1.00 |
| S3PAPSM | 4968 | 0.76 | 0.43 | 0.00 | 1.00 |
| S4PAPSM | 4553 | 0.72 | 0.45 | 0.00 | 1.00 |
| S5PAPSM | 3591 | 0.60 | 0.49 | 0.00 | 1.00 |
| R1PROST | 5756 | 0.17 | 0.38 | 0.00 | 1.00 |
| R2PROST | 4988 | 0.21 | 0.41 | 0.00 | 1.00 |
| R3PROST | 5886 | 0.31 | 0.46 | 0.00 | 1.00 |
| R4PROST | 5620 | 0.31 | 0.46 | 0.00 | 1.00 |
| R5PROST | 6402 | 0.29 | 0.45 | 0.00 | 1.00 |
| S1PROST | 4718 | 0.17 | 0.38 | 0.00 | 1.00 |
| S2PROST | 4099 | 0.22 | 0.41 | 0.00 | 1.00 |
| S3PROST | 4777 | 0.32 | 0.47 | 0.00 | 1.00 |
| S4PROST | 4469 | 0.32 | 0.47 | 0.00 | 1.00 |
| S5PROST | 3370 | 0.32 | 0.47 | 0.00 | 1.00 |

## Categorical Variable Codes

| Value-----                    | R1CHOLST | R2CHOLST | R3CHOLST | R4CHOLST | R5CHOLST |
|-------------------------------|----------|----------|----------|----------|----------|
| .d:DK                         | 58       | 50       | 32       | 15       | 16       |
| .m:Missing                    | 4        |          |          | 2        |          |
| .p:Proxy interview, not asked | 1032     | 1178     | 1275     | 11       | 18       |
| .r:Refuse                     | 16       | 2        | 3        | 2        | 11       |
| 0.No                          | 6714     | 5779     | 4463     | 4490     | 5800     |
| 1.Yes                         | 7362     | 6695     | 9950     | 10259    | 11269    |

| Value-----                    | S1CHOLST | S2CHOLST | S3CHOLST | S4CHOLST | S5CHOLST |
|-------------------------------|----------|----------|----------|----------|----------|
| .d:DK                         | 35       | 35       | 19       | 8        | 8        |
| .m:Missing                    | 3        |          |          |          |          |
| .p:Proxy interview, not asked | 660      | 821      | 726      | 6        | 9        |
| .r:Refuse                     | 13       | 1        | 1        | 2        | 1        |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| 0.No                          | 4831     | 4023     | 3036     | 2940     | 2496     |
| 1.Yes                         | 5106     | 4684     | 6810     | 6696     | 5124     |

| Value-----                    | R3FLUSHT | R4FLUSHT | R5FLUSHT |
|-------------------------------|----------|----------|----------|
| .d:DK                         | 58       | 35       | 21       |
| .m:Missing                    |          | 2        |          |
| .p:Proxy interview, not asked | 1275     | 37       | 36       |
| .r:Refuse                     | 4        | 2        | 7        |
| 0.No                          | 5751     | 5881     | 7758     |
| 1.Yes                         | 8635     | 8822     | 9292     |

| Value-----                    | S3FLUSHT | S4FLUSHT | S5FLUSHT |
|-------------------------------|----------|----------|----------|
| .d:DK                         | 33       | 18       | 10       |
| .p:Proxy interview, not asked | 726      | 16       | 13       |
| .r:Refuse                     | 3        |          | 2        |
| .u:Unmar                      | 4782     | 4847     | 5227     |
| .v:SP NR                      | 349      | 280      | 501      |
| 0.No                          | 3957     | 3866     | 3287     |
| 1.Yes                         | 5873     | 5752     | 4326     |

| Value-----                    | R1BREAST | R2BREAST | R3BREAST | R4BREAST | R5BREAST |
|-------------------------------|----------|----------|----------|----------|----------|
| .d:DK                         | 12       | 4        | 5        | 8        | 18       |
| .m:Missing                    | 72       | 15       | 5        | 1        |          |
| .p:Proxy interview, not asked | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     | 24       | 9        | 10       | 2        | 17       |
| .x:does not have (organ)      | 5883     | 5157     | 5967     | 5736     | 6556     |
| 0.No                          | 4993     | 4218     | 3260     | 3353     | 3537     |
| 1.Yes                         | 3170     | 3123     | 5201     | 4750     | 5658     |

| Value-----                    | S1BREAST | S2BREAST | S3BREAST | S4BREAST | S5BREAST |
|-------------------------------|----------|----------|----------|----------|----------|
| .d:DK                         | 8        | 2        | 1        | 3        | 11       |
| .m:Missing                    | 46       | 9        | 4        |          |          |
| .p:Proxy interview, not asked | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     | 15       | 7        | 5        | 1        | 8        |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |



|                               |  |          |          |          |          |          |
|-------------------------------|--|----------|----------|----------|----------|----------|
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |
| .x:does not have (organ)      |  | 4825     | 4223     | 4832     | 4554     | 3464     |
| 0.No                          |  | 3009     | 2430     | 1740     | 1699     | 1347     |
| 1.Yes                         |  | 2085     | 2072     | 3284     | 2925     | 2245     |
| Value-----                    |  | R1MAMMOG | R2MAMMOG | R3MAMMOG | R4MAMMOG | R5MAMMOG |
| .d:DK                         |  | 18       | 10       | 5        | 7        | 16       |
| .m:Missing                    |  | 72       | 15       | 5        | 1        |          |
| .p:Proxy interview, not asked |  | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 31       | 5        | 10       | 2        | 16       |
| .x:does not have (organ)      |  | 5881     | 5156     | 5968     | 5739     | 6556     |
| 0.No                          |  | 6412     | 5614     | 4091     | 3753     | 4240     |
| 1.Yes                         |  | 1740     | 1726     | 4369     | 4348     | 4958     |
| Value-----                    |  | S1MAMMOG | S2MAMMOG | S3MAMMOG | S4MAMMOG | S5MAMMOG |
| .d:DK                         |  | 8        | 4        | 2        | 3        | 11       |
| .m:Missing                    |  | 46       | 9        | 4        |          |          |
| .p:Proxy interview, not asked |  | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     |  | 18       | 4        | 4        | 2        | 5        |
| .u:Unmar                      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |
| .x:does not have (organ)      |  | 4823     | 4223     | 4833     | 4555     | 3464     |
| 0.No                          |  | 3945     | 3412     | 2275     | 1905     | 1579     |
| 1.Yes                         |  | 1148     | 1091     | 2748     | 2717     | 2016     |
| Value-----                    |  | R1PAPSM  | R2PAPSM  | R3PAPSM  | R4PAPSM  | R5PAPSM  |
| .d:DK                         |  | 14       | 7        | 4        | 11       | 19       |
| .m:Missing                    |  | 72       | 15       | 5        | 2        |          |
| .p:Proxy interview, not asked |  | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 29       | 4        | 11       | 1        | 26       |
| .x:does not have (organ)      |  | 5956     | 5190     | 6079     | 5878     | 6556     |
| 0.No                          |  | 2855     | 2707     | 2504     | 2793     | 3826     |
| 1.Yes                         |  | 5228     | 4603     | 5845     | 5165     | 5359     |
| Value-----                    |  | S1PAPSM  | S2PAPSM  | S3PAPSM  | S4PAPSM  | S5PAPSM  |
| .d:DK                         |  | 7        | 3        | 2        | 3        | 11       |
| .m:Missing                    |  | 46       | 9        | 4        |          |          |
| .p:Proxy interview, not asked |  | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     |  | 16       | 3        | 4        | 1        | 9        |
| .u:Unmar                      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |
| .x:does not have (organ)      |  | 4872     | 4243     | 4888     | 4625     | 3464     |
| 0.No                          |  | 1591     | 1418     | 1179     | 1285     | 1430     |
| 1.Yes                         |  | 3456     | 3067     | 3789     | 3268     | 2161     |
| Value-----                    |  | R1PROST  | R2PROST  | R3PROST  | R4PROST  | R5PROST  |
| .d:DK                         |  | 17       | 23       | 14       | 14       | 14       |
| .m:Missing                    |  | 62       | 21       |          | 2        |          |
| .p:Proxy interview, not asked |  | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 16       | 3        | 3        | 2        | 11       |
| .x:does not have (organ)      |  | 8303     | 7491     | 8545     | 8212     | 9359     |
| 0.No                          |  | 4773     | 3931     | 4040     | 3861     | 4548     |
| 1.Yes                         |  | 983      | 1057     | 1846     | 1759     | 1854     |
| Value-----                    |  | S1PROST  | S2PROST  | S3PROST  | S4PROST  | S5PROST  |
| .d:DK                         |  | 13       | 15       | 13       | 10       | 5        |
| .m:Missing                    |  | 48       | 13       |          | 1        |          |
| .p:Proxy interview, not asked |  | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     |  | 14       | 3        | 3        | 1        | 6        |
| .u:Unmar                      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |
| .x:does not have (organ)      |  | 5195     | 4613     | 5073     | 4701     | 3694     |
| 0.No                          |  | 3894     | 3199     | 3260     | 3051     | 2283     |
| 1.Yes                         |  | 824      | 900      | 1517     | 1418     | 1087     |

## How Constructed

RwCHOLST, RwFLUSHT, RwBREAST, RwMAMMOG, RwPAPSM, and RwPROST indicate whether the respondent reports preventative health tests and procedures in the last two years. The tests and procedures are: blood test for cholesterol, a flu vaccine (flu shot), monthly self-checks for breast lumps, mammogram or x-ray to

check for breast cancer, pap smear to check for uterine cancer, and rectal exam or blood test to screen for prostate cancer, respectively. RwFLUSHT is only available starting in Wave 3.

RwCHOLST, RwFLUSHT, RwBREAST, RwMAMMOG, RwPAPSM, and RwPROST are assigned a value of 0 if the respondent has not had the preventative test or procedure in the last two years, and are assigned a value of 1 if the respondent has had the preventative test or procedure in the last two years. RwBREAST, RwMAMMOG and RwPROST are also assigned .x if the respondent reports "does not have (the organ)". RwBREAST and RwMAMMOG are assigned .x to indicate that these questions were skipped for respondents who are men or reported not having the organ. RwPROST is assigned .x to indicate that this question was skipped for respondents who are women or reported not having the organ. RwCHOLST, RwFLUSHT, RwBREAST, RwMAMMOG, RwPAPSM, and RwPROST are assigned special missing values .d, .r, .m, if the respondent answer don't know, refused, or answers are missing, respectively. These variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwCHOLST, SwFLUSHT, SwBREAST, SwMAMMOG, SwPAPSM, and SwPROST are these measures for the respondent's spouse and are taken directly from the spouse's RwCHOLST, RwFLUSHT, RwBREAST, RwMAMMOG, RwPAPSM, and RwPROST variables. In addition to the special missing codes used in RwCHOLST, RwFLUSHT, RwBREAST, RwMAMMOG, RwPAPSM, and RwPROST; SwCHOLST, SwFLUSHT, SwBREAST, SwMAMMOG, SwPAPSM, and SwPROST also use the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Questions about flu shots are asked starting in Wave 3.

## Differences with the RAND HRS/Harmonized HRS

No differences known.

## MHAS Variables Used

### Wave 1:

|      |               |
|------|---------------|
| C51B | blood test    |
| C51F | breasts test  |
| C51G | mammogram     |
| C51H | pap smear     |
| C51I | prostate exam |

### Wave 2:

|      |                                       |
|------|---------------------------------------|
| C48B | cholesterol test                      |
| C48F | examine breasts for lumps             |
| C48G | mammogram                             |
| C48H | pap smear                             |
| C48I | tested for prostate cancer since 2001 |

### Wave 3:

|         |  |
|---------|--|
| C48B_12 | Last 2 years: Respondent had cholesterol blood test    |
| C48F_12 | Last 2 years: Respondent had flu vaccine               |
| C48H_12 | Last 2 years: Respondent performed self-breast exam    |
| C48I_12 | Last 2 years: Respondent had a mammogram/X-ray         |
| C48J_12 | Last 2 years: Respondent had a pap smear               |
| C48K_12 | Last 2 years: Respondent had prostate cancer screening |

### Wave 4:

|         |   |
|---------|---|
| C48B_15 | In the last 2 years: Respondent had a cholesterol blood |
| C48F_15 | In the last 2 years: Respondent had a flu vaccine       |
| C48H_15 | In the last 2 years: Respondent did a self-breast exam  |
| C48J_15 | In the last 2 years: Respondent had a pap smear         |
| C48M_15 | In the last 2 years: Respondent had a prostate cancer s |

### Wave 5:

|         |   |
|---------|---|
| C48B_18 | In the last 2 years: R had a cholesterol blood test |
| C48F_18 | In the last 2 years: R had a flu vaccine            |
| C48H_18 | In the last 2 years: R did a self-breast exam       |
| C48J_18 | In the last 2 years: R had a pap smear              |
| C48L_18 | Has R had a hysterectomy                            |

C48M\_18                    In the last 2 years: R had a prostate cancer screening

**Section C: Health Care Utilization and Insurance**

Medical Care Utilization: Hospital

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 1    | R1HOSP1Y   | r1hosply: w1 R Hospital stay, previous 12 months     | Categ |
| 2    | R2HOSP1Y   | r2hosply: w2 R Hospital stay, previous 12 months     | Categ |
| 3    | R3HOSP1Y   | r3hosply: w3 R Hospital stay, previous 12 months     | Categ |
| 4    | R4HOSP1Y   | r4hosply: w4 R Hospital stay, previous 12 months     | Categ |
| 5    | R5HOSP1Y   | r5hosply: w5 R Hospital stay, previous 12 months     | Categ |
| 1    | S1HOSP1Y   | s1hosply: w1 S Hospital stay, previous 12 months     | Categ |
| 2    | S2HOSP1Y   | s2hosply: w2 S Hospital stay, previous 12 months     | Categ |
| 3    | S3HOSP1Y   | s3hosply: w3 S Hospital stay, previous 12 months     | Categ |
| 4    | S4HOSP1Y   | s4hosply: w4 S Hospital stay, previous 12 months     | Categ |
| 5    | S5HOSP1Y   | s5hosply: w5 S Hospital stay, previous 12 months     | Categ |
| 1    | R1HSPNIT1Y | r1hspnitly: w1 R Hospital nights, previous 12 months | Cont  |
| 2    | R2HSPNIT1Y | r2hspnitly: w2 R Hospital nights, previous 12 months | Cont  |
| 3    | R3HSPNIT1Y | r3hspnitly: w3 R Hospital nights, previous 12 months | Cont  |
| 4    | R4HSPNIT1Y | r4hspnitly: w4 R Hospital nights, previous 12 months | Cont  |
| 5    | R5HSPNIT1Y | r5hspnitly: w5 R Hospital nights, previous 12 months | Cont  |
| 1    | S1HSPNIT1Y | s1hspnitly: w1 S Hospital nights, previous 12 months | Cont  |
| 2    | S2HSPNIT1Y | s2hspnitly: w2 S Hospital nights, previous 12 months | Cont  |
| 3    | S3HSPNIT1Y | s3hspnitly: w3 S Hospital nights, previous 12 months | Cont  |
| 4    | S4HSPNIT1Y | s4hspnitly: w4 S Hospital nights, previous 12 months | Cont  |
| 5    | S5HSPNIT1Y | s5hspnitly: w5 S Hospital nights, previous 12 months | Cont  |

Descriptive Statistics

| Variable   | N     | Mean | Std Dev | Minimum | Maximum |
|------------|-------|------|---------|---------|---------|
| R1HOSP1Y   | 15150 | 0.10 | 0.30    | 0.00    | 1.00    |
| R2HOSP1Y   | 13695 | 0.11 | 0.32    | 0.00    | 1.00    |
| R3HOSP1Y   | 15709 | 0.11 | 0.32    | 0.00    | 1.00    |
| R4HOSP1Y   | 14753 | 0.14 | 0.35    | 0.00    | 1.00    |
| R5HOSP1Y   | 17046 | 0.14 | 0.34    | 0.00    | 1.00    |
| S1HOSP1Y   | 10624 | 0.09 | 0.29    | 0.00    | 1.00    |
| S2HOSP1Y   | 9560  | 0.11 | 0.31    | 0.00    | 1.00    |
| S3HOSP1Y   | 10584 | 0.11 | 0.31    | 0.00    | 1.00    |
| S4HOSP1Y   | 9644  | 0.13 | 0.34    | 0.00    | 1.00    |
| S5HOSP1Y   | 7598  | 0.14 | 0.35    | 0.00    | 1.00    |
| R1HSPNIT1Y | 15150 | 0.78 | 5.41    | 0.00    | 246.00  |
| R2HSPNIT1Y | 13695 | 0.94 | 6.89    | 0.00    | 365.00  |
| R3HSPNIT1Y | 15709 | 0.83 | 5.59    | 0.00    | 240.00  |
| R4HSPNIT1Y | 14753 | 0.98 | 5.57    | 0.00    | 240.00  |
| R5HSPNIT1Y | 17046 | 0.97 | 5.51    | 0.00    | 200.00  |
| S1HSPNIT1Y | 10624 | 0.71 | 4.89    | 0.00    | 150.00  |
| S2HSPNIT1Y | 9560  | 0.89 | 6.25    | 0.00    | 365.00  |
| S3HSPNIT1Y | 10584 | 0.78 | 5.56    | 0.00    | 240.00  |
| S4HSPNIT1Y | 9644  | 0.93 | 5.64    | 0.00    | 240.00  |
| S5HSPNIT1Y | 7598  | 0.99 | 5.03    | 0.00    | 120.00  |

Categorical Variable Codes

| Value----- | R1HOSP1Y | R2HOSP1Y | R3HOSP1Y | R4HOSP1Y | R5HOSP1Y |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 14       | 6        | 13       | 10       | 18       |
| .m:Missing | 10       | 3        |          | 16       |          |
| .r:Refuse  | 12       |          | 1        |          | 50       |

|            |  |          |          |          |          |          |
|------------|--|----------|----------|----------|----------|----------|
| 0.No       |  | 13681    | 12147    | 13920    | 12698    | 14714    |
| 1.Yes      |  | 1469     | 1548     | 1789     | 2055     | 2332     |
| Value----- |  | S1HOSP1Y | S2HOSP1Y | S3HOSP1Y | S4HOSP1Y | S5HOSP1Y |
| .d:DK      |  | 8        | 2        | 8        | 6        | 7        |
| .m:Missing |  | 5        | 2        |          | 2        |          |
| .r:Refuse  |  | 11       |          |          |          | 33       |
| .u:Unmar   |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR   |  | 333      | 131      | 349      | 280      | 501      |
| 0.No       |  | 9664     | 8548     | 9462     | 8383     | 6505     |
| 1.Yes      |  | 960      | 1012     | 1122     | 1261     | 1093     |

How Constructed

RwHOSP1Y indicates whether the respondent reports at least one overnight hospital stay in the last 12 months. RwHOSP1Y is coded as 0 if the respondent had no overnight hospital stays, and is coded as 1 if the respondent had at least one overnight hospital stay. If the respondent reports any overnight hospital stay, RwhSPNIT1Y is the reported total number of nights over all hospital stays, in the last 12 months. RwhSPNIT1Y is set to 0 if the respondent reports no overnight hospital stays in the past 12 months. RwHOSP1Y and RwhSPNIT1Y are assigned special missing values .d or .r, if they answered don't know or refused, respectively. Other missing responses are assigned special missing value .m. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwHOSP1Y and SwHSPNIT1Y are taken from the Wave 'w' spouse's value for RwHOSP1Y and RwhSPNIT1Y. In addition to the special missing codes used in RwhOSP1Y and RwhSPNIT1Y, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

In RAND HRS, the reference period changes across waves from "12 months", to "the last interview", or "the last 2 years" for new interviewees. However, in the MHAS the reference period, "the past year", is used consistently across waves.

MHAS Variables Used

|         |  |
|---------|--|
| Wave 1: |  |
| D4      | nights in hospital                               |
| Wave 2: |  |
| D11     | how many nights spent hospitalized               |
| Wave 3: |  |
| D4_12   | Past year: Number of overnight stays in hospital |
| Wave 4: |  |
| D4_15   | Past year: Number of overnight stays in hospital |
| Wave 5: |  |
| D4_18   | Past year: Number of overnight stays in hospital |

Medical Care Utilization: Doctor

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 1    | R1DOCTOR1Y | r1doctorly: w1 R Doctor visits, previous 12 months   | Categ |
| 2    | R2DOCTOR1Y | r2doctorly: w2 R Doctor visits, previous 12 months   | Categ |
| 3    | R3DOCTOR1Y | r3doctorly: w3 R Doctor visits, previous 12 months   | Categ |
| 4    | R4DOCTOR1Y | r4doctorly: w4 R Doctor visits, previous 12 months   | Categ |
| 5    | R5DOCTOR1Y | r5doctorly: w5 R Doctor visits, previous 12 months   | Categ |
| 1    | S1DOCTOR1Y | s1doctorly: w1 S Doctor visits, previous 12 months   | Categ |
| 2    | S2DOCTOR1Y | s2doctorly: w2 S Doctor visits, previous 12 months   | Categ |
| 3    | S3DOCTOR1Y | s3doctorly: w3 S Doctor visits, previous 12 months   | Categ |
| 4    | S4DOCTOR1Y | s4doctorly: w4 S Doctor visits, previous 12 months   | Categ |
| 5    | S5DOCTOR1Y | s5doctorly: w5 S Doctor visits, previous 12 months   | Categ |
| 1    | R1DOCTIM1Y | r1doctimly: w1 R # Doctor visits, previous 12 months | Cont  |
| 2    | R2DOCTIM1Y | r2doctimly: w2 R # Doctor visits, previous 12 months | Cont  |
| 3    | R3DOCTIM1Y | r3doctimly: w3 R # Doctor visits, previous 12 months | Cont  |
| 4    | R4DOCTIM1Y | r4doctimly: w4 R # Doctor visits, previous 12 months | Cont  |
| 5    | R5DOCTIM1Y | r5doctimly: w5 R # Doctor visits, previous 12 months | Cont  |
| 1    | S1DOCTIM1Y | s1doctimly: w1 S # Doctor visits, previous 12 months | Cont  |
| 2    | S2DOCTIM1Y | s2doctimly: w2 S # Doctor visits, previous 12 months | Cont  |
| 3    | S3DOCTIM1Y | s3doctimly: w3 S # Doctor visits, previous 12 months | Cont  |
| 4    | S4DOCTIM1Y | s4doctimly: w4 S # Doctor visits, previous 12 months | Cont  |
| 5    | S5DOCTIM1Y | s5doctimly: w5 S # Doctor visits, previous 12 months | Cont  |

Descriptive Statistics

| Variable   | N     | Mean | Std Dev | Minimum | Maximum |
|------------|-------|------|---------|---------|---------|
| R1DOCTOR1Y | 15119 | 0.64 | 0.48    | 0.00    | 1.00    |
| R2DOCTOR1Y | 13655 | 0.66 | 0.47    | 0.00    | 1.00    |
| R3DOCTOR1Y | 15693 | 0.73 | 0.44    | 0.00    | 1.00    |
| R4DOCTOR1Y | 14750 | 0.80 | 0.40    | 0.00    | 1.00    |
| R5DOCTOR1Y | 17031 | 0.72 | 0.45    | 0.00    | 1.00    |
| S1DOCTOR1Y | 10604 | 0.63 | 0.48    | 0.00    | 1.00    |
| S2DOCTOR1Y | 9540  | 0.66 | 0.47    | 0.00    | 1.00    |
| S3DOCTOR1Y | 10574 | 0.72 | 0.45    | 0.00    | 1.00    |
| S4DOCTOR1Y | 9646  | 0.79 | 0.41    | 0.00    | 1.00    |
| S5DOCTOR1Y | 7592  | 0.74 | 0.44    | 0.00    | 1.00    |
| R1DOCTIM1Y | 15119 | 4.21 | 7.99    | 0.00    | 365.00  |
| R2DOCTIM1Y | 13655 | 4.58 | 7.05    | 0.00    | 210.00  |
| R3DOCTIM1Y | 15693 | 5.45 | 6.84    | 0.00    | 199.00  |
| R4DOCTIM1Y | 14750 | 6.26 | 8.24    | 0.00    | 240.00  |
| R5DOCTIM1Y | 17031 | 5.42 | 8.52    | 0.00    | 365.00  |
| S1DOCTIM1Y | 10604 | 4.06 | 8.05    | 0.00    | 365.00  |
| S2DOCTIM1Y | 9540  | 4.47 | 6.92    | 0.00    | 120.00  |
| S3DOCTIM1Y | 10574 | 5.21 | 6.39    | 0.00    | 144.00  |
| S4DOCTIM1Y | 9646  | 6.10 | 8.44    | 0.00    | 200.00  |
| S5DOCTIM1Y | 7592  | 5.72 | 7.19    | 0.00    | 250.00  |

Categorical Variable Codes

| Value----- | R1DOCTOR1Y | R2DOCTOR1Y | R3DOCTOR1Y | R4DOCTOR1Y | R5DOCTOR1Y |
|------------|------------|------------|------------|------------|------------|
| .d:DK      | 46         | 46         | 29         | 13         | 26         |
| .m:Missing | 10         | 3          |            | 16         |            |
| .r:Refuse  | 11         |            | 1          |            | 57         |

|            |  |            |            |            |            |            |
|------------|--|------------|------------|------------|------------|------------|
| 0.No       |  | 5415       | 4592       | 4237       | 2998       | 4744       |
| 1.Yes      |  | 9704       | 9063       | 11456      | 11752      | 12287      |
| Value----- |  | S1DOCTOR1Y | S2DOCTOR1Y | S3DOCTOR1Y | S4DOCTOR1Y | S5DOCTOR1Y |
| .d:DK      |  | 32         | 22         | 17         | 4          | 11         |
| .m:Missing |  | 5          | 2          |            | 2          |            |
| .r:Refuse  |  | 7          |            | 1          |            | 35         |
| .u:Unmar   |  | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR   |  | 333        | 131        | 349        | 280        | 501        |
| 0.No       |  | 3911       | 3277       | 2948       | 2021       | 1987       |
| 1.Yes      |  | 6693       | 6263       | 7626       | 7625       | 5605       |

How Constructed

RwDOCTOR1Y indicates whether the respondent reports at least one doctor visit in the last 12 months. RwDOCTOR1Y is coded as 0 if the respondent had no doctor visits, and is coded as 1 if the respondent had one or more doctor visits. If the respondent reports any doctor visits, RwDOCTIM1Y is the reported number of visits in the last 12 months. RwDOCTIM1Y is set to 0 if the respondent reports no doctor visits in the past 12 months. RwDOCTOR1Y and RwDOCTIM1Y are assigned special missing values .d or .r, if they answered don't know or refused, respectively. Other missing responses are assigned special missing value .m. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwDOCTOR1Y and SwDOCTIM1Y are taken from the Wave 'w' spouse's values for RwDOCTOR1Y and RwDOCTIM1Y. In addition to the special missing codes used in RwDOCTOR and RwDOCTIM, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

In RAND HRS, the reference period changes across waves from "12 months", to "the last interview", or "the last 2 years" for new interviewees. However, in the MHAS the reference period "the past year", is used consistently across waves.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| D8_5    | medical visits  |
| Wave 2: |   |
| D15_4   | in the last year, how many times saw a doctor or medica |
| Wave 3: |   |
| D8_4_12 | Last year:respondent's frequency of consulting a physic |
| Wave 4: |   |
| D8_4_15 | Last year: Respondent's number of visits to a doctor or |
| Wave 5: |   |
| D8_3_18 | Last year: R's number of visits to a doctor or medical  |



|   |
|---|
| <b>Medical Care Utilization: Other Medical Care Utilization</b> |
|---|

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 1    | R1OUTPT1Y  | r1outptly: w1 R Outpatient surgery, previous 12 months | Categ |
| 2    | R2OUTPT1Y  | r2outptly: w2 R Outpatient surgery, previous 12 months | Categ |
| 3    | R3OUTPT1Y  | r3outptly: w3 R Outpatient surgery, previous 12 months | Categ |
| 4    | R4OUTPT1Y  | r4outptly: w4 R Outpatient surgery, previous 12 months | Categ |
| 5    | R5OUTPT1Y  | r5outptly: w5 R Outpatient surgery, previous 12 months | Categ |
| 1    | S1OUTPT1Y  | s1outptly: w1 S Outpatient surgery, previous 12 months | Categ |
| 2    | S2OUTPT1Y  | s2outptly: w2 S Outpatient surgery, previous 12 months | Categ |
| 3    | S3OUTPT1Y  | s3outptly: w3 S Outpatient surgery, previous 12 months | Categ |
| 4    | S4OUTPT1Y  | s4outptly: w4 S Outpatient surgery, previous 12 months | Categ |
| 5    | S5OUTPT1Y  | s5outptly: w5 S Outpatient surgery, previous 12 months | Categ |
| 1    | R1DENTST1Y | r1dentstly: w1 R Dental visits, previous 12 months     | Categ |
| 2    | R2DENTST1Y | r2dentstly: w2 R Dental visits, previous 12 months     | Categ |
| 3    | R3DENTST1Y | r3dentstly: w3 R Dental visits, previous 12 months     | Categ |
| 4    | R4DENTST1Y | r4dentstly: w4 R Dental visits, previous 12 months     | Categ |
| 5    | R5DENTST1Y | r5dentstly: w5 R Dental visits, previous 12 months     | Categ |
| 1    | S1DENTST1Y | s1dentstly: w1 S Dental visits, previous 12 months     | Categ |
| 2    | S2DENTST1Y | s2dentstly: w2 S Dental visits, previous 12 months     | Categ |
| 3    | S3DENTST1Y | s3dentstly: w3 S Dental visits, previous 12 months     | Categ |
| 4    | S4DENTST1Y | s4dentstly: w4 S Dental visits, previous 12 months     | Categ |
| 5    | S5DENTST1Y | s5dentstly: w5 S Dental visits, previous 12 months     | Categ |
| 1    | R1DENTIM1Y | r1dentimly: w1 R # Dental visits, previous 12 months   | Cont  |
| 2    | R2DENTIM1Y | r2dentimly: w2 R # Dental visits, previous 12 months   | Cont  |
| 3    | R3DENTIM1Y | r3dentimly: w3 R # Dental visits, previous 12 months   | Cont  |
| 4    | R4DENTIM1Y | r4dentimly: w4 R # Dental visits, previous 12 months   | Cont  |
| 5    | R5DENTIM1Y | r5dentimly: w5 R # Dental visits, previous 12 months   | Cont  |
| 1    | S1DENTIM1Y | s1dentimly: w1 S # Dental visits, previous 12 months   | Cont  |
| 2    | S2DENTIM1Y | s2dentimly: w2 S # Dental visits, previous 12 months   | Cont  |
| 3    | S3DENTIM1Y | s3dentimly: w3 S # Dental visits, previous 12 months   | Cont  |
| 4    | S4DENTIM1Y | s4dentimly: w4 S # Dental visits, previous 12 months   | Cont  |
| 5    | S5DENTIM1Y | s5dentimly: w5 S # Dental visits, previous 12 months   | Cont  |

### Descriptive Statistics

| Variable   | N     | Mean | Std Dev | Minimum | Maximum |
|------------|-------|------|---------|---------|---------|
| R1OUTPT1Y  | 15160 | 0.02 | 0.14    | 0.00    | 1.00    |
| R2OUTPT1Y  | 13698 | 0.03 | 0.16    | 0.00    | 1.00    |
| R3OUTPT1Y  | 15715 | 0.03 | 0.18    | 0.00    | 1.00    |
| R4OUTPT1Y  | 14760 | 0.04 | 0.21    | 0.00    | 1.00    |
| R5OUTPT1Y  | 17054 | 0.04 | 0.21    | 0.00    | 1.00    |
| S1OUTPT1Y  | 10633 | 0.02 | 0.14    | 0.00    | 1.00    |
| S2OUTPT1Y  | 9561  | 0.03 | 0.16    | 0.00    | 1.00    |
| S3OUTPT1Y  | 10585 | 0.03 | 0.18    | 0.00    | 1.00    |
| S4OUTPT1Y  | 9649  | 0.05 | 0.21    | 0.00    | 1.00    |
| S5OUTPT1Y  | 7599  | 0.04 | 0.21    | 0.00    | 1.00    |
| R1DENTST1Y | 15160 | 0.25 | 0.43    | 0.00    | 1.00    |
| R2DENTST1Y | 13689 | 0.26 | 0.44    | 0.00    | 1.00    |
| R3DENTST1Y | 15705 | 0.32 | 0.46    | 0.00    | 1.00    |
| R4DENTST1Y | 14752 | 0.36 | 0.48    | 0.00    | 1.00    |
| R5DENTST1Y | 17038 | 0.39 | 0.49    | 0.00    | 1.00    |

|            |       |      |      |      |        |
|------------|-------|------|------|------|--------|
| S1DENTST1Y | 10632 | 0.25 | 0.43 | 0.00 | 1.00   |
| S2DENTST1Y | 9555  | 0.27 | 0.44 | 0.00 | 1.00   |
| S3DENTST1Y | 10581 | 0.32 | 0.47 | 0.00 | 1.00   |
| S4DENTST1Y | 9646  | 0.37 | 0.48 | 0.00 | 1.00   |
| S5DENTST1Y | 7594  | 0.38 | 0.49 | 0.00 | 1.00   |
| R1DENTIM1Y | 15160 | 0.75 | 3.50 | 0.00 | 330.00 |
| R2DENTIM1Y | 13689 | 0.75 | 2.45 | 0.00 | 100.00 |
| R3DENTIM1Y | 15705 | 0.90 | 3.00 | 0.00 | 200.00 |
| R4DENTIM1Y | 14752 | 1.01 | 3.55 | 0.00 | 300.00 |
| R5DENTIM1Y | 17038 | 1.14 | 3.11 | 0.00 | 200.00 |
| S1DENTIM1Y | 10632 | 0.77 | 3.90 | 0.00 | 330.00 |
| S2DENTIM1Y | 9555  | 0.75 | 2.49 | 0.00 | 100.00 |
| S3DENTIM1Y | 10581 | 0.90 | 2.57 | 0.00 | 99.00  |
| S4DENTIM1Y | 9646  | 1.03 | 3.79 | 0.00 | 300.00 |
| S5DENTIM1Y | 7594  | 1.10 | 3.47 | 0.00 | 200.00 |

## Categorical Variable Codes

| Value----- | R1OUTPT1Y | R2OUTPT1Y | R3OUTPT1Y | R4OUTPT1Y | R5OUTPT1Y |
|------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK      | 7         | 3         | 7         | 3         | 8         |
| .m:Missing | 10        | 3         |           | 16        |           |
| .r:Refuse  | 9         |           | 1         |           | 52        |
| 0.No       | 14864     | 13328     | 15184     | 14103     | 16302     |
| 1.Yes      | 296       | 370       | 531       | 657       | 752       |

| Value----- | S1OUTPT1Y | S2OUTPT1Y | S3OUTPT1Y | S4OUTPT1Y | S5OUTPT1Y |
|------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK      | 6         | 1         | 6         | 1         | 4         |
| .m:Missing | 5         | 2         |           | 2         |           |
| .r:Refuse  | 4         |           | 1         |           | 35        |
| .u:Unmar   | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR   | 333       | 131       | 349       | 280       | 501       |
| 0.No       | 10435     | 9315      | 10234     | 9208      | 7263      |
| 1.Yes      | 198       | 246       | 351       | 441       | 336       |

| Value----- | R1DENTST1Y | R2DENTST1Y | R3DENTST1Y | R4DENTST1Y | R5DENTST1Y |
|------------|------------|------------|------------|------------|------------|
| .d:DK      | 11         | 12         | 17         | 11         | 26         |
| .m:Missing | 10         | 3          |            | 16         |            |
| .r:Refuse  | 5          |            | 1          |            | 50         |
| 0.No       | 11442      | 10111      | 10745      | 9458       | 10357      |
| 1.Yes      | 3718       | 3578       | 4960       | 5294       | 6681       |

| Value----- | S1DENTST1Y | S2DENTST1Y | S3DENTST1Y | S4DENTST1Y | S5DENTST1Y |
|------------|------------|------------|------------|------------|------------|
| .d:DK      | 8          | 7          | 11         | 4          | 11         |
| .m:Missing | 5          | 2          |            | 2          |            |
| .r:Refuse  | 3          |            |            |            | 33         |
| .u:Unmar   | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR   | 333        | 131        | 349        | 280        | 501        |
| 0.No       | 7944       | 7010       | 7171       | 6090       | 4677       |
| 1.Yes      | 2688       | 2545       | 3410       | 3556       | 2917       |

## How Constructed

RwOUTPT1Y and RwDENTST1Y indicate whether the respondent reports at least one outpatient surgery and dental visits in the last 12 months, respectively. RwOUTPT1Y and RwDENTST1Y are coded as 0 if the respondent had no outpatient surgeries or dental visits, respectively. They are coded as 1 if the respondent had at least one outpatient surgery and dental visit, respectively. If the respondent reports any dental visits, RwDENTIM1Y is the reported total number of dental visits in the last 12 months. RwDENTIM1Y is set to 0 if the respondent reports no dental visits in the past 12 months. RwOUTPT1Y, RwDENTST1Y, and RwDENTIM1Y are assigned special missing values .d or .r, if they answered don't know or refused, respectively. Other missing responses are assigned special missing value .m. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwOUTPT1Y, SwDENTST1Y, and SwDENTIM1Y are taken from the Wave 'w' spouse's value for RwOUTPT1Y, RwDENTST1Y, and RwDENTIM1Y. In addition to the special missing codes used in RwOUTPT1Y, RwDENTST1Y, and RwDENTIM1Y, if the respondent is not designated as coupled in the current wave and assumed to be single,

a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

In RAND HRS, the reference period changes across waves from "12 months", to "the last interview", or "the last 2 years" for new interviewees. However, in the MHAS the reference period "the past year", is used consistently across waves.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| D8_3    | dentist   |
| D8_4    | outpatient procedures                                   |
| Wave 2: |   |
| D15_2   | in the last year, how many times saw a dentist          |
| D15_3   | in the last year, how many times had surgical procedure |
| Wave 3: |   |
| D8_2_12 | Last year:respondent's number of dentist visit(s)       |
| D8_3_12 | Last year:respondent's number of outpatient procedures  |
| Wave 4: |   |
| D8_2_15 | Last year: Respondent's number of visits to a dentist   |
| D8_3_15 | Last year: Respondent's number of outpatient procedures |
| Wave 5: |   |
| D8_1_18 | Last year: R's number of visits to a dentist            |
| D8_2_18 | Last year: R's number of outpatient procedures          |

|  |
|--|
| <b>Medical Expenditures: Out of Pocket and Total</b> |
|--|

| Wave | Variable     | Label  | Type  |
|------|--------------|--|-------|
| 1    | R1OOPHOS1Y   | r1oophosly: w1 R Out of pocket hospital exp, previous 12 mon | Cont  |
| 2    | R2OOPHOS1Y   | r2oophosly: w2 R Out of pocket hospital exp, previous 12 mon | Cont  |
| 3    | R3OOPHOS1Y   | r3oophosly: w3 R Out of pocket hospital exp, previous 12 mon | Cont  |
| 4    | R4OOPHOS1Y   | r4oophosly: w4 R Out of pocket hospital exp, previous 12 mon | Cont  |
| 5    | R5OOPHOS1Y   | r5oophosly: w5 R Out of pocket hospital exp, previous 12 mon | Cont  |
| 1    | S1OOPHOS1Y   | s1oophosly: w1 S Out of pocket med hospital, previous 12 mon | Cont  |
| 2    | S2OOPHOS1Y   | s2oophosly: w2 S Out of pocket med hospital, previous 12 mon | Cont  |
| 3    | S3OOPHOS1Y   | s3oophosly: w3 S Out of pocket med hospital, previous 12 mon | Cont  |
| 4    | S4OOPHOS1Y   | s4oophosly: w4 S Out of pocket med hospital, previous 12 mon | Cont  |
| 5    | S5OOPHOS1Y   | s5oophosly: w5 S Out of pocket med hospital, previous 12 mon | Cont  |
| 1    | R1OOPHOSF1Y  | r1oophosfly: w1 R Out of pocket hospital exp imputed flag    | Categ |
| 2    | R2OOPHOSF1Y  | r2oophosfly: w2 R Out of pocket hospital exp imputed flag    | Categ |
| 3    | R3OOPHOSF1Y  | r3oophosfly: w3 R Out of pocket hospital exp imputed flag    | Categ |
| 4    | R4OOPHOSF1Y  | r4oophosfly: w4 R Out of pocket hospital exp imputed flag    | Categ |
| 5    | R5OOPHOSF1Y  | r5oophosfly: w5 R Out of pocket hospital exp imputed flag    | Categ |
| 1    | S1OOPHOSF1Y  | s1oophosfly: w1 S Out of pocket hospital exp imputed flag    | Categ |
| 2    | S2OOPHOSF1Y  | s2oophosfly: w2 S Out of pocket hospital exp imputed flag    | Categ |
| 3    | S3OOPHOSF1Y  | s3oophosfly: w3 S Out of pocket hospital exp imputed flag    | Categ |
| 4    | S4OOPHOSF1Y  | s4oophosfly: w4 S Out of pocket hospital exp imputed flag    | Categ |
| 5    | S5OOPHOSF1Y  | s5oophosfly: w5 S Out of pocket hospital exp imputed flag    | Categ |
| 1    | R1OOPFHHO1Y  | r1oopfhholy: w1 R Out of pocket folk healer/homeopath exp, p | Cont  |
| 2    | R2OOPFHHO1Y  | r2oopfhholy: w2 R Out of pocket folk healer/homeopath exp, p | Cont  |
| 3    | R3OOPFHHO1Y  | r3oopfhholy: w3 R Out of pocket folk healer/homeopath exp, p | Cont  |
| 4    | R4OOPFHHO1Y  | r4oopfhholy: w4 R Out of pocket folk healer/homeopath exp, p | Cont  |
| 1    | S1OOPFHHO1Y  | s1oopfhholy: w1 S Out of pocket folk healer/homeopath, previ | Cont  |
| 2    | S2OOPFHHO1Y  | s2oopfhholy: w2 S Out of pocket folk healer/homeopath, previ | Cont  |
| 3    | S3OOPFHHO1Y  | s3oopfhholy: w3 S Out of pocket folk healer/homeopath, previ | Cont  |
| 4    | S4OOPFHHO1Y  | s4oopfhholy: w4 S Out of pocket folk healer/homeopath, previ | Cont  |
| 1    | R1OOPFHHOF1Y | r1oopfhhofly: w1 R Out of pocket folk healer/homeopath exp i | Categ |
| 2    | R2OOPFHHOF1Y | r2oopfhhofly: w2 R Out of pocket folk healer/homeopath exp i | Categ |
| 3    | R3OOPFHHOF1Y | r3oopfhhofly: w3 R Out of pocket folk healer/homeopath exp i | Categ |
| 4    | R4OOPFHHOF1Y | r4oopfhhofly: w4 R Out of pocket folk healer/homeopath exp i | Categ |
| 1    | S1OOPFHHOF1Y | s1oopfhhofly: w1 S Out of pocket folk healer/homeopath exp i | Categ |
| 2    | S2OOPFHHOF1Y | s2oopfhhofly: w2 S Out of pocket folk healer/homeopath exp i | Categ |
| 3    | S3OOPFHHOF1Y | s3oopfhhofly: w3 S Out of pocket folk healer/homeopath exp i | Categ |
| 4    | S4OOPFHHOF1Y | s4oopfhhofly: w4 S Out of pocket folk healer/homeopath exp i | Categ |
| 1    | R1OOPDEN1Y   | r1oopdenly: w1 R Out of pocket dentist exp, previous 12 mont | Cont  |
| 2    | R2OOPDEN1Y   | r2oopdenly: w2 R Out of pocket dentist exp, previous 12 mont | Cont  |
| 3    | R3OOPDEN1Y   | r3oopdenly: w3 R Out of pocket dentist exp, previous 12 mont | Cont  |
| 4    | R4OOPDEN1Y   | r4oopdenly: w4 R Out of pocket dentist exp, previous 12 mont | Cont  |
| 5    | R5OOPDEN1Y   | r5oopdenly: w5 R Out of pocket dentist exp, previous 12 mont | Cont  |
| 1    | S1OOPDEN1Y   | s1oopdenly: w1 S Out of pocket dentist exp, previous 12 mont | Cont  |
| 2    | S2OOPDEN1Y   | s2oopdenly: w2 S Out of pocket dentist exp, previous 12 mont | Cont  |
| 3    | S3OOPDEN1Y   | s3oopdenly: w3 S Out of pocket dentist exp, previous 12 mont | Cont  |
| 4    | S4OOPDEN1Y   | s4oopdenly: w4 S Out of pocket dentist exp, previous 12 mont | Cont  |
| 5    | S5OOPDEN1Y   | s5oopdenly: w5 S Out of pocket dentist exp, previous 12 mont | Cont  |
| 1    | R1OOPDENF1Y  | r1oopdenfly: w1 R Out of pocket dentist exp imputed flag     | Categ |
| 2    | R2OOPDENF1Y  | r2oopdenfly: w2 R Out of pocket dentist exp imputed flag     | Categ |
| 3    | R3OOPDENF1Y  | r3oopdenfly: w3 R Out of pocket dentist exp imputed flag     | Categ |

|   |              |  |       |
|---|--------------|--|-------|
| 4 | R4OOPDENF1Y  | r4oopdenfly: w4 R Out of pocket dentist exp imputed flag     | Categ |
| 5 | R5OOPDENF1Y  | r5oopdenfly: w5 R Out of pocket dentist exp imputed flag     | Categ |
| 1 | S1OOPDENF1Y  | s1oopdenfly: w1 S Out of pocket dentist exp imputed flag     | Categ |
| 2 | S2OOPDENF1Y  | s2oopdenfly: w2 S Out of pocket dentist exp imputed flag     | Categ |
| 3 | S3OOPDENF1Y  | s3oopdenfly: w3 S Out of pocket dentist exp imputed flag     | Categ |
| 4 | S4OOPDENF1Y  | s4oopdenfly: w4 S Out of pocket dentist exp imputed flag     | Categ |
| 5 | S5OOPDENF1Y  | s5oopdenfly: w5 S Out of pocket dentist exp imputed flag     | Categ |
| 1 | R1OOPOSRG1Y  | r1ooposrgly: w1 R Out of pocket outpatient surgery exp, prev | Cont  |
| 2 | R2OOPOSRG1Y  | r2ooposrgly: w2 R Out of pocket outpatient surgery exp, prev | Cont  |
| 3 | R3OOPOSRG1Y  | r3ooposrgly: w3 R Out of pocket outpatient surgery exp, prev | Cont  |
| 4 | R4OOPOSRG1Y  | r4ooposrgly: w4 R Out of pocket outpatient surgery exp, prev | Cont  |
| 5 | R5OOPOSRG1Y  | r5ooposrgly: w5 R Out of pocket outpatient surgery exp, prev | Cont  |
| 1 | S1OOPOSRG1Y  | s1ooposrgly: w1 S Out of pocket outpatient surgery exp, prev | Cont  |
| 2 | S2OOPOSRG1Y  | s2ooposrgly: w2 S Out of pocket outpatient surgery exp, prev | Cont  |
| 3 | S3OOPOSRG1Y  | s3ooposrgly: w3 S Out of pocket outpatient surgery exp, prev | Cont  |
| 4 | S4OOPOSRG1Y  | s4ooposrgly: w4 S Out of pocket outpatient surgery exp, prev | Cont  |
| 5 | S5OOPOSRG1Y  | s5ooposrgly: w5 S Out of pocket outpatient surgery exp, prev | Cont  |
| 1 | R1OOPOSRGF1Y | r1ooposrgfly: w1 R Out of pocket outpatient surgery exp impu | Categ |
| 2 | R2OOPOSRGF1Y | r2ooposrgfly: w2 R Out of pocket outpatient surgery exp impu | Categ |
| 3 | R3OOPOSRGF1Y | r3ooposrgfly: w3 R Out of pocket outpatient surgery exp impu | Categ |
| 4 | R4OOPOSRGF1Y | r4ooposrgfly: w4 R Out of pocket outpatient surgery exp impu | Categ |
| 5 | R5OOPOSRGF1Y | r5ooposrgfly: w5 R Out of pocket outpatient surgery exp impu | Categ |
| 1 | S1OOPOSRGF1Y | s1ooposrgfly: w1 S Out of pocket outpatient surgery exp impu | Categ |
| 2 | S2OOPOSRGF1Y | s2ooposrgfly: w2 S Out of pocket outpatient surgery exp impu | Categ |
| 3 | S3OOPOSRGF1Y | s3ooposrgfly: w3 S Out of pocket outpatient surgery exp impu | Categ |
| 4 | S4OOPOSRGF1Y | s4ooposrgfly: w4 S Out of pocket outpatient surgery exp impu | Categ |
| 5 | S5OOPOSRGF1Y | s5ooposrgfly: w5 S Out of pocket outpatient surgery exp impu | Categ |
| 1 | R1OOPDOC1Y   | r1oopdocly: w1 R Out of pocket doctor exp, previous 12 month | Cont  |
| 2 | R2OOPDOC1Y   | r2oopdocly: w2 R Out of pocket doctor exp, previous 12 month | Cont  |
| 3 | R3OOPDOC1Y   | r3oopdocly: w3 R Out of pocket doctor exp, previous 12 month | Cont  |
| 4 | R4OOPDOC1Y   | r4oopdocly: w4 R Out of pocket doctor exp, previous 12 month | Cont  |
| 5 | R5OOPDOC1Y   | r5oopdocly: w5 R Out of pocket doctor exp, previous 12 month | Cont  |
| 1 | S1OOPDOC1Y   | s1oopdocly: w1 S Out of pocket doctor exp, previous 12 month | Cont  |
| 2 | S2OOPDOC1Y   | s2oopdocly: w2 S Out of pocket doctor exp, previous 12 month | Cont  |
| 3 | S3OOPDOC1Y   | s3oopdocly: w3 S Out of pocket doctor exp, previous 12 month | Cont  |
| 4 | S4OOPDOC1Y   | s4oopdocly: w4 S Out of pocket doctor exp, previous 12 month | Cont  |
| 5 | S5OOPDOC1Y   | s5oopdocly: w5 S Out of pocket doctor exp, previous 12 month | Cont  |
| 1 | R1OOPDOCF1Y  | r1oopdocfly: w1 R Out of pocket doctor exp imputed flag      | Categ |
| 2 | R2OOPDOCF1Y  | r2oopdocfly: w2 R Out of pocket doctor exp imputed flag      | Categ |
| 3 | R3OOPDOCF1Y  | r3oopdocfly: w3 R Out of pocket doctor exp imputed flag      | Categ |
| 4 | R4OOPDOCF1Y  | r4oopdocfly: w4 R Out of pocket doctor exp imputed flag      | Categ |
| 5 | R5OOPDOCF1Y  | r5oopdocfly: w5 R Out of pocket doctor exp imputed flag      | Categ |
| 1 | S1OOPDOCF1Y  | s1oopdocfly: w1 S Out of pocket doctor exp imputed flag      | Categ |
| 2 | S2OOPDOCF1Y  | s2oopdocfly: w2 S Out of pocket doctor exp imputed flag      | Categ |
| 3 | S3OOPDOCF1Y  | s3oopdocfly: w3 S Out of pocket doctor exp imputed flag      | Categ |
| 4 | S4OOPDOCF1Y  | s4oopdocfly: w4 S Out of pocket doctor exp imputed flag      | Categ |
| 5 | S5OOPDOCF1Y  | s5oopdocfly: w5 S Out of pocket doctor exp imputed flag      | Categ |
| 1 | R1OOPMD1Y    | r1oopmdly: w1 R Out of pocket med exp, previous 12 months    | Cont  |
| 2 | R2OOPMD1Y    | r2oopmdly: w2 R Out of pocket med exp, previous 12 months    | Cont  |
| 3 | R3OOPMD1Y    | r3oopmdly: w3 R Out of pocket med exp, previous 12 months    | Cont  |
| 4 | R4OOPMD1Y    | r4oopmdly: w4 R Out of pocket med exp, previous 12 months    | Cont  |
| 5 | R5OOPMD1Y    | r5oopmdly: w5 R Out of pocket med exp, previous 12 months    | Cont  |
| 1 | S1OOPMD1Y    | s1oopmdly: w1 S Out of pocket med exp, previous 12 months    | Cont  |

|   |            |   |       |
|---|------------|---|-------|
| 2 | S2OOPMD1Y  | s2oopmdly: w2 S Out of pocket med exp, previous 12 months | Cont  |
| 3 | S3OOPMD1Y  | s3oopmdly: w3 S Out of pocket med exp, previous 12 months | Cont  |
| 4 | S4OOPMD1Y  | s4oopmdly: w4 S Out of pocket med exp, previous 12 months | Cont  |
| 5 | S5OOPMD1Y  | s5oopmdly: w5 S Out of pocket med exp, previous 12 months | Cont  |
| 1 | R1OOPMDF1Y | rloopmdfly: w1 R Out of pocket med exp imputed flag       | Categ |
| 2 | R2OOPMDF1Y | r2oopmdfly: w2 R Out of pocket med exp imputed flag       | Categ |
| 3 | R3OOPMDF1Y | r3oopmdfly: w3 R Out of pocket med exp imputed flag       | Categ |
| 4 | R4OOPMDF1Y | r4oopmdfly: w4 R Out of pocket med exp imputed flag       | Categ |
| 5 | R5OOPMDF1Y | r5oopmdfly: w5 R Out of pocket med exp imputed flag       | Categ |
| 1 | S1OOPMDF1Y | sloopmdfly: w1 S Out of pocket med exp imputed flag       | Categ |
| 2 | S2OOPMDF1Y | s2oopmdfly: w2 S Out of pocket med exp imputed flag       | Categ |
| 3 | S3OOPMDF1Y | s3oopmdfly: w3 S Out of pocket med exp imputed flag       | Categ |
| 4 | S4OOPMDF1Y | s4oopmdfly: w4 S Out of pocket med exp imputed flag       | Categ |
| 5 | S5OOPMDF1Y | s5oopmdfly: w5 S Out of pocket med exp imputed flag       | Categ |

## Descriptive Statistics

| Variable     | N     | Mean    | Std Dev  | Minimum | Maximum   |
|--------------|-------|---------|----------|---------|-----------|
| R1OOPHOS1Y   | 15176 | 445.00  | 7045.10  | 0.00    | 500000.00 |
| R2OOPHOS1Y   | 13701 | 561.78  | 7227.74  | 0.00    | 500000.00 |
| R3OOPHOS1Y   | 15723 | 670.77  | 7042.17  | 0.00    | 300000.00 |
| R4OOPHOS1Y   | 14763 | 1301.86 | 12628.88 | 0.00    | 500000.00 |
| R5OOPHOS1Y   | 17114 | 1601.04 | 12876.59 | 0.00    | 350000.00 |
| S1OOPHOS1Y   | 10643 | 437.79  | 7992.32  | 0.00    | 500000.00 |
| S2OOPHOS1Y   | 9562  | 621.79  | 8216.53  | 0.00    | 500000.00 |
| S3OOPHOS1Y   | 10592 | 640.67  | 7167.39  | 0.00    | 300000.00 |
| S4OOPHOS1Y   | 9650  | 1173.81 | 12229.27 | 0.00    | 500000.00 |
| S5OOPHOS1Y   | 7638  | 1880.15 | 14304.68 | 0.00    | 350000.00 |
| R1OOPHOSF1Y  | 15176 | 0.01    | 0.09     | 0.00    | 1.00      |
| R2OOPHOSF1Y  | 13701 | 0.01    | 0.09     | 0.00    | 1.00      |
| R3OOPHOSF1Y  | 15723 | 0.01    | 0.08     | 0.00    | 1.00      |
| R4OOPHOSF1Y  | 14763 | 0.01    | 0.08     | 0.00    | 1.00      |
| R5OOPHOSF1Y  | 17114 | 0.01    | 0.11     | 0.00    | 1.00      |
| S1OOPHOSF1Y  | 10643 | 0.01    | 0.08     | 0.00    | 1.00      |
| S2OOPHOSF1Y  | 9562  | 0.01    | 0.08     | 0.00    | 1.00      |
| S3OOPHOSF1Y  | 10592 | 0.00    | 0.07     | 0.00    | 1.00      |
| S4OOPHOSF1Y  | 9650  | 0.01    | 0.08     | 0.00    | 1.00      |
| S5OOPHOSF1Y  | 7638  | 0.01    | 0.11     | 0.00    | 1.00      |
| R1OOPFHHO1Y  | 15176 | 53.25   | 703.94   | 0.00    | 60000.00  |
| R2OOPFHHO1Y  | 13701 | 49.84   | 447.76   | 0.00    | 25000.00  |
| R3OOPFHHO1Y  | 15723 | 53.48   | 472.74   | 0.00    | 24000.00  |
| R4OOPFHHO1Y  | 14763 | 66.01   | 656.87   | 0.00    | 40000.00  |
| S1OOPFHHO1Y  | 10643 | 53.90   | 758.10   | 0.00    | 60000.00  |
| S2OOPFHHO1Y  | 9562  | 52.23   | 489.68   | 0.00    | 25000.00  |
| S3OOPFHHO1Y  | 10592 | 50.93   | 466.17   | 0.00    | 24000.00  |
| S4OOPFHHO1Y  | 9650  | 69.88   | 739.53   | 0.00    | 40000.00  |
| R1OOPFHHOFLY | 15176 | 0.00    | 0.06     | 0.00    | 1.00      |
| R2OOPFHHOFLY | 13701 | 0.00    | 0.05     | 0.00    | 1.00      |
| R3OOPFHHOFLY | 15723 | 0.00    | 0.04     | 0.00    | 1.00      |
| R4OOPFHHOFLY | 14763 | 0.00    | 0.04     | 0.00    | 1.00      |
| S1OOPFHHOFLY | 10643 | 0.00    | 0.06     | 0.00    | 1.00      |
| S2OOPFHHOFLY | 9562  | 0.00    | 0.04     | 0.00    | 1.00      |
| S3OOPFHHOFLY | 10592 | 0.00    | 0.04     | 0.00    | 1.00      |
| S4OOPFHHOFLY | 9650  | 0.00    | 0.04     | 0.00    | 1.00      |

|              |       |         |         |      |           |
|--------------|-------|---------|---------|------|-----------|
| R1OOPDEN1Y   | 15176 | 283.50  | 1313.00 | 0.00 | 60000.00  |
| R2OOPDEN1Y   | 13701 | 324.90  | 1662.56 | 0.00 | 100000.00 |
| R3OOPDEN1Y   | 15723 | 708.37  | 6132.31 | 0.00 | 600000.00 |
| R4OOPDEN1Y   | 14763 | 780.45  | 3084.68 | 0.00 | 100000.00 |
| R5OOPDEN1Y   | 17114 | 1136.36 | 6458.61 | 0.00 | 600000.00 |
| S1OOPDEN1Y   | 10643 | 287.85  | 1363.35 | 0.00 | 60000.00  |
| S2OOPDEN1Y   | 9562  | 327.90  | 1655.37 | 0.00 | 100000.00 |
| S3OOPDEN1Y   | 10592 | 676.05  | 4153.18 | 0.00 | 215000.00 |
| S4OOPDEN1Y   | 9650  | 806.25  | 3251.86 | 0.00 | 100000.00 |
| S5OOPDEN1Y   | 7638  | 1103.87 | 4714.01 | 0.00 | 270000.00 |
| R1OOPDENF1Y  | 15176 | 0.01    | 0.08    | 0.00 | 1.00      |
| R2OOPDENF1Y  | 13701 | 0.01    | 0.09    | 0.00 | 1.00      |
| R3OOPDENF1Y  | 15723 | 0.01    | 0.09    | 0.00 | 1.00      |
| R4OOPDENF1Y  | 14763 | 0.01    | 0.09    | 0.00 | 1.00      |
| R5OOPDENF1Y  | 17114 | 0.02    | 0.12    | 0.00 | 1.00      |
| S1OOPDENF1Y  | 10643 | 0.00    | 0.07    | 0.00 | 1.00      |
| S2OOPDENF1Y  | 9562  | 0.01    | 0.09    | 0.00 | 1.00      |
| S3OOPDENF1Y  | 10592 | 0.01    | 0.09    | 0.00 | 1.00      |
| S4OOPDENF1Y  | 9650  | 0.01    | 0.08    | 0.00 | 1.00      |
| S5OOPDENF1Y  | 7638  | 0.02    | 0.12    | 0.00 | 1.00      |
| R1OOPOSRG1Y  | 15176 | 31.17   | 511.10  | 0.00 | 22500.00  |
| R2OOPOSRG1Y  | 13701 | 111.30  | 2129.02 | 0.00 | 120000.00 |
| R3OOPOSRG1Y  | 15723 | 184.83  | 4120.08 | 0.00 | 400000.00 |
| R4OOPOSRG1Y  | 14763 | 207.57  | 2623.97 | 0.00 | 120000.00 |
| R5OOPOSRG1Y  | 17114 | 269.10  | 3356.38 | 0.00 | 200000.00 |
| S1OOPOSRG1Y  | 10643 | 32.91   | 530.04  | 0.00 | 22500.00  |
| S2OOPOSRG1Y  | 9562  | 118.67  | 2356.39 | 0.00 | 120000.00 |
| S3OOPOSRG1Y  | 10592 | 151.23  | 2670.48 | 0.00 | 130000.00 |
| S4OOPOSRG1Y  | 9650  | 198.35  | 2643.60 | 0.00 | 120000.00 |
| S5OOPOSRG1Y  | 7638  | 310.02  | 3788.56 | 0.00 | 200000.00 |
| R1OOPOSRGF1Y | 15176 | 0.00    | 0.04    | 0.00 | 1.00      |
| R2OOPOSRGF1Y | 13701 | 0.00    | 0.04    | 0.00 | 1.00      |
| R3OOPOSRGF1Y | 15723 | 0.00    | 0.04    | 0.00 | 1.00      |
| R4OOPOSRGF1Y | 14763 | 0.00    | 0.02    | 0.00 | 1.00      |
| R5OOPOSRGF1Y | 17114 | 0.00    | 0.07    | 0.00 | 1.00      |
| S1OOPOSRGF1Y | 10643 | 0.00    | 0.04    | 0.00 | 1.00      |
| S2OOPOSRGF1Y | 9562  | 0.00    | 0.03    | 0.00 | 1.00      |
| S3OOPOSRGF1Y | 10592 | 0.00    | 0.04    | 0.00 | 1.00      |
| S4OOPOSRGF1Y | 9650  | 0.00    | 0.01    | 0.00 | 1.00      |
| S5OOPOSRGF1Y | 7638  | 0.01    | 0.08    | 0.00 | 1.00      |
| R1OOPDOC1Y   | 15176 | 488.79  | 3216.58 | 0.00 | 250000.00 |
| R2OOPDOC1Y   | 13701 | 598.07  | 4301.72 | 0.00 | 300000.00 |
| R3OOPDOC1Y   | 15723 | 535.79  | 3609.25 | 0.00 | 260000.00 |
| R4OOPDOC1Y   | 14763 | 621.36  | 3113.48 | 0.00 | 100000.00 |
| R5OOPDOC1Y   | 17114 | 961.20  | 5191.55 | 0.00 | 200000.00 |
| S1OOPDOC1Y   | 10643 | 471.86  | 3192.88 | 0.00 | 250000.00 |
| S2OOPDOC1Y   | 9562  | 599.96  | 4412.42 | 0.00 | 300000.00 |
| S3OOPDOC1Y   | 10592 | 459.42  | 2627.98 | 0.00 | 120000.00 |
| S4OOPDOC1Y   | 9650  | 562.32  | 2751.93 | 0.00 | 100000.00 |
| S5OOPDOC1Y   | 7638  | 998.54  | 5587.60 | 0.00 | 200000.00 |
| R1OOPDOCF1Y  | 15176 | 0.02    | 0.13    | 0.00 | 1.00      |
| R2OOPDOCF1Y  | 13701 | 0.02    | 0.13    | 0.00 | 1.00      |
| R3OOPDOCF1Y  | 15723 | 0.01    | 0.10    | 0.00 | 1.00      |

|             |       |         |          |      |           |
|-------------|-------|---------|----------|------|-----------|
| R4OOPDOCF1Y | 14763 | 0.01    | 0.09     | 0.00 | 1.00      |
| R5OOPDOCF1Y | 17114 | 0.02    | 0.14     | 0.00 | 1.00      |
| S1OOPDOCF1Y | 10643 | 0.01    | 0.12     | 0.00 | 1.00      |
| S2OOPDOCF1Y | 9562  | 0.02    | 0.12     | 0.00 | 1.00      |
| S3OOPDOCF1Y | 10592 | 0.01    | 0.09     | 0.00 | 1.00      |
| S4OOPDOCF1Y | 9650  | 0.01    | 0.08     | 0.00 | 1.00      |
| S5OOPDOCF1Y | 7638  | 0.02    | 0.14     | 0.00 | 1.00      |
| R1OOPMD1Y   | 15176 | 1301.71 | 8153.40  | 0.00 | 500000.00 |
| R2OOPMD1Y   | 13701 | 1645.90 | 10625.77 | 0.00 | 800000.00 |
| R3OOPMD1Y   | 15723 | 2153.24 | 12064.52 | 0.00 | 600000.00 |
| R4OOPMD1Y   | 14763 | 2977.26 | 14420.37 | 0.00 | 500000.00 |
| R5OOPMD1Y   | 17114 | 3967.71 | 16995.14 | 0.00 | 600000.00 |
| S1OOPMD1Y   | 10643 | 1284.32 | 9001.70  | 0.00 | 500000.00 |
| S2OOPMD1Y   | 9562  | 1720.55 | 11863.05 | 0.00 | 800000.00 |
| S3OOPMD1Y   | 10592 | 1978.30 | 9994.91  | 0.00 | 302000.00 |
| S4OOPMD1Y   | 9650  | 2810.60 | 13730.66 | 0.00 | 500000.00 |
| S5OOPMD1Y   | 7638  | 4292.58 | 17926.94 | 0.00 | 424531.81 |
| R1OOPMDF1Y  | 15176 | 0.03    | 0.17     | 0.00 | 1.00      |
| R2OOPMDF1Y  | 13701 | 0.03    | 0.18     | 0.00 | 1.00      |
| R3OOPMDF1Y  | 15723 | 0.02    | 0.15     | 0.00 | 1.00      |
| R4OOPMDF1Y  | 14763 | 0.02    | 0.15     | 0.00 | 1.00      |
| R5OOPMDF1Y  | 17114 | 0.04    | 0.19     | 0.00 | 1.00      |
| S1OOPMDF1Y  | 10643 | 0.03    | 0.16     | 0.00 | 1.00      |
| S2OOPMDF1Y  | 9562  | 0.03    | 0.17     | 0.00 | 1.00      |
| S3OOPMDF1Y  | 10592 | 0.02    | 0.13     | 0.00 | 1.00      |
| S4OOPMDF1Y  | 9650  | 0.02    | 0.14     | 0.00 | 1.00      |
| S5OOPMDF1Y  | 7638  | 0.04    | 0.19     | 0.00 | 1.00      |

Categorical Variable Codes

|            |              |              |              |              |             |
|------------|--------------|--------------|--------------|--------------|-------------|
| Value----- | R1OOPHOSF1Y  | R2OOPHOSF1Y  | R3OOPHOSF1Y  | R4OOPHOSF1Y  | R5OOPHOSF1Y |
| .m:Missing | 10           | 3            |              | 16           |             |
| 0.No       | 15038        | 13583        | 15621        | 14661        | 16907       |
| 1.Yes      | 138          | 118          | 102          | 102          | 207         |
| Value----- | S1OOPHOSF1Y  | S2OOPHOSF1Y  | S3OOPHOSF1Y  | S4OOPHOSF1Y  | S5OOPHOSF1Y |
| .m:Missing | 5            | 2            |              | 2            |             |
| .u:Unmar   | 4205         | 4009         | 4782         | 4847         | 5227        |
| .v:SP NR   | 333          | 131          | 349          | 280          | 501         |
| 0.No       | 10567        | 9500         | 10542        | 9591         | 7537        |
| 1.Yes      | 76           | 62           | 50           | 59           | 101         |
| Value----- | R1OOPFHHOF1Y | R2OOPFHHOF1Y | R3OOPFHHOF1Y | R4OOPFHHOF1Y |             |
| .m:Missing | 10           | 3            |              | 16           |             |
| 0.No       | 15118        | 13670        | 15701        | 14737        |             |
| 1.Yes      | 58           | 31           | 22           | 26           |             |
| Value----- | S1OOPFHHOF1Y | S2OOPFHHOF1Y | S3OOPFHHOF1Y | S4OOPFHHOF1Y |             |
| .m:Missing | 5            | 2            |              | 2            |             |
| .u:Unmar   | 4205         | 4009         | 4782         | 4847         |             |
| .v:SP NR   | 333          | 131          | 349          | 280          |             |
| 0.No       | 10609        | 9544         | 10578        | 9636         |             |
| 1.Yes      | 34           | 18           | 14           | 14           |             |
| Value----- | R1OOPDENF1Y  | R2OOPDENF1Y  | R3OOPDENF1Y  | R4OOPDENF1Y  | R5OOPDENF1Y |
| .m:Missing | 10           | 3            |              | 16           |             |
| 0.No       | 15090        | 13583        | 15584        | 14636        | 16849       |
| 1.Yes      | 86           | 118          | 139          | 127          | 265         |
| Value----- | S1OOPDENF1Y  | S2OOPDENF1Y  | S3OOPDENF1Y  | S4OOPDENF1Y  | S5OOPDENF1Y |
| .m:Missing | 5            | 2            |              | 2            |             |
| .u:Unmar   | 4205         | 4009         | 4782         | 4847         | 5227        |



|            |  |              |              |              |              |              |
|------------|--|--------------|--------------|--------------|--------------|--------------|
| .v:SP NR   |  | 333          | 131          | 349          | 280          | 501          |
| 0.No       |  | 10592        | 9479         | 10513        | 9585         | 7517         |
| 1.Yes      |  | 51           | 83           | 79           | 65           | 121          |
| Value----- |  | R1OOPOSRGF1Y | R2OOPOSRGF1Y | R3OOPOSRGF1Y | R4OOPOSRGF1Y | R5OOPOSRGF1Y |
| .m:Missing |  | 10           | 3            |              | 16           |              |
| 0.No       |  | 15149        | 13681        | 15702        | 14754        | 17030        |
| 1.Yes      |  | 27           | 20           | 21           | 9            | 84           |
| Value----- |  | S1OOPOSRGF1Y | S2OOPOSRGF1Y | S3OOPOSRGF1Y | S4OOPOSRGF1Y | S5OOPOSRGF1Y |
| .m:Missing |  | 5            | 2            |              | 2            |              |
| .u:Unmar   |  | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR   |  | 333          | 131          | 349          | 280          | 501          |
| 0.No       |  | 10624        | 9553         | 10579        | 9648         | 7588         |
| 1.Yes      |  | 19           | 9            | 13           | 2            | 50           |
| Value----- |  | R1OOPDOC1Y   | R2OOPDOC1Y   | R3OOPDOC1Y   | R4OOPDOC1Y   | R5OOPDOC1Y   |
| .m:Missing |  | 10           | 3            |              | 16           |              |
| 0.No       |  | 14912        | 13465        | 15567        | 14635        | 16783        |
| 1.Yes      |  | 264          | 236          | 156          | 128          | 331          |
| Value----- |  | S1OOPDOC1Y   | S2OOPDOC1Y   | S3OOPDOC1Y   | S4OOPDOC1Y   | S5OOPDOC1Y   |
| .m:Missing |  | 5            | 2            |              | 2            |              |
| .u:Unmar   |  | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR   |  | 333          | 131          | 349          | 280          | 501          |
| 0.No       |  | 10484        | 9417         | 10512        | 9584         | 7495         |
| 1.Yes      |  | 159          | 145          | 80           | 66           | 143          |
| Value----- |  | R1OOPMDF1Y   | R2OOPMDF1Y   | R3OOPMDF1Y   | R4OOPMDF1Y   | R5OOPMDF1Y   |
| .m:Missing |  | 10           | 3            |              | 16           |              |
| 0.No       |  | 14697        | 13251        | 15359        | 14421        | 16471        |
| 1.Yes      |  | 479          | 450          | 364          | 342          | 643          |
| Value----- |  | S1OOPMDF1Y   | S2OOPMDF1Y   | S3OOPMDF1Y   | S4OOPMDF1Y   | S5OOPMDF1Y   |
| .m:Missing |  | 5            | 2            |              | 2            |              |
| .u:Unmar   |  | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR   |  | 333          | 131          | 349          | 280          | 501          |
| 0.No       |  | 10356        | 9286         | 10399        | 9467         | 7361         |
| 1.Yes      |  | 287          | 276          | 193          | 183          | 277          |

## How Constructed

RwOOPHOS1Y is the out of pocket hospitalizations expenditure in the last 12 months. RwOOPFHHO1Y is the total out of pocket homeopath and folk healer (curandero) expenditures in the last 12 months. RwOOPDEN1Y is the total out of pocket dentist expenditures in the last 12 months. RwOOPOSRG1Y is the total out of pocket outpatient surgery expenditures in the last 12 months. RwOOPDOC1Y is the total out of pocket doctor expenditures in the last 12 months. RwOOPMD1Y is the total out of pocket medical expenditure in the last 12 months.

All components in the out of pocket expenses were imputed separately by the MHAS. In Wave 1, the imputed components included: hospital costs (for overnight stays only), folk healer (curandero), homeopath, dentist, outpatient surgery costs, and doctor. After Wave 2, the options folk healer and homeopath were grouped into one option. Starting in Wave 5, the option for folk healer and homeopath was deleted. The questions ask "about how much did you pay for these?".

RwOOPHOS1Y, RwOOPFHHO1Y, RwOOPDEN1Y, RwOOPOSRG1Y, RwOOPDOC1Y, and RwOOPMD1Y indicate whether one or all components included to construct RwOOPHOS1Y, RwOOPFHHO1Y, RwOOPDEN1Y, RwOOPOSRG1Y, RwOOPDOC1Y, and RwOOPMD1Y, respectively, were imputed by the MHAS.

Please see the 2001 [\(here\)](#), 2003 [\(here\)](#), 2012 [\(here\)](#), 2015 [\(here\)](#), , and 2018 [\(here\)](#) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

RwOOPHOS1Y, RwOOPFHHO1Y, RwOOPDEN1Y, RwOOPOSRG1Y, RwOOPDOC1Y, and RwOOPMD1Y are assigned special missing values .d or .r, if they answered don't know or refused, respectively, and the value was not imputed. They are assigned special missing .k if the respondent reported that they paid in-kind. The variables are also assigned special missing value .m for the cases that failed to complete Section D (Medical

Expenditures). The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SWOOPHOS1Y, SWOOPFHHO1Y, SWOOPDEN1Y, SWOOPOSRG1Y, SWOOPDOC1Y, SWOOPMD1Y, SWOOPHOSF1Y, SWOOPFHHOF1Y, SWOOPDENF1Y, SWOOPOSRGF1Y, SWOOPDOCF1Y, and SWOOPMDF1Y are taken from the Wave 'w' spouse's values for the respective respondent variables. In addition to the special missing codes used in the respondent variables, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

In Wave 1, the MHAS imputed components of out of pocket medical expenditure were: hospital costs (for overnight stays only), folk healer (curandero), homeopath, dentist, outpatient surgery costs, and doctor. After Wave 2, the options folk healer and homeopath were grouped into one option. Starting in Wave 5, the option folk healer and homeopath was deleted. The questions ask "about how much did you pay for these?".

## Differences with the RAND HRS/Harmonized HRS

The MHAS imputed all the variables used as components of RWOOPMD. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

## MHAS Variables Used

### Wave 1:

|          |   |
|----------|---|
| D6IMP    | if imputed value                                    |
| D9_1IMP  | if imputed value                                    |
| D9_2IMP  | if imputed value                                    |
| D9_3IMP  | if imputed value                                    |
| D9_4IMP  | if imputed value                                    |
| D9_5IMP  | if imputed value                                    |
| IMAMD6   | total hospitalization expenditures (imputed)        |
| IMAMD9_1 | total folkhealer (curandero) expenditures (imputed) |
| IMAMD9_2 | total homeopath expenditures (imputed)              |
| IMAMD9_3 | total dental expenditures (imputed)                 |
| IMAMD9_4 | total outpatient procedure expenditures (imputed)   |
| IMAMD9_5 | total medical visits expenditures (imputed)         |

### Wave 2:

|           |   |
|-----------|---|
| D13IMP    | if imputed value                                  |
| D16_1IMP  | if imputed value                                  |
| D16_2IMP  | if imputed value                                  |
| D16_3IMP  | if imputed value                                  |
| D16_4IMP  | if imputed value                                  |
| IMAMD13   | total hospitalization expenditures (imputed)      |
| IMAMD16_1 | total curandero/homeopath expenditures (imputed)  |
| IMAMD16_3 | total outpatient procedure expenditures (imputed) |
| IMAMD16_4 | total medical visits expenditures (imputed)       |

### Wave 3:

|             |
|-------------|
| D6_IMP_12   |
| D9_1_IMP_12 |
| D9_2_IMP_12 |
| D9_3_IMP_12 |
| D9_4_IMP_12 |
| IMAMD6_12   |
| IMAMD9_1_12 |
| IMAMD9_3_12 |
| IMAMD9_4_12 |

### Wave 4:

|             |  |
|-------------|--|
| D6_IMP_15   | Total hospitalization costs (Flag if imputed value)      |
| D9_1_IMP_15 | Total curandero/ homeopath costs (Flag if imputed value) |
| D9_2_IMP_15 | Total dentist costs (Flag if imputed value)              |

|             |   |
|-------------|---|
| D9_3_IMP_15 | Total outpatient procedure costs (Flag if imputed value |
| D9_4_IMP_15 | Total medical visits costs (Flag if imputed value)      |
| IMAMD6_15   | Total hospitalization costs (imputed)                   |
| IMAMD9_1_15 | Total curandero/ homeopath costs(imputed)               |
| IMAMD9_3_15 | Total outpatient procedure costs (imputed)              |
| IMAMD9_4_15 | Total medical visits costs (imputed)                    |
| Wave 5:     |   |
| D6_IMP_18   | Total hospitalization costs (Flag if imputed value)     |
| D9_2_IMP_18 | Total outpatient procedure costs (Flag if imputed value |
| D9_3_IMP_18 | Total medical visits costs (Flag if imputed value)      |
| IMAMD6_18   | Total hospitalization costs (imputed)                   |
| IMAMD9_2_18 | Total outpatient procedure costs (imputed)              |
| IMAMD9_3_18 | Total medical visits costs (imputed)                    |

Covered by Federal Government Health Insurance Program

| Wave | Variable | Label                                    | Type  |
|------|----------|--|-------|
| 1    | R1HIGOV  | r1higov: w1 R Covered by government plan | Categ |
| 2    | R2HIGOV  | r2higov: w2 R Covered by government plan | Categ |
| 3    | R3HIGOV  | r3higov: w3 R Covered by government plan | Categ |
| 4    | R4HIGOV  | r4higov: w4 R Covered by government plan | Categ |
| 5    | R5HIGOV  | r5higov: w5 R Covered by government plan | Categ |
| 1    | S1HIGOV  | s1higov: w1 S Covered by government plan | Categ |
| 2    | S2HIGOV  | s2higov: w2 S Covered by government plan | Categ |
| 3    | S3HIGOV  | s3higov: w3 S Covered by government plan | Categ |
| 4    | S4HIGOV  | s4higov: w4 S Covered by government plan | Categ |
| 5    | S5HIGOV  | s5higov: w5 S Covered by government plan | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1HIGOV  | 15148 | 0.58 | 0.49    | 0.00    | 1.00    |
| R2HIGOV  | 13691 | 0.59 | 0.49    | 0.00    | 1.00    |
| R3HIGOV  | 15720 | 0.85 | 0.36    | 0.00    | 1.00    |
| R4HIGOV  | 14757 | 0.90 | 0.31    | 0.00    | 1.00    |
| R5HIGOV  | 17074 | 0.89 | 0.31    | 0.00    | 1.00    |
| S1HIGOV  | 10625 | 0.58 | 0.49    | 0.00    | 1.00    |
| S2HIGOV  | 9557  | 0.60 | 0.49    | 0.00    | 1.00    |
| S3HIGOV  | 10591 | 0.86 | 0.34    | 0.00    | 1.00    |
| S4HIGOV  | 9647  | 0.91 | 0.29    | 0.00    | 1.00    |
| S5HIGOV  | 7611  | 0.92 | 0.27    | 0.00    | 1.00    |

Categorical Variable Codes

| Value----- | R1HIGOV | R2HIGOV | R3HIGOV | R4HIGOV | R5HIGOV |
|------------|---------|---------|---------|---------|---------|
| .d:DK      | 5       | 9       | 3       | 6       |         |
| .m:Missing | 10      | 3       |         | 16      |         |
| .r:Refuse  | 23      | 1       |         |         | 40      |
| 0.No       | 6349    | 5598    | 2355    | 1536    | 1857    |
| 1.Yes      | 8799    | 8093    | 13365   | 13221   | 15217   |
| Value----- | S1HIGOV | S2HIGOV | S3HIGOV | S4HIGOV | S5HIGOV |
| .d:DK      | 2       | 5       | 1       | 3       |         |
| .m:Missing | 5       | 2       |         | 2       |         |
| .r:Refuse  | 16      |         |         |         | 27      |
| .u:Unmar   | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR   | 333     | 131     | 349     | 280     | 501     |
| 0.No       | 4414    | 3847    | 1451    | 903     | 624     |
| 1.Yes      | 6211    | 5710    | 9140    | 8744    | 6987    |

How Constructed

RwHIGOV indicates whether the respondent is covered by any government health insurance program. The question asks if the respondent has the right to medical attention in an organization or institution that provided the service. The options listed for the respondent changed starting in Wave 3 to include two new organizations: ISSSTE Estatal and Seguro Popular. RwHIGOV is coded as 0 if the respondent is not covered by any government health insurance program, and is coded as 1 if the respondent is covered by at least one government health insurance program. RwHIGOV is assigned special missing values .d or .r, if they answered don't know or refused, respectively. Other missing responses are assigned special missing value .m. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwHIGOV is taken from the Wave 'w' spouse's value for RwHIGOV. In addition to the special missing codes used in RwHIGOV, if the respondent is not designated as coupled in the current wave and assumed to be

single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

Respondents were asked if they had the right to medical attention in an organization or institution that provided the service. In Waves 1 and 2, the list included the following: the Mexican Social Security Institute (Instituto Mexicano del Seguro Social, IMSS) which is a government organization that provides medical attention, pensions and social security in Mexico; the Institute for Social Security and Services for State Workers (Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado, ISSSTE) which is a federal government organization that administers part of Mexico's health care and social security systems, and provides assistance in cases of disability, old age, risks in labor, and death to federal workers; and the Mexican state-owned petroleum company (Petróleos Mexicanos, PEMEX), Defense, and Marines medical attention program for their workers and members. Starting in Wave 3, the ISSSTE option also included State ISSSTE (ISSSTE Estatal). Also, Seguro Popular was included as an additional option. Seguro Popular is a public health insurance program that covers a wide range of services without co-pays for its affiliates. It was established by the government in 2003 as an effort to expand health care to all in Mexico.

## Differences with the RAND HRS/Harmonized HRS

In RAND HRS, the respondent is asked if they are covered by any government health insurance program. In the MHAS, the respondent is asked if they have 'the right to medical attention' in an organization or institution. Respondents are asked if they had right to each of the options including different government programs, private insurance, and other programs (not listed before).

## MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| D1_1    | imss  |
| D1_2    | issste  |
| D1_3    | pemex   |
| Wave 2: |   |
| D8_1    | have rights to social security (imss)                   |
| D8_2    | have rights to issste                                   |
| D8_3    | have rights to pemex, defense or navy                   |
| Wave 3: |   |
| D1_1_12 | Does respondent have a right to medical attention_IMSS  |
| D1_2_12 | Does respondent have a right to medical attention_ISSST |
| D1_3_12 | Does respondent have a right to medical attention_Seg P |
| D1_4_12 | Does respondent have a right to medical attention:PEMEX |
| Wave 4: |   |
| D1_1_15 | Does respondent have a right to medical attention: IMSS |
| D1_2_15 | Does respondent have a right to medical attention: ISSS |
| D1_3_15 | Does respondent have a right to medical attention: Segu |
| D1_4_15 | Does respondent have a right to medical attention: PEME |
| Wave 5: |   |
| D1_1_18 | Does R have a right to medical attention: IMSS          |
| D1_2_18 | Does R have a right to medical attention: ISSSTE/State  |
| D1_3_18 | Does R have a right to medical attention: Seguro Popula |
| D1_4_18 | Does R have a right to medical attention: PEMEX, Defens |

### Covered by Private Health Insurance

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1HIPRIV | r1hipriv: w1 R Covered by private health insurance | Categ |
| 2    | R2HIPRIV | r2hipriv: w2 R Covered by private health insurance | Categ |
| 3    | R3HIPRIV | r3hipriv: w3 R Covered by private health insurance | Categ |
| 4    | R4HIPRIV | r4hipriv: w4 R Covered by private health insurance | Categ |
| 5    | R5HIPRIV | r5hipriv: w5 R Covered by private health insurance | Categ |
| 1    | S1HIPRIV | s1hipriv: w1 S Covered by private health insurance | Categ |
| 2    | S2HIPRIV | s2hipriv: w2 S Covered by private health insurance | Categ |
| 3    | S3HIPRIV | s3hipriv: w3 S Covered by private health insurance | Categ |
| 4    | S4HIPRIV | s4hipriv: w4 S Covered by private health insurance | Categ |
| 5    | S5HIPRIV | s5hipriv: w5 S Covered by private health insurance | Categ |

### Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1HIPRIV | 14960 | 0.02 | 0.15    | 0.00    | 1.00    |
| R2HIPRIV | 13691 | 0.02 | 0.13    | 0.00    | 1.00    |
| R3HIPRIV | 15702 | 0.02 | 0.15    | 0.00    | 1.00    |
| R4HIPRIV | 14749 | 0.02 | 0.15    | 0.00    | 1.00    |
| R5HIPRIV | 17057 | 0.02 | 0.12    | 0.00    | 1.00    |
| S1HIPRIV | 10483 | 0.02 | 0.15    | 0.00    | 1.00    |
| S2HIPRIV | 9557  | 0.02 | 0.14    | 0.00    | 1.00    |
| S3HIPRIV | 10576 | 0.02 | 0.15    | 0.00    | 1.00    |
| S4HIPRIV | 9641  | 0.02 | 0.15    | 0.00    | 1.00    |
| S5HIPRIV | 7605  | 0.01 | 0.11    | 0.00    | 1.00    |

### Categorical Variable Codes

| Value----- | R1HIPRIV | R2HIPRIV | R3HIPRIV | R4HIPRIV | R5HIPRIV |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 63       | 9        | 5        | 7        | 3        |
| .m:Missing | 10       | 3        |          | 16       |          |
| .r:Refuse  | 153      | 1        | 16       | 7        | 54       |
| 0.No       | 14636    | 13451    | 15318    | 14429    | 16792    |
| 1.Yes      | 324      | 240      | 384      | 320      | 265      |
| Value----- | S1HIPRIV | S2HIPRIV | S3HIPRIV | S4HIPRIV | S5HIPRIV |
| .d:DK      | 52       | 5        | 2        | 4        |          |
| .m:Missing | 5        | 2        |          | 2        |          |
| .r:Refuse  | 108      |          | 14       | 5        | 33       |
| .u:Unmar   | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR   | 333      | 131      | 349      | 280      | 501      |
| 0.No       | 10249    | 9378     | 10320    | 9426     | 7504     |
| 1.Yes      | 234      | 179      | 256      | 215      | 101      |

### How Constructed

RwHIPRIV indicates whether the respondent is covered by any private medical health insurance. RwHIPRIV is coded as 0 if the respondent is not covered by any private medical health insurance, and is coded as 1 if the respondent is covered by private medical health insurance. RwHIPRIV is assigned special missing values .d or .r, if they answered don't know or refused, respectively. Other missing responses are assigned special missing value .m. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwHIPRIV is taken from the Wave 'w' spouse's value for RwHIPRIV. In addition to the special missing codes used in RwHIPRIV, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

In RAND HRS, the respondent is asked if they are covered by any private health insurance program. In the MHAS, the respondent is asked if they have 'the right to medical attention' in an organization or institution. Respondents are asked if they had right to each of the options including different government programs, private insurance, and other programs (not listed before).

MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| D1_4    | private physician                                       |
| Wave 2: |   |
| D8_4    | have rights to private medical insurance                |
| Wave 3: |   |
| D1_5_12 | Does respondent have a right to medical attention_Priva |
| Wave 4: |   |
| D1_5_15 | Does respondent have a right to medical attention: Priv |
| Wave 5: |   |
| D1_5_18 | Does R have a right to medical attention: Private Medic |

|  |
|--|
| <b>Covered by Health Insurance from a Current or Previous Employer</b> |
|--|

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1COVR_M | r1covr_m: w1 R Covered by respondent's employer plan | Categ |
| 2    | R2COVR_M | r2covr_m: w2 R Covered by respondent's employer plan | Categ |
| 3    | R3COVR_M | r3covr_m: w3 R Covered by respondent's employer plan | Categ |
| 4    | R4COVR_M | r4covr_m: w4 R Covered by respondent's employer plan | Categ |
| 5    | R5COVR_M | r5covr_m: w5 R Covered by respondent's employer plan | Categ |
| 1    | S1COVR_M | s1covr_m: w1 S Covered by respondent's employer plan | Categ |
| 2    | S2COVR_M | s2covr_m: w2 S Covered by respondent's employer plan | Categ |
| 3    | S3COVR_M | s3covr_m: w3 S Covered by respondent's employer plan | Categ |
| 4    | S4COVR_M | s4covr_m: w4 S Covered by respondent's employer plan | Categ |
| 5    | S5COVR_M | s5covr_m: w5 S Covered by respondent's employer plan | Categ |
| 1    | R1COVS_M | r1covs_m: w1 R Covered by spouse's employer plan     | Categ |
| 2    | R2COVS_M | r2covs_m: w2 R Covered by spouse's employer plan     | Categ |
| 3    | R3COVS_M | r3covs_m: w3 R Covered by spouse's employer plan     | Categ |
| 4    | R4COVS_M | r4covs_m: w4 R Covered by spouse's employer plan     | Categ |
| 5    | R5COVS_M | r5covs_m: w5 R Covered by spouse's employer plan     | Categ |
| 1    | S1COVS_M | s1covs_m: w1 S Covered by spouse's employer plan     | Categ |
| 2    | S2COVS_M | s2covs_m: w2 S Covered by spouse's employer plan     | Categ |
| 3    | S3COVS_M | s3covs_m: w3 S Covered by spouse's employer plan     | Categ |
| 4    | S4COVS_M | s4covs_m: w4 S Covered by spouse's employer plan     | Categ |
| 5    | S5COVS_M | s5covs_m: w5 S Covered by spouse's employer plan     | Categ |

### Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1COVR_M | 15148 | 0.25 | 0.43    | 0.00    | 1.00    |
| R2COVR_M | 13691 | 0.25 | 0.43    | 0.00    | 1.00    |
| R3COVR_M | 15706 | 0.27 | 0.45    | 0.00    | 1.00    |
| R4COVR_M | 14772 | 0.29 | 0.45    | 0.00    | 1.00    |
| R5COVR_M | 17071 | 0.30 | 0.46    | 0.00    | 1.00    |
| S1COVR_M | 10625 | 0.25 | 0.44    | 0.00    | 1.00    |
| S2COVR_M | 9557  | 0.26 | 0.44    | 0.00    | 1.00    |
| S3COVR_M | 10583 | 0.29 | 0.45    | 0.00    | 1.00    |
| S4COVR_M | 9648  | 0.30 | 0.46    | 0.00    | 1.00    |
| S5COVR_M | 7611  | 0.30 | 0.46    | 0.00    | 1.00    |
| R1COVS_M | 15148 | 0.15 | 0.36    | 0.00    | 1.00    |
| R2COVS_M | 13691 | 0.15 | 0.36    | 0.00    | 1.00    |
| R3COVS_M | 15706 | 0.17 | 0.38    | 0.00    | 1.00    |
| R4COVS_M | 14772 | 0.18 | 0.38    | 0.00    | 1.00    |
| R5COVS_M | 17071 | 0.17 | 0.37    | 0.00    | 1.00    |
| S1COVS_M | 10625 | 0.18 | 0.38    | 0.00    | 1.00    |
| S2COVS_M | 9557  | 0.18 | 0.38    | 0.00    | 1.00    |
| S3COVS_M | 10583 | 0.19 | 0.39    | 0.00    | 1.00    |
| S4COVS_M | 9648  | 0.20 | 0.40    | 0.00    | 1.00    |
| S5COVS_M | 7611  | 0.20 | 0.40    | 0.00    | 1.00    |

### Categorical Variable Codes

| Value----- | R1COVR_M | R2COVR_M | R3COVR_M | R4COVR_M | R5COVR_M |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 5        | 9        | 3        | 7        | 2        |
| .m:Missing | 10       | 3        | 14       |          |          |
| .r:Refuse  | 23       | 1        |          |          | 41       |



|            |  |          |          |          |          |          |
|------------|--|----------|----------|----------|----------|----------|
| 0.No       |  | 11431    | 10300    | 11424    | 10514    | 12029    |
| 1.Yes      |  | 3717     | 3391     | 4282     | 4258     | 5042     |
| Value----- |  | S1COVR_M | S2COVR_M | S3COVR_M | S4COVR_M | S5COVR_M |
| .d:DK      |  | 2        | 5        | 1        | 4        |          |
| .m:Missing |  | 5        | 2        | 8        |          |          |
| .r:Refuse  |  | 16       |          |          |          | 27       |
| .u:Unmar   |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR   |  | 333      | 131      | 349      | 280      | 501      |
| 0.No       |  | 7917     | 7078     | 7553     | 6760     | 5297     |
| 1.Yes      |  | 2708     | 2479     | 3030     | 2888     | 2314     |
| Value----- |  | R1COVS_M | R2COVS_M | R3COVS_M | R4COVS_M | R5COVS_M |
| .d:DK      |  | 5        | 9        | 3        | 7        | 2        |
| .m:Missing |  | 10       | 3        | 14       |          |          |
| .r:Refuse  |  | 23       | 1        |          |          | 41       |
| 0.No       |  | 12844    | 11618    | 13017    | 12116    | 14213    |
| 1.Yes      |  | 2304     | 2073     | 2689     | 2656     | 2858     |
| Value----- |  | S1COVS_M | S2COVS_M | S3COVS_M | S4COVS_M | S5COVS_M |
| .d:DK      |  | 2        | 5        | 1        | 4        |          |
| .m:Missing |  | 5        | 2        | 8        |          |          |
| .r:Refuse  |  | 16       |          |          |          | 27       |
| .u:Unmar   |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR   |  | 333      | 131      | 349      | 280      | 501      |
| 0.No       |  | 8744     | 7866     | 8566     | 7709     | 6111     |
| 1.Yes      |  | 1881     | 1691     | 2017     | 1939     | 1500     |

## How Constructed

All respondents are asked whether they have the right to medical attention through different types of providers for employees: (1) Social Security (IMSS), (2) ISSSTE, (3) Pemex, Defensa or Marina. Starting in Wave 3, State ISSSTE was listed in the same option as ISSSTE. For each possible provider of medical attention that the respondent identifies, the respondent is asked to select one reason why they have the right to these medical services with the options of: A worker, Affiliated on your own, Retired, Spouse of insured, Mother or father of insured, Other.

RwCOVR\_M indicates whether the respondent is covered by health insurance because they are or were a worker. A value of 1 is assigned if the respondent answers they have the right to medical attention through any of the 3 possible types of providers for employees and lists the reason for having the right to medical services for that provider as because they are a worker or because they are retired, for at least one of the providers. A value of 0 is assigned if the respondent does not have any right to medical attention or if their right to medical attention was always due to reasons other than being a worker or being retired. When respondents don't know, refuse, or their answer is missing for another reason RwCOVR\_M is assigned special missing values .d, .r, or .m, respectively. RwCOVR\_M is set to plain missing (.) for respondents who did not respond to the current wave.

RwCOVS\_M indicates whether the respondent is covered by health insurance because their spouse is or was a worker. A value of 1 is assigned if the respondent answers they have the right to medical attention through any of the 3 possible types of providers for employees and lists the reason for having the right to medical services for that provider as because they are the spouse of the insured, for at least one of the providers. A value of 0 is assigned if the respondent does not have any right to medical attention or if their right to medical attention was always due to reasons other than being the spouse of the insured. When respondents don't know, refuse, or their answer is missing for another reason RwCOVS\_M is assigned special missing values .d, .r, or .m, respectively. RwCOVS\_M is set to plain missing (.) for respondents who did not respond to the current wave.

SwCOVR\_M indicates whether the respondent's spouse or partner is covered by the respondent's employer. SwCOVS\_M indicates whether the respondent's spouse is covered by the spouse's employer. SwCOVR\_M and SwCOVS\_M are taken from the Wave 'w' spouse's values for RwCOVR\_M and RwCOVS\_M. In addition to the special missing codes used in RwCOVR\_M and RwCOVS\_M, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

Starting at Wave 3, the ISSSTE option also included State ISSSTE (ISSSTE Estatal).

## Differences with the RAND HRS/Harmonized HRS

Though health insurance is often provided through employers in both Mexico and the US, the arrangements and organization of these plans are very different. In Mexico, citizens employed outside of the public sector and their dependents can access medical services through the governmental system of IMSS which is funded equally by the employee, the private employer, and the federal government. Public employees and their dependents can access medical services through ISSSTE, Pemex, Defensa or Marina, depending on what governmental organization they work for. In the United States, people employed outside of the public sector and their dependents are often provided private health insurance through their employer. Public employees and their dependents are often provided health insurance through government run systems like FEHBP and MHS, depending on what governmental organization they work for. These differences in the provision of health insurance for employees are reflected in differences between the HRS and the MHAS surveys.

In the HRS, respondents are first asked about government health insurance systems which include questions for public employees who are provided health insurance through government run systems and then respondents are asked about other private health insurance plans. In the RAND HRS, Rwcovr and Rwcovs use information from the set of HRS questions about private health insurance and identifies whether those private plans are provided by current or former employers of the respondent or the spouse, respectively. In the MHAS, respondents are asked about government-run health insurance for employees. In the Harmonized MHAS, Rwcovr\_M identifies whether government-run health insurance is provided because the respondent is or was a worker. In the Harmonized MHAS, Rwcovs\_M identifies whether government-run health insurance is provided because the respondent's spouse is or was a worker. Rwcovr and Rwcovs in the RAND HRS therefore does not capture government run health insurance provided to public employees as does Rwcovr\_M and Rwcovs\_M in the Harmonized MHAS. Given these considerable differences, these sets of variables should not be considered immediately comparable between the RAND HRS and the Harmonized MHAS.

## MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| D2_1    | reason to access to imss                                |
| D2_2    | reason to access to issste                              |
| D2_3    | reason to access to pemex                               |
| Wave 2: |   |
| D9_1    | why have rights to social security (imss)               |
| D9_2    | why have rights to issste                               |
| D9_3    | why have rights to pemex, defense or navy               |
| Wave 3: |   |
| D2_1_12 | Reason respondent has a right to medical services_IMSS  |
| D2_2_12 | Reason respondent has a right to medical services_ISSST |
| D2_4_12 | Reason respondent has a right to medical services:PEMEX |
| Wave 4: |   |
| D2_1_15 | Reason respondent has a right to medical services: IMSS |
| D2_2_15 | Reason respondent has a right to medical services: ISSS |
| D2_4_15 | Reason respondent has a right to medical services: PEME |
| Wave 5: |   |
| D2_1_18 | Reason R has a right to medical services: IMSS          |
| D2_2_18 | Reason R has a right to medical services: ISSSTE/State  |
| D2_4_18 | Reason R has a right to medical services: PEMEX, Defens |

|   |
|---|
| <b>Number of Health Insurance Plans</b> |
|---|

| Wave | Variable | Label  | Type |
|------|----------|--|------|
| 1    | R1HENUM  | r1henum: w1 R Number of health insurance plans | Cont |
| 2    | R2HENUM  | r2henum: w2 R Number of health insurance plans | Cont |
| 3    | R3HENUM  | r3henum: w3 R Number of health insurance plans | Cont |
| 4    | R4HENUM  | r4henum: w4 R Number of health insurance plans | Cont |
| 5    | R5HENUM  | r5henum: w5 R Number of health insurance plans | Cont |
| 1    | S1HENUM  | s1henum: w1 S Number of health insurance plans | Cont |
| 2    | S2HENUM  | s2henum: w2 S Number of health insurance plans | Cont |
| 3    | S3HENUM  | s3henum: w3 S Number of health insurance plans | Cont |
| 4    | S4HENUM  | s4henum: w4 S Number of health insurance plans | Cont |
| 5    | S5HENUM  | s5henum: w5 S Number of health insurance plans | Cont |

### Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1HENUM  | 14924 | 0.66 | 0.57    | 0.00    | 4.00    |
| R2HENUM  | 13688 | 0.69 | 0.57    | 0.00    | 4.00    |
| R3HENUM  | 15651 | 0.97 | 0.49    | 0.00    | 4.00    |
| R4HENUM  | 14727 | 1.04 | 0.48    | 0.00    | 4.00    |
| R5HENUM  | 17046 | 0.99 | 0.43    | 0.00    | 4.00    |
| S1HENUM  | 10458 | 0.66 | 0.57    | 0.00    | 3.00    |
| S2HENUM  | 9556  | 0.71 | 0.57    | 0.00    | 4.00    |
| S3HENUM  | 10550 | 0.99 | 0.48    | 0.00    | 4.00    |
| S4HENUM  | 9619  | 1.05 | 0.46    | 0.00    | 4.00    |
| S5HENUM  | 7597  | 1.03 | 0.42    | 0.00    | 4.00    |

### How Constructed

RwHENUM is the count of the number of health insurance plans the respondent reports having rights to. The question asks if the respondent has the right to medical attention in an organization or institution that provided the service; the options include different government programs, private insurance, and other programs. The options listed for the respondent changed after Wave 3 including two new organizations: ISSSTE Estatal was added to the existing option ISSSTE and Seguro Popular was added as a new option.

In Waves 1 and 2,  $RwHENUM = \text{sum}(\text{IMSS} + \text{ISSSTE} + \text{PEMEX/Marine/Defense} + \text{Private} + \text{Other})$ . The maximum total number is 5.

Starting in Wave 3,  $RwHENUM = \text{sum}(\text{IMSS} + \text{ISSSTE/State ISSSTE} + \text{PEMEX/Marine/Defense} + \text{Seguro Popular} + \text{Private} + \text{Other})$ . The maximum total number is 6.

RwHENUM is set to 0, if the respondent reports they do not have right to medical attention. RwHENUM is assigned special missing values .d or .r, if they answered don't know or refused, respectively. Other missing responses are assigned special missing value .m. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwHENUM is taken from the Wave 'w' spouse's value for RwHENUM. In addition to the special missing codes used in RwHENUM, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

### Cross Wave Differences in MHAS

Respondents were asked if they had the right to medical attention in an organization or institution that provided the service. In Waves 1 and 2, the list included the following: the Mexican Social Security Institute (Instituto Mexicano del Seguro Social, IMSS) which is a government organization that provides medical attention, pensions and social security in Mexico; the Institute for Social Security and Services

for State Workers (Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado, ISSSTE) which is a federal government organization that administers part of Mexico's health care and social security systems, and provides assistance in cases of disability, old age, risks in labor, and death to federal workers; and the Mexican state-owned petroleum company (Petróleos Mexicanos, PEMEX), Defense, and Marines medical attention program for their workers and members. Starting in Wave 3, the ISSSTE option also included State ISSSTE (ISSSTE Estatal). Also, Seguro Popular was also included as an additional option. Seguro Popular is a public health insurance program that covers a wide range of services without co-pays for its affiliates. It was established by the government in 2003 as an effort to expand health care to all in Mexico.

After Wave 3, the possible total number of health insurance plans increased from 5 to 6.

### Differences with the RAND HRS/Harmonized HRS

In RAND HRS, the respondent is asked if they are covered by any government or private health insurance program, and they are subsequently asked if they are covered by certain specific plans. In the MHAS, the respondent is asked if they have 'the right to medical attention' in an organization or institution. Respondents are asked if they had the right to each of the options including different government programs, private insurance, and other programs (not listed before).

### MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| D1_1    | imss  |
| D1_2    | issste  |
| D1_3    | pemex   |
| D1_4    | private physician                                       |
| D1_5    | other medical service                                   |
| Wave 2: |   |
| D8_1    | have rights to social security (imss)                   |
| D8_2    | have rights to issste                                   |
| D8_3    | have rights to pemex, defense or navy                   |
| D8_4    | have rights to private medical insurance                |
| D8_5    | have rights to other                                    |
| Wave 3: |   |
| D1_1_12 | Does respondent have a right to medical attention_IMSS  |
| D1_2_12 | Does respondent have a right to medical attention_ISSST |
| D1_3_12 | Does respondent have a right to medical attention_Seg P |
| D1_4_12 | Does respondent have a right to medical attention:PEMEX |
| D1_5_12 | Does respondent have a right to medical attention_Priva |
| D1_6_12 | Does respondent have a right to medical attention_OTHER |
| Wave 4: |   |
| D1_1_15 | Does respondent have a right to medical attention: IMSS |
| D1_2_15 | Does respondent have a right to medical attention: ISSS |
| D1_3_15 | Does respondent have a right to medical attention: Segu |
| D1_4_15 | Does respondent have a right to medical attention: PEME |
| D1_5_15 | Does respondent have a right to medical attention: Priv |
| D1_6_15 | Does respondent have a right to medical attention: Othe |
| Wave 5: |   |
| D1_1_18 | Does R have a right to medical attention: IMSS          |
| D1_2_18 | Does R have a right to medical attention: ISSSTE/State  |
| D1_3_18 | Does R have a right to medical attention: Seguro Popula |
| D1_4_18 | Does R have a right to medical attention: PEMEX, Defens |
| D1_5_18 | Does R have a right to medical attention: Private Medic |
| D1_6_18 | Does R have a right to medical attention: Other         |

**Section D: Cognition**

Cognition Testing Conditions

| Wave | Variable   | Label                                     | Type  |
|------|------------|---|-------|
| 1    | R1NOVISUAL | r1novisual: w1 R Visual Problems          | Categ |
| 2    | R2NOVISUAL | r2novisual: w2 R Visual Problems          | Categ |
| 3    | R3NOVISUAL | r3novisual: w3 R Visual Problems          | Categ |
| 4    | R4NOVISUAL | r4novisual: w4 R Visual Problems          | Categ |
| 5    | R5NOVISUAL | r5novisual: w5 R Visual Problems          | Categ |
| 1    | S1NOVISUAL | s1novisual: w1 S Visual Problems          | Categ |
| 2    | S2NOVISUAL | s2novisual: w2 S Visual Problems          | Categ |
| 3    | S3NOVISUAL | s3novisual: w3 S Visual Problems          | Categ |
| 4    | S4NOVISUAL | s4novisual: w4 S Visual Problems          | Categ |
| 5    | S5NOVISUAL | s5novisual: w5 S Visual Problems          | Categ |
| 1    | R1NOPENCIL | r1nopencil: w1 R Problem Holding a Pencil | Categ |
| 2    | R2NOPENCIL | r2nopencil: w2 R Problem Holding a Pencil | Categ |
| 3    | R3NOPENCIL | r3nopencil: w3 R Problem Holding a Pencil | Categ |
| 4    | R4NOPENCIL | r4nopencil: w4 R Problem Holding a Pencil | Categ |
| 5    | R5NOPENCIL | r5nopencil: w5 R Problem Holding a Pencil | Categ |
| 1    | S1NOPENCIL | s1nopencil: w1 S Problem Holding a Pencil | Categ |
| 2    | S2NOPENCIL | s2nopencil: w2 S Problem Holding a Pencil | Categ |
| 3    | S3NOPENCIL | s3nopencil: w3 S Problem Holding a Pencil | Categ |
| 4    | S4NOPENCIL | s4nopencil: w4 S Problem Holding a Pencil | Categ |
| 5    | S5NOPENCIL | s5nopencil: w5 S Problem Holding a Pencil | Categ |

Descriptive Statistics

| Variable   | N     | Mean | Std Dev | Minimum | Maximum |
|------------|-------|------|---------|---------|---------|
| R1NOVISUAL | 13960 | 0.02 | 0.13    | 0.00    | 1.00    |
| R2NOVISUAL | 12495 | 0.03 | 0.17    | 0.00    | 1.00    |
| R3NOVISUAL | 14116 | 0.00 | 0.07    | 0.00    | 1.00    |
| R4NOVISUAL | 13714 | 0.00 | 0.05    | 0.00    | 1.00    |
| R5NOVISUAL | 15650 | 0.00 | 0.06    | 0.00    | 1.00    |
| S1NOVISUAL | 9858  | 0.01 | 0.12    | 0.00    | 1.00    |
| S2NOVISUAL | 8728  | 0.02 | 0.15    | 0.00    | 1.00    |
| S3NOVISUAL | 9652  | 0.00 | 0.06    | 0.00    | 1.00    |
| S4NOVISUAL | 9123  | 0.00 | 0.05    | 0.00    | 1.00    |
| S5NOVISUAL | 7013  | 0.00 | 0.06    | 0.00    | 1.00    |
| R1NOPENCIL | 13703 | 0.06 | 0.23    | 0.00    | 1.00    |
| R2NOPENCIL | 12101 | 0.04 | 0.20    | 0.00    | 1.00    |
| R3NOPENCIL | 14126 | 0.02 | 0.14    | 0.00    | 1.00    |
| R4NOPENCIL | 13741 | 0.02 | 0.14    | 0.00    | 1.00    |
| R5NOPENCIL | 15762 | 0.02 | 0.15    | 0.00    | 1.00    |
| S1NOPENCIL | 9718  | 0.05 | 0.21    | 0.00    | 1.00    |
| S2NOPENCIL | 8525  | 0.03 | 0.18    | 0.00    | 1.00    |
| S3NOPENCIL | 9653  | 0.02 | 0.12    | 0.00    | 1.00    |
| S4NOPENCIL | 9137  | 0.02 | 0.13    | 0.00    | 1.00    |
| S5NOPENCIL | 7067  | 0.03 | 0.16    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----                    | R1NOVISUAL | R2NOVISUAL | R3NOVISUAL | R4NOVISUAL | R5NOVISUAL |
|-------------------------------|------------|------------|------------|------------|------------|
| .m:Missing                    | 27         | 20         | 128        |            |            |
| .p:Proxy interview, not asked | 1032       | 1178       | 1275       | 929        | 1328       |
| .r:Refuse                     |            |            | 43         | 53         | 112        |

|                               |  |            |            |            |            |            |
|-------------------------------|--|------------|------------|------------|------------|------------|
| .s:Skip                       |  | 167        | 11         | 161        | 83         | 24         |
| 0.No                          |  | 13701      | 12100      | 14054      | 13675      | 15589      |
| 1.Yes                         |  | 259        | 395        | 62         | 39         | 61         |
| Value-----                    |  | S1NOVISUAL | S2NOVISUAL | S3NOVISUAL | S4NOVISUAL | S5NOVISUAL |
| .m:Missing                    |  | 10         | 6          | 86         |            |            |
| .p:Proxy interview, not asked |  | 660        | 821        | 726        | 470        | 563        |
| .r:Refuse                     |  |            |            | 21         | 30         | 54         |
| .s:Skip                       |  | 120        | 9          | 107        | 29         | 8          |
| .u:Unmar                      |  | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      |  | 333        | 131        | 349        | 280        | 501        |
| 0.No                          |  | 9717       | 8525       | 9615       | 9101       | 6990       |
| 1.Yes                         |  | 141        | 203        | 37         | 22         | 23         |
| Value-----                    |  | R1NOPENCIL | R2NOPENCIL | R3NOPENCIL | R4NOPENCIL | R5NOPENCIL |
| .m:Missing                    |  | 25         | 20         | 132        |            |            |
| .n:not specified              |  |            |            | 6          |            |            |
| .p:Proxy interview, not asked |  | 1032       | 1178       | 1275       | 929        | 1328       |
| .r:Refuse                     |  |            |            | 23         | 26         |            |
| .s:Skip                       |  | 426        | 405        | 161        | 83         | 24         |
| 0.No                          |  | 12942      | 11594      | 13825      | 13448      | 15377      |
| 1.Yes                         |  | 761        | 507        | 301        | 293        | 385        |
| Value-----                    |  | S1NOPENCIL | S2NOPENCIL | S3NOPENCIL | S4NOPENCIL | S5NOPENCIL |
| .m:Missing                    |  | 9          | 6          | 85         |            |            |
| .n:not specified              |  |            |            | 4          |            |            |
| .p:Proxy interview, not asked |  | 660        | 821        | 726        | 470        | 563        |
| .r:Refuse                     |  |            |            | 17         | 16         |            |
| .s:Skip                       |  | 261        | 212        | 107        | 29         | 8          |
| .u:Unmar                      |  | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      |  | 333        | 131        | 349        | 280        | 501        |
| 0.No                          |  | 9263       | 8230       | 9503       | 8972       | 6887       |
| 1.Yes                         |  | 455        | 295        | 150        | 165        | 180        |

## How Constructed

These variables indicate whether the respondent reported visual problems or problems holding a pencil, respectively.

In Wave 1, RwnoVISUAL was derived from the variable that indicates the respondent's reading ability (with or without glasses). If the respondent could not see the letters, RwnoVISUAL was set to 1. In Wave 2, RwnoVISUAL was derived from the assessment done to determine if the respondent could see close objects, with glasses if needed. If the respondent could not see the objects, RwnoVISUAL was set to 1. If the respondent had difficulty reading (RwnoVISUAL=1), the respondent was not asked to complete the picture drawing and visual scanning tasks. Starting in Wave 3, RwnoVISUAL was derived from both the assessment and the variable that indicates the respondent's reading ability (with or without glasses). If the respondent reported being able to read or was able to see close objects, then RwnoVISUAL is set to 0. If the respondent reported they could not read, the respondent was not asked to complete the picture drawing and visual scanning tasks.

RwnoPENCIL was derived with similar variables across the waves based on whether the respondent reported any problem holding the pencil they were asked to try to hold. If the respondent has paralysis, tries to hold the pencil but can't, or if they refuse to try, RwnoPENCIL was set to 1. If the respondent was able to hold a pencil, then RwnoPENCIL is set to 0. Also, if RwnoPENCIL was equal to 1 the respondent was not asked to complete the picture drawing and visual scanning tasks.

These variables are set to .p for proxy interviews, .s if the questions were skipped because they could not complete the paper exercises, .i if the code is invalid, and .m if they didn't complete the section but completed the rest of the interview. In Wave 3, RwnoPENCIL is set to special missing value .n if answer was coded as "not applicable". Starting in Wave 3, these variables are set to .r for refused if they refused to read or refused to answer whether they had difficulty using a pencil. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwnoVISUAL and SwnoPENCIL are taken from the Wave 'w' spouse's values for RwnoVISUAL and RwnoPENCIL, respectively. In addition to the special missing codes used in RwnoVISUAL and RwnoPENCIL, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

The introductory questions in the Cognition section (Section E) are similar across waves. However, RwnoVISUAL was derived in Wave 1 only from the variable which indicates the respondent's reading ability (with or without glasses), in Wave 2 from the assessment done to determine if the respondent could see close objects, with glasses if needed, and starting in Waves 3 from both the assessment and the variable that indicates the respondent's reading ability (with or without glasses). Also different across waves is that in Waves 1 and 2 the interviews could be completed in a language different from Spanish in which case the cognitive assessment is not completed, and the variables are then set to the special missing .s.

Differences with the RAND HRS/Harmonized HRS

RwnoVISUAL and RwnoPENCIL are MHAS specific and the questions used to derive these variables are only used this study.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| E1      | language  |
| E5      | loud voice  |
| E6      | hold pencil                                       |
| E7      | problems holding                                  |
| Wave 2: |   |
| E2      | glasses   |
| E3      | can respondent see clearly now                    |
| E4      | have problems holding a pencil                    |
| E5      | types of pencil-holding problems                  |
| Wave 3: |   |
| E3A_12  | Interviewer:Can respondent read without glasses   |
| E3B_12  | Respondent can read well (with glasses if needed) |
| E4_12   | Does respondent have difficulty using a pencil    |
| E5_12   | Respondent's type of difficulties                 |
| Wave 4: |   |
| E3A_15  | Interviewer:Can respondent read without glasses   |
| E3B_15  | Respondent can read well (with glasses if needed) |
| E4_15   | Does respondent have difficulty using a pencil    |
| E5_15   | Respondent's type of difficulties                 |
| Wave 5: |   |
| E3A_18  | Interviewer:Can R read with glasses               |
| E3B_18  | R can read well (with glasses if needed)          |
| E4_18   | Does R have difficulty using a pencil             |
| E5_18   | R's type of difficulties                          |



Self-Reported Memory

| Wave | Variable | Label                                      | Type  |
|------|----------|--|-------|
| 3    | R3SLFMEM | r3slfmem: w3 R Self-Rated Memory           | Categ |
| 4    | R4SLFMEM | r4slfmem: w4 R Self-Rated Memory           | Categ |
| 5    | R5SLFMEM | r5slfmem: w5 R Self-Rated Memory           | Categ |
| 3    | S3SLFMEM | s3slfmem: w3 S Self-Rated Memory           | Categ |
| 4    | S4SLFMEM | s4slfmem: w4 S Self-Rated Memory           | Categ |
| 5    | S5SLFMEM | s5slfmem: w5 S Self-Rated Memory           | Categ |
| 3    | R3PSTMEM | r3pstmem: w3 R Memory Compared to the Past | Categ |
| 4    | R4PSTMEM | r4pstmem: w4 R Memory Compared to the Past | Categ |
| 5    | R5PSTMEM | r5pstmem: w5 R Memory Compared to the Past | Categ |
| 3    | S3PSTMEM | s3pstmem: w3 S Memory Compared to the Past | Categ |
| 4    | S4PSTMEM | s4pstmem: w4 S Memory Compared to the Past | Categ |
| 5    | S5PSTMEM | s5pstmem: w5 S Memory Compared to the Past | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R3SLFMEM | 14154 | 3.53 | 0.84    | 1.00    | 5.00    |
| R4SLFMEM | 13739 | 3.60 | 0.80    | 1.00    | 5.00    |
| R5SLFMEM | 15690 | 3.48 | 0.86    | 1.00    | 5.00    |
| S3SLFMEM | 9672  | 3.52 | 0.84    | 1.00    | 5.00    |
| S4SLFMEM | 9138  | 3.58 | 0.80    | 1.00    | 5.00    |
| S5SLFMEM | 7035  | 3.58 | 0.82    | 1.00    | 5.00    |
| R3PSTMEM | 14105 | 2.16 | 0.50    | 1.00    | 3.00    |
| R4PSTMEM | 13740 | 2.21 | 0.50    | 1.00    | 3.00    |
| R5PSTMEM | 15688 | 2.16 | 0.48    | 1.00    | 3.00    |
| S3PSTMEM | 9634  | 2.15 | 0.50    | 1.00    | 3.00    |
| S4PSTMEM | 9137  | 2.20 | 0.49    | 1.00    | 3.00    |
| S5PSTMEM | 7032  | 2.19 | 0.49    | 1.00    | 3.00    |

Categorical Variable Codes

| Value-----                    | R3SLFMEM | R4SLFMEM | R5SLFMEM |
|-------------------------------|----------|----------|----------|
| .d:DK                         | 11       | 8        | 9        |
| .m:Missing                    | 118      |          |          |
| .p:Proxy interview, not asked | 1275     | 929      | 1328     |
| .r:Refuse                     | 165      | 103      | 87       |
| 1.Excellent                   | 469      | 382      | 626      |
| 2.Very good                   | 712      | 548      | 1003     |
| 3.Good                        | 4892     | 4363     | 5341     |
| 4.Fair                        | 6951     | 7393     | 7721     |
| 5.Poor                        | 1130     | 1053     | 999      |
| Value-----                    | S3SLFMEM | S4SLFMEM | S5SLFMEM |
| .d:DK                         | 7        | 2        | 1        |
| .m:Missing                    | 77       |          |          |
| .p:Proxy interview, not asked | 726      | 470      | 563      |
| .r:Refuse                     | 110      | 42       | 39       |
| .u:Unmar                      | 4782     | 4847     | 5227     |
| .v:SP NR                      | 349      | 280      | 501      |
| 1.Excellent                   | 345      | 262      | 215      |
| 2.Very good                   | 488      | 363      | 338      |
| 3.Good                        | 3353     | 2936     | 2161     |
| 4.Fair                        | 4770     | 4937     | 3804     |

|                               |  |          |          |          |
|-------------------------------|--|----------|----------|----------|
| 5.Poor                        |  | 716      | 640      | 517      |
| Value-----                    |  | R3PSTMEM | R4PSTMEM | R5PSTMEM |
| .d:DK                         |  | 46       | 7        | 9        |
| .m:Missing                    |  | 121      |          |          |
| .p:Proxy interview, not asked |  | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 176      | 103      | 89       |
| 1.Better                      |  | 867      | 614      | 759      |
| 2.About the same              |  | 10179    | 9667     | 11651    |
| 3.Worse                       |  | 3059     | 3459     | 3278     |
| Value-----                    |  | S3PSTMEM | S4PSTMEM | S5PSTMEM |
| .d:DK                         |  | 34       | 4        | 2        |
| .m:Missing                    |  | 80       |          |          |
| .p:Proxy interview, not asked |  | 726      | 470      | 563      |
| .r:Refuse                     |  | 118      | 41       | 41       |
| .u:Unmar                      |  | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 349      | 280      | 501      |
| 1.Better                      |  | 581      | 382      | 283      |
| 2.About the same              |  | 7068     | 6531     | 5113     |
| 3.Worse                       |  | 1985     | 2224     | 1636     |

How Constructed

RwSLFMEM provides self-reported general rating of memory and RwpPSTMEM provides a self-reported measure of change in memory since the last two years.

RwSLFMEM ranges from 1 to 5: a score of 1 stands for excellent, 2 for very good, 3 for good, 4 for fair, and 5 for poor memory. RwpPSTMEM ranges from 1 to 3: a score of 1 stands for better, 2 for about the same, and 3 for worse. RwSLFMEM and RwpPSTMEM are assigned special missing values .d or .r, if the response was don't know or refused, respectively. These variables are set to .p for proxy interviews, .r if the respondent refused to complete the cognition exercises, and .m if they didn't complete the section but completed the rest of the interview. The variables are plain missing (.) for respondents who did not respond to the current wave.

These questions were only asked starting in Wave 3 (2012).

SwSLFMEM and SwPSTMEM are taken from the Wave 'w' spouse's value for RwSLFMEM and RwpPSTMEM, respectively. In addition to the special missing codes used in RwSLFMEM and RwpPSTMEM, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

The self-reported memory questions were only asked starting in Wave 3 (2012).

Differences with the RAND HRS/Harmonized HRS

Different from the HRS, in the MHAS respondents are only asked about their change of memory in the past two years, regardless of when the last interview took place or if it is the first interview.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 3: |   |
| E1A_12  | Global self-reported quality of memory                  |
| E1B_12  | Compared to 2 years ago: respondent reports his/her mem |
| Wave 4: |   |
| E1A_15  | Self-reported memory                                    |
| E1B_15  | Compared to 2 years ago: respondent reports his/her mem |
| Wave 5: |   |
| E1A_18  | Self-reported memory                                    |
| E1B_18  | Compared to 2 years ago: R reports his/her memory quali |

|                              |
|------------------------------|
| <b>Immediate Word Recall</b> |
|------------------------------|

| Wave | Variable  | Label  | Type  |
|------|-----------|--|-------|
| 1    | R1IMRC_M  | r1imrc_m: w1 R Immediate Word Recall 0-8             | Cont  |
| 2    | R2IMRC_M  | r2imrc_m: w2 R Immediate Word Recall 0-8             | Cont  |
| 3    | R3IMRC_M  | r3imrc_m: w3 R Immediate Word Recall 0-8             | Cont  |
| 4    | R4IMRC_M  | r4imrc_m: w4 R Immediate Word Recall 0-8             | Cont  |
| 5    | R5IMRC_M  | r5imrc_m: w5 R Immediate Word Recall 0-8             | Cont  |
| 1    | S1IMRC_M  | s1imrc_m: w1 S Immediate Word Recall 0-8             | Cont  |
| 2    | S2IMRC_M  | s2imrc_m: w2 S Immediate Word Recall 0-8             | Cont  |
| 3    | S3IMRC_M  | s3imrc_m: w3 S Immediate Word Recall 0-8             | Cont  |
| 4    | S4IMRC_M  | s4imrc_m: w4 S Immediate Word Recall 0-8             | Cont  |
| 5    | S5IMRC_M  | s5imrc_m: w5 S Immediate Word Recall 0-8             | Cont  |
| 1    | R1FIMRC_M | r1fimrc_m: w1 Cognition Flag R Immediate Word Recall | Categ |
| 2    | R2FIMRC_M | r2fimrc_m: w2 Cognition Flag R Immediate Word Recall | Categ |
| 3    | R3FIMRC_M | r3fimrc_m: w3 Cognition Flag R Immediate Word Recall | Categ |
| 4    | R4FIMRC_M | r4fimrc_m: w4 Cognition Flag R Immediate Word Recall | Categ |
| 5    | R5FIMRC_M | r5fimrc_m: w5 Cognition Flag R Immediate Word Recall | Categ |
| 1    | S1FIMRC_M | s1fimrc_m: w1 Cognition Flag S Immediate Word Recall | Categ |
| 2    | S2FIMRC_M | s2fimrc_m: w2 Cognition Flag S Immediate Word Recall | Categ |
| 3    | S3FIMRC_M | s3fimrc_m: w3 Cognition Flag S Immediate Word Recall | Categ |
| 4    | S4FIMRC_M | s4fimrc_m: w4 Cognition Flag S Immediate Word Recall | Categ |
| 5    | S5FIMRC_M | s5fimrc_m: w5 Cognition Flag S Immediate Word Recall | Categ |

## Descriptive Statistics

| Variable  | N     | Mean  | Std Dev | Minimum | Maximum |
|-----------|-------|-------|---------|---------|---------|
| R1IMRC_M  | 13962 | 4.76  | 1.29    | 0.00    | 8.00    |
| R2IMRC_M  | 12495 | 4.37  | 1.49    | 0.00    | 8.00    |
| R3IMRC_M  | 14448 | 4.77  | 1.25    | 0.00    | 8.00    |
| R4IMRC_M  | 13850 | 4.76  | 1.25    | 0.00    | 8.00    |
| R5IMRC_M  | 15786 | 4.85  | 1.26    | 0.00    | 8.00    |
| S1IMRC_M  | 9859  | 4.84  | 1.26    | 0.00    | 8.00    |
| S2IMRC_M  | 8728  | 4.46  | 1.46    | 0.00    | 8.00    |
| S3IMRC_M  | 9866  | 4.85  | 1.21    | 0.00    | 8.00    |
| S4IMRC_M  | 9182  | 4.83  | 1.22    | 0.00    | 8.00    |
| S5IMRC_M  | 7075  | 4.82  | 1.26    | 0.00    | 8.00    |
| R1FIMRC_M | 15186 | -0.04 | 0.34    | -1.00   | 1.00    |
| R2FIMRC_M | 13704 | -0.06 | 0.33    | -1.00   | 1.00    |
| R3FIMRC_M | 15723 | -0.05 | 0.32    | -1.00   | 1.00    |
| R4FIMRC_M | 14779 | -0.05 | 0.26    | -1.00   | 1.00    |
| R5FIMRC_M | 17114 | -0.06 | 0.30    | -1.00   | 1.00    |
| S1FIMRC_M | 10648 | -0.04 | 0.33    | -1.00   | 1.00    |
| S2FIMRC_M | 9564  | -0.06 | 0.33    | -1.00   | 1.00    |
| S3FIMRC_M | 10592 | -0.04 | 0.30    | -1.00   | 1.00    |
| S4FIMRC_M | 9652  | -0.04 | 0.23    | -1.00   | 1.00    |
| S5FIMRC_M | 7638  | -0.06 | 0.29    | -1.00   | 1.00    |

## Categorical Variable Codes

| Value-----              | R1FIMRC_M | R2FIMRC_M | R3FIMRC_M | R4FIMRC_M | R5FIMRC_M |
|-------------------------|-----------|-----------|-----------|-----------|-----------|
| -1.Missing, not imputed | 1224      | 1209      | 1275      | 929       | 1328      |
| 0.Not Imputed           | 13394     | 12128     | 14031     | 13722     | 15544     |
| 1.Imputed               | 568       | 367       | 417       | 128       | 242       |

| Value-----              | S1FIMRC_M | S2FIMRC_M | S3FIMRC_M | S4FIMRC_M | S5FIMRC_M |
|-------------------------|-----------|-----------|-----------|-----------|-----------|
| .u:Unmar                | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                | 333       | 131       | 349       | 280       | 501       |
| -1.Missing, not imputed | 789       | 836       | 726       | 470       | 563       |
| 0.Not Imputed           | 9493      | 8479      | 9591      | 9129      | 6960      |
| 1.Imputed               | 366       | 249       | 275       | 53        | 115       |

## How Constructed

RwIMRC\_M is an MHAS specific variable that provides the measure for immediate verbal recall. Respondents were asked to listen to a list of eight words and repeat as many as they could remember. Respondents are given three consecutive trials and the number of recalled words is recorded. RwIMRC\_M is the mean of the score from all three trials. RwIMRC\_M was constructed using the imputed cognitive function variables provided by MHAS. Using the method of sequence of regressions with a SAS based Imputation and Variance Estimation software (IVEware), the MHAS team completed the imputation of cognitive variables. Unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the MHAS document [\(here\)](#) titled "Imputation of Cognitive Function Variables in the Mexican Health and Aging Study 2001-2018, Version 1", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included. RwIMRC\_M is set to .p for proxy interviews. In Waves 1 and 2, RwIMRC\_M was set to .s if the cognition section was skipped because the language of the interview was different from Spanish and .m if responses are missing because they didn't complete the task but completed the rest of the interview. The variable is set to plain missing (.) for respondents who did not respond to the current wave.

RwFIMRC\_M is a flag variable indicating whether or not any component of RwIMRC\_M was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section, including proxy interviews, and this value has been left missing.

SwIMRC\_M and SwFIMRC\_M are taken from the Wave 'w' spouse's values for RwIMRC\_M and RwFIMRC\_M, respectively. In addition to the special missing codes used in RwIMRC\_M and RwFIMRC\_M, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

Different from the HRS, in the MHAS the verbal recall list contains only 8 words.

## MHAS Variables Used

### Wave 1 Imputed Cognition:

|               |   |
|---------------|---|
| E11_A1_IMP_01 | Verbal Learning List A-Trial 1: Number of Correct Words |
| E11_A2_IMP_01 | Verbal Learning List A-Trial 2: Number of Correct Words |
| E11_A3_IMP_01 | Verbal Learning List A-Trial 3: Number of Correct Words |
| E11_B1_IMP_01 | Verbal Learning List B-Trial 1: Number of Correct Words |
| E11_B2_IMP_01 | Verbal Learning List B-Trial 2: Number of Correct Words |
| E11_B3_IMP_01 | Verbal Learning List A-Trial 3: Number of Correct Words |
| E11_FLAG_01   | Verbal Learning: Flag if Imputed                        |

### Wave 2 Imputed Cognition:

|               |   |
|---------------|---|
| E9_A1_FLAG_03 | Verbal Learning List A-Trial 1: Flag if Imputed         |
| E9_A1_IMP_03  | Verbal Learning List A-Trial 1: Number of Correct Words |
| E9_A2_FLAG_03 | Verbal Learning List A-Trial 2: Flag if Imputed         |
| E9_A2_IMP_03  | Verbal Learning List A-Trial 2: Number of Correct Words |
| E9_A3_FLAG_03 | Verbal Learning List A-Trial 3: Flag if Imputed         |
| E9_A3_IMP_03  | Verbal Learning List A-Trial 3: Number of Correct Words |
| E9_B1_FLAG_03 | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E9_B1_IMP_03  | Verbal Learning List B-Trial 1: Number of Correct Words |
| E9_B2_FLAG_03 | Verbal Learning List B-Trial 1: Flag if Imputed         |

|                           |   |
|---------------------------|---|
| E9_B2_IMP_03              | Verbal Learning List B-Trial 2: Number of Correct Words |
| E9_B3_FLAG_03             | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E9_B3_IMP_03              | Verbal Learning List A-Trial 3: Number of Correct Words |
| Wave 3 Imputed Cognition: |   |
| E7_A1_FLAG_12             | Verbal Learning List A-Trial 1: Flag if Imputed         |
| E7_A1_IMP_12              | Verbal Learning List A-Trial 1: Number of Correct Words |
| E7_A2_FLAG_12             | Verbal Learning List A-Trial 2: Flag if Imputed         |
| E7_A2_IMP_12              | Verbal Learning List A-Trial 2: Number of Correct Words |
| E7_A3_FLAG_12             | Verbal Learning List A-Trial 3: Flag if Imputed         |
| E7_A3_IMP_12              | Verbal Learning List A-Trial 3: Number of Correct Words |
| E7_B1_FLAG_12             | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B1_IMP_12              | Verbal Learning List B-Trial 1: Number of Correct Words |
| E7_B2_FLAG_12             | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B2_IMP_12              | Verbal Learning List B-Trial 2: Number of Correct Words |
| E7_B3_FLAG_12             | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B3_IMP_12              | Verbal Learning List A-Trial 3: Number of Correct Words |
| Wave 4 Imputed Cognition: |   |
| E7_A1_FLAG_15             | Verbal Learning List A-Trial 1: Flag if Imputed         |
| E7_A1_IMP_15              | Verbal Learning List A-Trial 1: Number of Correct Words |
| E7_A2_FLAG_15             | Verbal Learning List A-Trial 2: Flag if Imputed         |
| E7_A2_IMP_15              | Verbal Learning List A-Trial 2: Number of Correct Words |
| E7_A3_FLAG_15             | Verbal Learning List A-Trial 3: Flag if Imputed         |
| E7_A3_IMP_15              | Verbal Learning List A-Trial 3: Number of Correct Words |
| E7_B1_FLAG_15             | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B1_IMP_15              | Verbal Learning List B-Trial 1: Number of Correct Words |
| E7_B2_FLAG_15             | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B2_IMP_15              | Verbal Learning List B-Trial 2: Number of Correct Words |
| E7_B3_FLAG_15             | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B3_IMP_15              | Verbal Learning List A-Trial 3: Number of Correct Words |
| Wave 5 Imputed Cognition: |   |
| E7_A1_FLAG_18             | Verbal Learning List A-Trial 1: Flag if Imputed         |
| E7_A1_IMP_18              | Verbal Learning List A-Trial 1: Number of Correct Words |
| E7_A2_FLAG_18             | Verbal Learning List A-Trial 2: Flag if Imputed         |
| E7_A2_IMP_18              | Verbal Learning List A-Trial 2: Number of Correct Words |
| E7_A3_FLAG_18             | Verbal Learning List A-Trial 3: Flag if Imputed         |
| E7_A3_IMP_18              | Verbal Learning List A-Trial 3: Number of Correct Words |
| E7_B1_FLAG_18             | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B1_IMP_18              | Verbal Learning List B-Trial 1: Number of Correct Words |
| E7_B2_FLAG_18             | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B2_IMP_18              | Verbal Learning List B-Trial 2: Number of Correct Words |
| E7_B3_FLAG_18             | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B3_IMP_18              | Verbal Learning List A-Trial 3: Number of Correct Words |

Delayed Word Recall

| Wave | Variable  | Label  | Type  |
|------|-----------|--|-------|
| 1    | R1DLRC_M  | r1dlrc_m: w1 R Delayed Word Recall 0-8             | Cont  |
| 2    | R2DLRC_M  | r2dlrc_m: w2 R Delayed Word Recall 0-8             | Cont  |
| 3    | R3DLRC_M  | r3dlrc_m: w3 R Delayed Word Recall 0-8             | Cont  |
| 4    | R4DLRC_M  | r4dlrc_m: w4 R Delayed Word Recall 0-8             | Cont  |
| 5    | R5DLRC_M  | r5dlrc_m: w5 R Delayed Word Recall 0-8             | Cont  |
| 1    | S1DLRC_M  | s1dlrc_m: w1 S Delayed Word Recall 0-8             | Cont  |
| 2    | S2DLRC_M  | s2dlrc_m: w2 S Delayed Word Recall 0-8             | Cont  |
| 3    | S3DLRC_M  | s3dlrc_m: w3 S Delayed Word Recall 0-8             | Cont  |
| 4    | S4DLRC_M  | s4dlrc_m: w4 S Delayed Word Recall 0-8             | Cont  |
| 5    | S5DLRC_M  | s5dlrc_m: w5 S Delayed Word Recall 0-8             | Cont  |
| 1    | R1FDLRC_M | r1fdlrc_m: w1 Cognition Flag R Delayed Word Recall | Categ |
| 2    | R2FDLRC_M | r2fdlrc_m: w2 Cognition Flag R Delayed Word Recall | Categ |
| 3    | R3FDLRC_M | r3fdlrc_m: w3 Cognition Flag R Delayed Word Recall | Categ |
| 4    | R4FDLRC_M | r4fdlrc_m: w4 Cognition Flag R Delayed Word Recall | Categ |
| 5    | R5FDLRC_M | r5fdlrc_m: w5 Cognition Flag R Delayed Word Recall | Categ |
| 1    | S1FDLRC_M | s1fdlrc_m: w1 Cognition Flag S Delayed Word Recall | Categ |
| 2    | S2FDLRC_M | s2fdlrc_m: w2 Cognition Flag S Delayed Word Recall | Categ |
| 3    | S3FDLRC_M | s3fdlrc_m: w3 Cognition Flag S Delayed Word Recall | Categ |
| 4    | S4FDLRC_M | s4fdlrc_m: w4 Cognition Flag S Delayed Word Recall | Categ |
| 5    | S5FDLRC_M | s5fdlrc_m: w5 Cognition Flag S Delayed Word Recall | Categ |

Descriptive Statistics

| Variable  | N     | Mean  | Std Dev | Minimum | Maximum |
|-----------|-------|-------|---------|---------|---------|
| R1DLRC_M  | 13962 | 5.13  | 1.86    | 0.00    | 8.00    |
| R2DLRC_M  | 12495 | 4.31  | 1.88    | 0.00    | 8.00    |
| R3DLRC_M  | 14448 | 4.44  | 2.05    | 0.00    | 8.00    |
| R4DLRC_M  | 13850 | 4.19  | 2.14    | 0.00    | 8.00    |
| R5DLRC_M  | 15786 | 4.41  | 2.01    | 0.00    | 8.00    |
| S1DLRC_M  | 9859  | 5.22  | 1.82    | 0.00    | 8.00    |
| S2DLRC_M  | 8728  | 4.39  | 1.85    | 0.00    | 8.00    |
| S3DLRC_M  | 9866  | 4.53  | 2.00    | 0.00    | 8.00    |
| S4DLRC_M  | 9182  | 4.30  | 2.09    | 0.00    | 8.00    |
| S5DLRC_M  | 7075  | 4.29  | 2.03    | 0.00    | 8.00    |
| R1FDLRC_M | 15186 | -0.04 | 0.34    | -1.00   | 1.00    |
| R2FDLRC_M | 13704 | -0.06 | 0.33    | -1.00   | 1.00    |
| R3FDLRC_M | 15723 | -0.05 | 0.33    | -1.00   | 1.00    |
| R4FDLRC_M | 14779 | -0.05 | 0.26    | -1.00   | 1.00    |
| R5FDLRC_M | 17114 | -0.06 | 0.30    | -1.00   | 1.00    |
| S1FDLRC_M | 10648 | -0.04 | 0.33    | -1.00   | 1.00    |
| S2FDLRC_M | 9564  | -0.06 | 0.33    | -1.00   | 1.00    |
| S3FDLRC_M | 10592 | -0.04 | 0.31    | -1.00   | 1.00    |
| S4FDLRC_M | 9652  | -0.04 | 0.23    | -1.00   | 1.00    |
| S5FDLRC_M | 7638  | -0.06 | 0.29    | -1.00   | 1.00    |

Categorical Variable Codes

| Value-----              | R1FDLRC_M | R2FDLRC_M | R3FDLRC_M | R4FDLRC_M | R5FDLRC_M |
|-------------------------|-----------|-----------|-----------|-----------|-----------|
| -1.Missing, not imputed | 1224      | 1209      | 1275      | 929       | 1328      |
| 0.Not Imputed           | 13394     | 12128     | 13980     | 13702     | 15544     |
| 1.Imputed               | 568       | 367       | 468       | 148       | 242       |

| Value-----              | S1FDLRC_M | S2FDLRC_M | S3FDLRC_M | S4FDLRC_M | S5FDLRC_M |
|-------------------------|-----------|-----------|-----------|-----------|-----------|
| .u:Unmar                | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                | 333       | 131       | 349       | 280       | 501       |
| -1.Missing, not imputed | 789       | 836       | 726       | 470       | 563       |
| 0.Not Imputed           | 9493      | 8479      | 9568      | 9118      | 6960      |
| 1.Imputed               | 366       | 249       | 298       | 64        | 115       |

## How Constructed

RwDLRC\_M is an MHAS specific variable that provides the measure for delayed verbal recall. Respondents were asked to repeat as many of the words as they could remember from the list provided in the immediate verbal recall task. In the delayed recall task, respondents are given only one trial. RwDLRC\_M was constructed using the imputed cognitive function variables provided by MHAS. Using the method of sequence of regressions with a SAS based Imputation and Variance Estimation software (IVEware), the MHAS team completed the imputation of cognitive variables. Unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the MHAS document ([here](#)) titled "Imputation of Cognitive Function Variables in the Mexican Health and Aging Study 2001-2018, Version 1", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included. RwDLRC\_M is set to .p for proxy interviews. In Waves 1 and 2, RwDLRC\_M was set to .s if the cognition section was skipped because the language of the interview was different from Spanish and .m if responses are missing because they didn't complete the task but completed the rest of the interview. The variable is set to plain missing (.) for respondents who did not respond to the current wave.

RwFDLRC\_M is a flag variable indicating whether any component of RwDLRC\_M was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section, including proxy interviews, and this value has been left missing.

SwDLRC\_M and SwFDLRC\_M are taken from the Wave 'w' spouse's values for RwDLRC\_M and RwFDLRC\_M, respectively. In addition to the special missing codes used in RwDLRC\_M and RwFDLRC\_M, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

Different from the HRS, in the MHAS the verbal recall list contains only 8 words.

## MHAS Variables Used

### Wave 1 Imputed Cognition:

E14\_A\_IMP\_01 Verbal Recall List A: Number of Correct Words (Imputed)  
 E14\_B\_IMP\_01 Verbal Recall List B: Number of Correct Words (Imputed)  
 E14\_FLAG\_01 Verbal Recall: Flag if Imputed

### Wave 2 Imputed Cognition:

E12\_A\_FLAG\_03 Verbal Recall List A: Flag if Imputed  
 E12\_A\_IMP\_03 Verbal Recall List A: Number of Correct Words (Imputed)  
 E12\_B\_FLAG\_03 Verbal Recall List B: Flag if Imputed  
 E12\_B\_IMP\_03 Verbal Recall List B: Number of Correct Words (Imputed)

### Wave 3 Imputed Cognition:

E14\_A\_FLAG\_12 Verbal Recall List A: Flag if Imputed  
 E14\_A\_IMP\_12 Verbal Recall List A: Number of Correct Words (Imputed)  
 E14\_B\_FLAG\_12 Verbal Recall List B: Flag if Imputed  
 E14\_B\_IMP\_12 Verbal Recall List B: Number of Correct Words (Imputed)

### Wave 4 Imputed Cognition:

E14\_A\_FLAG\_15 Verbal Recall List A: Flag if Imputed  
 E14\_A\_IMP\_15 Verbal Recall List A: Number of Correct Words (Imputed)  
 E14\_B\_FLAG\_15 Verbal Recall List B: Flag if Imputed

|                           |   |
|---------------------------|---|
| E14_B_IMP_15              | Verbal Recall List B: Number of Correct Words (Imputed) |
| Wave 5 Imputed Cognition: |   |
| E14_A_FLAG_18             | Verbal Recall List A: Flag if Imputed                   |
| E14_A_IMP_18              | Verbal Recall List A: Number of Correct Words (Imputed) |
| E14_B_FLAG_18             | Verbal Recall List B: Flag if Imputed                   |
| E14_B_IMP_18              | Verbal Recall List B: Number of Correct Words (Imputed) |



Summary Scores

| Wave | Variable | Label   | Type  |
|------|----------|---|-------|
| 1    | R1TR8_M  | r1tr8_m: w1 R Word Recall Summary Score 0-16      | Cont  |
| 2    | R2TR8_M  | r2tr8_m: w2 R Word Recall Summary Score 0-16      | Cont  |
| 3    | R3TR8_M  | r3tr8_m: w3 R Word Recall Summary Score 0-16      | Cont  |
| 4    | R4TR8_M  | r4tr8_m: w4 R Word Recall Summary Score 0-16      | Cont  |
| 5    | R5TR8_M  | r5tr8_m: w5 R Word Recall Summary Score 0-16      | Cont  |
| 1    | S1TR8_M  | s1tr8_m: w1 S Word Recall Summary Score 0-16      | Cont  |
| 2    | S2TR8_M  | s2tr8_m: w2 S Word Recall Summary Score 0-16      | Cont  |
| 3    | S3TR8_M  | s3tr8_m: w3 S Word Recall Summary Score 0-16      | Cont  |
| 4    | S4TR8_M  | s4tr8_m: w4 S Word Recall Summary Score 0-16      | Cont  |
| 5    | S5TR8_M  | s5tr8_m: w5 S Word Recall Summary Score 0-16      | Cont  |
| 1    | R1FTR8_M | r1ftr8_m: w1 Cognition Flag R Word Recall Summary | Categ |
| 2    | R2FTR8_M | r2ftr8_m: w2 Cognition Flag R Word Recall Summary | Categ |
| 3    | R3FTR8_M | r3ftr8_m: w3 Cognition Flag R Word Recall Summary | Categ |
| 4    | R4FTR8_M | r4ftr8_m: w4 Cognition Flag R Word Recall Summary | Categ |
| 5    | R5FTR8_M | r5ftr8_m: w5 Cognition Flag R Word Recall Summary | Categ |
| 1    | S1FTR8_M | s1ftr8_m: w1 Cognition Flag S Word Recall Summary | Categ |
| 2    | S2FTR8_M | s2ftr8_m: w2 Cognition Flag S Word Recall Summary | Categ |
| 3    | S3FTR8_M | s3ftr8_m: w3 Cognition Flag S Word Recall Summary | Categ |
| 4    | S4FTR8_M | s4ftr8_m: w4 Cognition Flag S Word Recall Summary | Categ |
| 5    | S5FTR8_M | s5ftr8_m: w5 Cognition Flag S Word Recall Summary | Categ |

Descriptive Statistics

| Variable | N     | Mean  | Std Dev | Minimum | Maximum |
|----------|-------|-------|---------|---------|---------|
| R1TR8_M  | 13962 | 9.89  | 2.89    | 0.00    | 16.00   |
| R2TR8_M  | 12495 | 8.68  | 3.13    | 0.00    | 16.00   |
| R3TR8_M  | 14448 | 9.21  | 2.98    | 0.00    | 16.00   |
| R4TR8_M  | 13850 | 8.95  | 3.08    | 0.00    | 16.00   |
| R5TR8_M  | 15786 | 9.26  | 2.98    | 0.00    | 16.00   |
| S1TR8_M  | 9859  | 10.05 | 2.81    | 0.00    | 16.00   |
| S2TR8_M  | 8728  | 8.85  | 3.05    | 0.00    | 16.00   |
| S3TR8_M  | 9866  | 9.38  | 2.89    | 0.00    | 16.00   |
| S4TR8_M  | 9182  | 9.13  | 3.00    | 0.00    | 16.00   |
| S5TR8_M  | 7075  | 9.11  | 2.98    | 0.00    | 16.00   |
| R1FTR8_M | 15186 | -0.04 | 0.34    | -1.00   | 1.00    |
| R2FTR8_M | 13704 | -0.06 | 0.33    | -1.00   | 1.00    |
| R3FTR8_M | 15723 | -0.05 | 0.33    | -1.00   | 1.00    |
| R4FTR8_M | 14779 | -0.05 | 0.27    | -1.00   | 1.00    |
| R5FTR8_M | 17114 | -0.06 | 0.30    | -1.00   | 1.00    |
| S1FTR8_M | 10648 | -0.04 | 0.33    | -1.00   | 1.00    |
| S2FTR8_M | 9564  | -0.06 | 0.33    | -1.00   | 1.00    |
| S3FTR8_M | 10592 | -0.04 | 0.31    | -1.00   | 1.00    |
| S4FTR8_M | 9652  | -0.04 | 0.23    | -1.00   | 1.00    |
| S5FTR8_M | 7638  | -0.06 | 0.29    | -1.00   | 1.00    |

Categorical Variable Codes

| Value-----              | R1FTR8_M | R2FTR8_M | R3FTR8_M | R4FTR8_M | R5FTR8_M |
|-------------------------|----------|----------|----------|----------|----------|
| -1.Missing, not imputed | 1224     | 1209     | 1275     | 929      | 1328     |
| 0.Not Imputed           | 13394    | 12128    | 13969    | 13698    | 15544    |
| 1.Imputed               | 568      | 367      | 479      | 152      | 242      |

| Value-----              | S1FTR8_M | S2FTR8_M | S3FTR8_M | S4FTR8_M | S5FTR8_M |
|-------------------------|----------|----------|----------|----------|----------|
| .u:Unmar                | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                | 333      | 131      | 349      | 280      | 501      |
| -1.Missing, not imputed | 789      | 836      | 726      | 470      | 563      |
| 0.Not Imputed           | 9493     | 8479     | 9560     | 9115     | 6960     |
| 1.Imputed               | 366      | 249      | 306      | 67       | 115      |

## How Constructed

RwTR8\_M is the summary score for the total word recall and it is derived from RwIMRC\_M and RwDLRC\_M. The total score ranges from 0 to 16.

`RwTR8_M = sum (RwIMRC_M, RwDLRC_M).`

RwTR8\_M was constructed using the imputed cognitive function variables provided by MHAS. Using the method of sequence of regressions with a SAS based Imputation and Variance Estimation software (IVEware), the MHAS team completed the imputation of cognitive variables. Unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the MHAS document [\(here\)](#) titled "Imputation of Cognitive Function Variables in the Mexican Health and Aging Study 2001-2018, Version 1", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

RwTR8\_M is set to .p for proxy interviews. The variable is set to plain missing (.) for respondents who did not respond to the current wave. In Waves 1 and 2, RwTR8\_M was also set to .s if the cognition section was skipped because the language of the interview was different from Spanish and .m if responses are missing because they didn't complete the task but completed the rest of the interview.

RwFTR8\_M is a flag variable indicating whether any component of RwTR8\_M was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section, including proxy interviews, and this value has been left missing.

SwTR8\_M and SwFTR8\_M are taken from the Wave 'w' spouse's value RwTR8\_M and RwFTR8\_M, respectively. In addition to the special missing codes used in RwTR8\_M and RwFTR8\_M, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

Different from the HRS, in the MHAS the verbal recall list contains only 8 words.

## MHAS Variables Used

Wave 1 Imputed Cognition:

|               |   |
|---------------|---|
| E11_A1_IMP_01 | Verbal Learning List A-Trial 1: Number of Correct Words |
| E11_A2_IMP_01 | Verbal Learning List A-Trial 2: Number of Correct Words |
| E11_A3_IMP_01 | Verbal Learning List A-Trial 3: Number of Correct Words |
| E11_B1_IMP_01 | Verbal Learning List B-Trial 1: Number of Correct Words |
| E11_B2_IMP_01 | Verbal Learning List B-Trial 2: Number of Correct Words |
| E11_B3_IMP_01 | Verbal Learning List A-Trial 3: Number of Correct Words |
| E11_FLAG_01   | Verbal Learning: Flag if Imputed                        |
| E14_A_IMP_01  | Verbal Recall List A: Number of Correct Words (Imputed) |
| E14_B_IMP_01  | Verbal Recall List B: Number of Correct Words (Imputed) |
| E14_FLAG_01   | Verbal Recall: Flag if Imputed                          |

Wave 2 Imputed Cognition:

|               |   |
|---------------|---|
| E12_A_FLAG_03 | Verbal Recall List A: Flag if Imputed                   |
| E12_A_IMP_03  | Verbal Recall List A: Number of Correct Words (Imputed) |
| E12_B_FLAG_03 | Verbal Recall List B: Flag if Imputed                   |

|               |   |
|---------------|---|
| E12_B_IMP_03  | Verbal Recall List B: Number of Correct Words (Imputed) |
| E9_A1_FLAG_03 | Verbal Learning List A-Trial 1: Flag if Imputed         |
| E9_A1_IMP_03  | Verbal Learning List A-Trial 1: Number of Correct Words |
| E9_A2_FLAG_03 | Verbal Learning List A-Trial 2: Flag if Imputed         |
| E9_A2_IMP_03  | Verbal Learning List A-Trial 2: Number of Correct Words |
| E9_A3_FLAG_03 | Verbal Learning List A-Trial 3: Flag if Imputed         |
| E9_A3_IMP_03  | Verbal Learning List A-Trial 3: Number of Correct Words |
| E9_B1_FLAG_03 | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E9_B1_IMP_03  | Verbal Learning List B-Trial 1: Number of Correct Words |
| E9_B2_FLAG_03 | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E9_B2_IMP_03  | Verbal Learning List B-Trial 2: Number of Correct Words |
| E9_B3_FLAG_03 | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E9_B3_IMP_03  | Verbal Learning List A-Trial 3: Number of Correct Words |

Wave 3 Imputed Cognition:

|               |   |
|---------------|---|
| E14_A_FLAG_12 | Verbal Recall List A: Flag if Imputed                   |
| E14_A_IMP_12  | Verbal Recall List A: Number of Correct Words (Imputed) |
| E14_B_FLAG_12 | Verbal Recall List B: Flag if Imputed                   |
| E14_B_IMP_12  | Verbal Recall List B: Number of Correct Words (Imputed) |
| E7_A1_FLAG_12 | Verbal Learning List A-Trial 1: Flag if Imputed         |
| E7_A1_IMP_12  | Verbal Learning List A-Trial 1: Number of Correct Words |
| E7_A2_FLAG_12 | Verbal Learning List A-Trial 2: Flag if Imputed         |
| E7_A2_IMP_12  | Verbal Learning List A-Trial 2: Number of Correct Words |
| E7_A3_FLAG_12 | Verbal Learning List A-Trial 3: Flag if Imputed         |
| E7_A3_IMP_12  | Verbal Learning List A-Trial 3: Number of Correct Words |
| E7_B1_FLAG_12 | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B1_IMP_12  | Verbal Learning List B-Trial 1: Number of Correct Words |
| E7_B2_FLAG_12 | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B2_IMP_12  | Verbal Learning List B-Trial 2: Number of Correct Words |
| E7_B3_FLAG_12 | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B3_IMP_12  | Verbal Learning List A-Trial 3: Number of Correct Words |

Wave 4 Imputed Cognition:

|               |   |
|---------------|---|
| E14_A_FLAG_15 | Verbal Recall List A: Flag if Imputed                   |
| E14_A_IMP_15  | Verbal Recall List A: Number of Correct Words (Imputed) |
| E14_B_FLAG_15 | Verbal Recall List B: Flag if Imputed                   |
| E14_B_IMP_15  | Verbal Recall List B: Number of Correct Words (Imputed) |
| E7_A1_FLAG_15 | Verbal Learning List A-Trial 1: Flag if Imputed         |
| E7_A1_IMP_15  | Verbal Learning List A-Trial 1: Number of Correct Words |
| E7_A2_FLAG_15 | Verbal Learning List A-Trial 2: Flag if Imputed         |
| E7_A2_IMP_15  | Verbal Learning List A-Trial 2: Number of Correct Words |
| E7_A3_FLAG_15 | Verbal Learning List A-Trial 3: Flag if Imputed         |
| E7_A3_IMP_15  | Verbal Learning List A-Trial 3: Number of Correct Words |
| E7_B1_FLAG_15 | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B1_IMP_15  | Verbal Learning List B-Trial 1: Number of Correct Words |
| E7_B2_FLAG_15 | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B2_IMP_15  | Verbal Learning List B-Trial 2: Number of Correct Words |
| E7_B3_FLAG_15 | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B3_IMP_15  | Verbal Learning List A-Trial 3: Number of Correct Words |

Wave 5 Imputed Cognition:

|               |   |
|---------------|---|
| E14_A_FLAG_18 | Verbal Recall List A: Flag if Imputed                   |
| E14_A_IMP_18  | Verbal Recall List A: Number of Correct Words (Imputed) |
| E14_B_FLAG_18 | Verbal Recall List B: Flag if Imputed                   |
| E14_B_IMP_18  | Verbal Recall List B: Number of Correct Words (Imputed) |
| E7_A1_FLAG_18 | Verbal Learning List A-Trial 1: Flag if Imputed         |
| E7_A1_IMP_18  | Verbal Learning List A-Trial 1: Number of Correct Words |
| E7_A2_FLAG_18 | Verbal Learning List A-Trial 2: Flag if Imputed         |
| E7_A2_IMP_18  | Verbal Learning List A-Trial 2: Number of Correct Words |
| E7_A3_FLAG_18 | Verbal Learning List A-Trial 3: Flag if Imputed         |
| E7_A3_IMP_18  | Verbal Learning List A-Trial 3: Number of Correct Words |
| E7_B1_FLAG_18 | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B1_IMP_18  | Verbal Learning List B-Trial 1: Number of Correct Words |
| E7_B2_FLAG_18 | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B2_IMP_18  | Verbal Learning List B-Trial 2: Number of Correct Words |
| E7_B3_FLAG_18 | Verbal Learning List B-Trial 1: Flag if Imputed         |
| E7_B3_IMP_18  | Verbal Learning List A-Trial 3: Number of Correct Words |

|                        |
|------------------------|
| <b>Picture Drawing</b> |
|------------------------|

| Wave | Variable  | Label  | Type  |
|------|-----------|--|-------|
| 1    | R1IDRAW2  | r1ldraw2: w1 R Picture Drawing immediate 2 fig         | Cont  |
| 2    | R2IDRAW2  | r2ldraw2: w2 R Picture Drawing immediate 2 fig         | Cont  |
| 1    | S1IDRAW2  | s1ldraw2: w1 S Picture Drawing immediate 2 fig         | Cont  |
| 2    | S2IDRAW2  | s2ldraw2: w2 S Picture Drawing immediate 2 fig         | Cont  |
| 1    | R1FIDRAW2 | r1fidraw2: w1 Cognition Flag R Picture Drawing         | Categ |
| 2    | R2FIDRAW2 | r2fidraw2: w2 Cognition Flag R Picture Drawing         | Categ |
| 1    | S1FIDRAW2 | s1fidraw2: w1 Cognition Flag S Picture Drawing         | Categ |
| 2    | S2FIDRAW2 | s2fidraw2: w2 Cognition Flag S Picture Drawing         | Categ |
| 3    | R3IDRAW1  | r3ldraw1: w3 R Picture Drawing immediate 1 fig         | Cont  |
| 4    | R4IDRAW1  | r4ldraw1: w4 R Picture Drawing immediate 1 fig         | Cont  |
| 5    | R5IDRAW1  | r5ldraw1: w5 R Picture Drawing immediate 1 fig         | Cont  |
| 3    | S3IDRAW1  | s3ldraw1: w3 S Picture Drawing immediate 1 fig         | Cont  |
| 4    | S4IDRAW1  | s4ldraw1: w4 S Picture Drawing immediate 1 fig         | Cont  |
| 5    | S5IDRAW1  | s5ldraw1: w5 S Picture Drawing immediate 1 fig         | Cont  |
| 3    | R3FIDRAW1 | r3fidraw1: w3 Cognition Flag R Picture Drawing         | Categ |
| 4    | R4FIDRAW1 | r4fidraw1: w4 Cognition Flag R Picture Drawing         | Categ |
| 5    | R5FIDRAW1 | r5fidraw1: w5 Cognition Flag R Picture Drawing         | Categ |
| 3    | S3FIDRAW1 | s3fidraw1: w3 Cognition Flag S Picture Drawing         | Categ |
| 4    | S4FIDRAW1 | s4fidraw1: w4 Cognition Flag S Picture Drawing         | Categ |
| 5    | S5FIDRAW1 | s5fidraw1: w5 Cognition Flag S Picture Drawing         | Categ |
| 1    | R1DDRAW2  | r1ddraw2: w1 R Picture Drawing delayed 2 fig           | Cont  |
| 2    | R2DDRAW2  | r2ddraw2: w2 R Picture Drawing delayed 2 fig           | Cont  |
| 1    | S1DDRAW2  | s1ddraw2: w1 S Picture Drawing delayed 2 fig           | Cont  |
| 2    | S2DDRAW2  | s2ddraw2: w2 S Picture Drawing delayed 2 fig           | Cont  |
| 1    | R1FDDRAW2 | r1fddraw2: w1 Cognition Flag R Delayed Picture Drawing | Categ |
| 2    | R2FDDRAW2 | r2fddraw2: w2 Cognition Flag R Delayed Picture Drawing | Categ |
| 1    | S1FDDRAW2 | s1fddraw2: w1 Cognition Flag S Delayed Picture Drawing | Categ |
| 2    | S2FDDRAW2 | s2fddraw2: w2 Cognition Flag S Delayed Picture Drawing | Categ |
| 3    | R3DDRAW1  | r3ddraw1: w3 R Picture Drawing delayed 1 fig           | Cont  |
| 4    | R4DDRAW1  | r4ddraw1: w4 R Picture Drawing delayed 1 fig           | Cont  |
| 5    | R5DDRAW1  | r5ddraw1: w5 R Picture Drawing delayed 1 fig           | Cont  |
| 3    | S3DDRAW1  | s3ddraw1: w3 S Picture Drawing delayed 1 fig           | Cont  |
| 4    | S4DDRAW1  | s4ddraw1: w4 S Picture Drawing delayed 1 fig           | Cont  |
| 5    | S5DDRAW1  | s5ddraw1: w5 S Picture Drawing delayed 1 fig           | Cont  |
| 3    | R3FDDRAW1 | r3fddraw1: w3 Cognition Flag R Delayed Picture Drawing | Categ |
| 4    | R4FDDRAW1 | r4fddraw1: w4 Cognition Flag R Delayed Picture Drawing | Categ |
| 5    | R5FDDRAW1 | r5fddraw1: w5 Cognition Flag R Delayed Picture Drawing | Categ |
| 3    | S3FDDRAW1 | s3fddraw1: w3 Cognition Flag S Delayed Picture Drawing | Categ |
| 4    | S4FDDRAW1 | s4fddraw1: w4 Cognition Flag S Delayed Picture Drawing | Categ |
| 5    | S5FDDRAW1 | s5fddraw1: w5 Cognition Flag S Delayed Picture Drawing | Categ |

## Descriptive Statistics

| Variable  | N     | Mean  | Std Dev | Minimum | Maximum |
|-----------|-------|-------|---------|---------|---------|
| R1IDRAW2  | 13962 | 1.55  | 0.73    | 0.00    | 2.00    |
| R2IDRAW2  | 12495 | 1.62  | 0.65    | 0.00    | 2.00    |
| S1IDRAW2  | 9859  | 1.62  | 0.68    | 0.00    | 2.00    |
| S2IDRAW2  | 8728  | 1.68  | 0.61    | 0.00    | 2.00    |
| R1FIDRAW2 | 15186 | 0.01  | 0.41    | -1.00   | 1.00    |
| R2FIDRAW2 | 13704 | 0.03  | 0.45    | -1.00   | 1.00    |
| S1FIDRAW2 | 10648 | 0.00  | 0.39    | -1.00   | 1.00    |
| S2FIDRAW2 | 9564  | 0.01  | 0.43    | -1.00   | 1.00    |
| R3IDRAW1  | 14448 | 5.38  | 1.31    | 0.00    | 6.00    |
| R4IDRAW1  | 13850 | 5.47  | 1.14    | 0.00    | 6.00    |
| R5IDRAW1  | 15786 | 5.52  | 1.02    | 0.00    | 6.00    |
| S3IDRAW1  | 9866  | 5.46  | 1.24    | 0.00    | 6.00    |
| S4IDRAW1  | 9182  | 5.56  | 1.03    | 0.00    | 6.00    |
| S5IDRAW1  | 7075  | 5.51  | 1.03    | 0.00    | 6.00    |
| R3FIDRAW1 | 15723 | 0.00  | 0.41    | -1.00   | 1.00    |
| R4FIDRAW1 | 14779 | 0.00  | 0.36    | -1.00   | 1.00    |
| R5FIDRAW1 | 17114 | -0.01 | 0.38    | -1.00   | 1.00    |
| S3FIDRAW1 | 10592 | 0.00  | 0.38    | -1.00   | 1.00    |
| S4FIDRAW1 | 9652  | 0.00  | 0.32    | -1.00   | 1.00    |
| S5FIDRAW1 | 7638  | -0.01 | 0.38    | -1.00   | 1.00    |
| R1DDRAW2  | 13962 | 0.73  | 0.81    | 0.00    | 2.00    |
| R2DDRAW2  | 12495 | 0.76  | 0.81    | 0.00    | 2.00    |
| S1DDRAW2  | 9859  | 0.81  | 0.83    | 0.00    | 2.00    |
| S2DDRAW2  | 8728  | 0.84  | 0.82    | 0.00    | 2.00    |
| R1FDDRAW2 | 15186 | 0.02  | 0.42    | -1.00   | 1.00    |
| R2FDDRAW2 | 13704 | 0.04  | 0.46    | -1.00   | 1.00    |
| S1FDDRAW2 | 10648 | 0.01  | 0.40    | -1.00   | 1.00    |
| S2FDDRAW2 | 9564  | 0.02  | 0.44    | -1.00   | 1.00    |
| R3DDRAW1  | 14448 | 4.63  | 1.78    | 0.00    | 6.00    |
| R4DDRAW1  | 13850 | 4.70  | 1.75    | 0.00    | 6.00    |
| R5DDRAW1  | 15786 | 4.86  | 1.54    | 0.00    | 6.00    |
| S3DDRAW1  | 9866  | 4.77  | 1.71    | 0.00    | 6.00    |
| S4DDRAW1  | 9182  | 4.85  | 1.66    | 0.00    | 6.00    |
| S5DDRAW1  | 7075  | 4.85  | 1.54    | 0.00    | 6.00    |
| R3FDDRAW1 | 15723 | 0.01  | 0.42    | -1.00   | 1.00    |
| R4FDDRAW1 | 14779 | 0.01  | 0.37    | -1.00   | 1.00    |
| R5FDDRAW1 | 17114 | 0.02  | 0.42    | -1.00   | 1.00    |
| S3FDDRAW1 | 10592 | 0.01  | 0.39    | -1.00   | 1.00    |
| S4FDDRAW1 | 9652  | 0.01  | 0.33    | -1.00   | 1.00    |
| S5FDDRAW1 | 7638  | 0.03  | 0.42    | -1.00   | 1.00    |

Categorical Variable Codes

|                         |           |           |
|-------------------------|-----------|-----------|
| Value-----              | R1FIDRAW2 | R2FIDRAW2 |
| -1.Missing, not imputed | 1224      | 1209      |
| 0.Not Imputed           | 12597     | 10922     |
| 1.Imputed               | 1365      | 1573      |

|                         |           |           |           |           |           |
|-------------------------|-----------|-----------|-----------|-----------|-----------|
| Value-----              | S1FIDRAW2 | S2FIDRAW2 |           |           |           |
| .u:Unmar                | 4205      | 4009      |           |           |           |
| .v:SP NR                | 333       | 131       |           |           |           |
| -1.Missing, not imputed | 789       | 836       |           |           |           |
| 0.Not Imputed           | 9033      | 7782      |           |           |           |
| 1.Imputed               | 826       | 946       |           |           |           |
| Value-----              |           |           | R3FIDRAW1 | R4FIDRAW1 | R5FIDRAW1 |
| -1.Missing, not imputed |           |           | 1275      | 929       | 1328      |
| 0.Not Imputed           |           |           | 13116     | 12868     | 14586     |
| 1.Imputed               |           |           | 1332      | 982       | 1200      |
| Value-----              |           |           | S3FIDRAW1 | S4FIDRAW1 | S5FIDRAW1 |
| .u:Unmar                |           |           | 4782      | 4847      | 5227      |
| .v:SP NR                |           |           | 349       | 280       | 501       |
| -1.Missing, not imputed |           |           | 726       | 470       | 563       |
| 0.Not Imputed           |           |           | 9097      | 8666      | 6555      |
| 1.Imputed               |           |           | 769       | 516       | 520       |
| Value-----              | R1FDDRAW2 | R2FDDRAW2 |           |           |           |
| -1.Missing, not imputed | 1224      | 1209      |           |           |           |
| 0.Not Imputed           | 12486     | 10789     |           |           |           |
| 1.Imputed               | 1476      | 1706      |           |           |           |
| Value-----              | S1FDDRAW2 | S2FDDRAW2 |           |           |           |
| .u:Unmar                | 4205      | 4009      |           |           |           |
| .v:SP NR                | 333       | 131       |           |           |           |
| -1.Missing, not imputed | 789       | 836       |           |           |           |
| 0.Not Imputed           | 8975      | 7698      |           |           |           |
| 1.Imputed               | 884       | 1030      |           |           |           |
| Value-----              |           |           | R3FDDRAW1 | R4FDDRAW1 | R5FDDRAW1 |
| -1.Missing, not imputed |           |           | 1275      | 929       | 1328      |
| 0.Not Imputed           |           |           | 12938     | 12757     | 14059     |
| 1.Imputed               |           |           | 1510      | 1093      | 1727      |
| Value-----              |           |           | S3FDDRAW1 | S4FDDRAW1 | S5FDDRAW1 |
| .u:Unmar                |           |           | 4782      | 4847      | 5227      |
| .v:SP NR                |           |           | 349       | 280       | 501       |
| -1.Missing, not imputed |           |           | 726       | 470       | 563       |
| 0.Not Imputed           |           |           | 9000      | 8602      | 6317      |
| 1.Imputed               |           |           | 866       | 580       | 758       |

## How Constructed

RwIDRAW2, RwIDRAW1, RwDDRAW2, and RwDDRAW1 provide the score for the visuospatial tasks. RwIDRAW2 and RwDDRAW2 were only created for Waves 1 and 2 when respondents were presented two geometrical figures. Starting in Wave 3, respondents were only presented one geometrical figure and asked to copy it within 90 seconds.

RwIDRAW2 and RwIDRAW1 indicate the immediate visuospatial task score after the respondents were presented the geometrical figures (or figure) and asked to copy the figures within 90 seconds, each figure. RwDDRAW2 and RwDDRAW1 indicate the delayed visuospatial task score after the respondents were asked to draw the figures (or figure) they were shown before within 90 seconds, each figure.

RwIDRAW2, RwIDRAW1, RwDDRAW2, and RwDDRAW1 were constructed using the imputed cognitive function variables provided by MHAS. Using the method of sequence of regressions with a SAS based Imputation and Variance Estimation software (IVEware), the MHAS team completed the imputation of cognitive variables. Unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the MHAS document ([here](#)) titled "Imputation of Cognitive Function Variables in the Mexican Health and Aging Study 2001-2018, Version 1", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

The variables are set to .p for proxy interviews. In Waves 1 and 2, RwIDRAW2 and RwDDRAW2 were set to .s if the cognition section was skipped because the language of the interview was different from Spanish and .m if responses are missing because they didn't complete the task but completed the rest of the interview. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

RwFIDRAW2, RwFIDRAW1, RwFDDRAW2, and RwFDDRAW1 are flag variables indicating whether any component of RwIDRAW2, RwIDRAW1, RwDDRAW2, and RwDDRAW1, respectively, was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section, including proxy interviews, and this value has been left missing.

SwIDRAW2, SwIDRAW1, SwDDRAW2, SwDDRAW1, SwFIDRAW2, SwFIDRAW1, SwFDDRAW2, and SwFDDRAW1 are taken from the Wave 'w' spouse's values for RwIDRAW2, RwIDRAW1, RwDDRAW2, RwDDRAW1, RwFIDRAW2, RwFIDRAW1, RwFDDRAW2, and RwFDDRAW1, respectively. In addition to the special missing codes used in RwIDRAW2, RwIDRAW1, RwDDRAW2, RwDDRAW1, RwFIDRAW2, RwFIDRAW1, RwFDDRAW2, and RwFDDRAW1, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

Since the visuospatial tasks changed across the waves, two variables were defined: RwDDRAW2 and RwDDRAW1. The changes include presenting two figures in Waves 1 and 2 and presenting only one figure starting in Wave 3. Also, starting in Wave 3 a new scoring was used to allow for comparison of the results between waves. The following equivalence will allow for comparison of the results in RwDDRAW2 and RwDDRAW1.

RwDDRAW1 = 0, 1, or 2 is equal RwDDRAW2 = 0

RwDDRAW1 = 3 or 4 is equal RwDDRAW2 = 1

RwDDRAW1 = 5 or 6 is equal RwDDRAW2 = 2

## Differences with the RAND HRS/Harmonized HRS

The HRS does not include the visuospatial tasks.

## MHAS Variables Used

### Wave 1 Imputed Cognition:

|               |   |
|---------------|---|
| E13_FLAG_01   | Constructional Praxis Recall: Flag if Imputed |
| E13_IMP_01    | Constructional Praxis Recall (Imputed)        |
| E8_E9_FLAG_01 | Constructional Praxis: Flag if Imputed        |
| E8_E9_IMP_01  | Constructional Praxis (Imputed)               |

### Wave 2 Imputed Cognition:

|               |   |
|---------------|---|
| E11_FLAG_03   | Constructional Praxis Recall: Flag if Imputed |
| E11_IMP_03    | Constructional Praxis Recall (Imputed)        |
| E6_E7_FLAG_03 | Constructional Praxis: Flag if Imputed        |
| E6_E7_IMP_03  | Constructional Praxis (Imputed)               |

### Wave 3 Imputed Cognition:

|             |   |
|-------------|---|
| E13_FLAG_12 | Constructional Praxis Recall: Flag if Imputed |
| E13_IMP_12  | Constructional Praxis Recall (Imputed)        |
| E8_FLAG_12  | Constructional Praxis: Flag if Imputed        |
| E8_IMP_12   | Constructional Praxis (Imputed)               |

### Wave 4 Imputed Cognition:

|             |   |
|-------------|---|
| E13_FLAG_15 | Constructional Praxis Recall: Flag if Imputed |
| E13_IMP_15  | Constructional Praxis Recall (Imputed)        |
| E8_FLAG_15  | Constructional Praxis: Flag if Imputed        |
| E8_IMP_15   | Constructional Praxis (Imputed)               |

### Wave 5 Imputed Cognition:

|             |   |
|-------------|---|
| E13_FLAG_18 | Constructional Praxis Recall: Flag if Imputed |
| E13_IMP_18  | Constructional Praxis Recall (Imputed)        |
| E8_FLAG_18  | Constructional Praxis: Flag if Imputed        |
| E8_IMP_18   | Constructional Praxis (Imputed)               |

Verbal Fluency

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 3    | R3VERBF  | r3verbf: w3 R Verbal Fluency Score           | Cont  |
| 4    | R4VERBF  | r4verbf: w4 R Verbal Fluency Score           | Cont  |
| 5    | R5VERBF  | r5verbf: w5 R Verbal Fluency Score           | Cont  |
| 3    | S3VERBF  | s3verbf: w3 S Verbal Fluency Score           | Cont  |
| 4    | S4VERBF  | s4verbf: w4 S Verbal Fluency Score           | Cont  |
| 5    | S5VERBF  | s5verbf: w5 S Verbal Fluency Score           | Cont  |
| 3    | R3FVERBF | r3fverbf: w3 Cognition Flag R Verbal Fluency | Categ |
| 4    | R4FVERBF | r4fverbf: w4 Cognition Flag R Verbal Fluency | Categ |
| 5    | R5FVERBF | r5fverbf: w5 Cognition Flag R Verbal Fluency | Categ |
| 3    | S3FVERBF | s3fverbf: w3 Cognition Flag S Verbal Fluency | Categ |
| 4    | S4FVERBF | s4fverbf: w4 Cognition Flag S Verbal Fluency | Categ |
| 5    | S5FVERBF | s5fverbf: w5 Cognition Flag S Verbal Fluency | Categ |

Descriptive Statistics

| Variable | N     | Mean  | Std Dev | Minimum | Maximum |
|----------|-------|-------|---------|---------|---------|
| R3VERBF  | 14448 | 15.04 | 5.15    | 0.00    | 66.00   |
| R4VERBF  | 13850 | 15.51 | 5.24    | 0.00    | 40.00   |
| R5VERBF  | 15786 | 15.71 | 5.25    | 0.00    | 30.00   |
| S3VERBF  | 9866  | 15.41 | 5.10    | 0.00    | 66.00   |
| S4VERBF  | 9182  | 15.93 | 5.18    | 0.00    | 40.00   |
| S5VERBF  | 7075  | 15.50 | 5.11    | 0.00    | 30.00   |
| R3FVERBF | 15723 | -0.05 | 0.32    | -1.00   | 1.00    |
| R4FVERBF | 14779 | -0.05 | 0.26    | -1.00   | 1.00    |
| R5FVERBF | 17114 | -0.05 | 0.32    | -1.00   | 1.00    |
| S3FVERBF | 10592 | -0.04 | 0.30    | -1.00   | 1.00    |
| S4FVERBF | 9652  | -0.04 | 0.23    | -1.00   | 1.00    |
| S5FVERBF | 7638  | -0.05 | 0.31    | -1.00   | 1.00    |

Categorical Variable Codes

|                         |          |          |          |
|-------------------------|----------|----------|----------|
| Value-----              | R3FVERBF | R4FVERBF | R5FVERBF |
| -1.Missing, not imputed | 1275     | 929      | 1328     |
| 0.Not Imputed           | 14020    | 13730    | 15297    |
| 1.Imputed               | 428      | 120      | 489      |
| Value-----              | S3FVERBF | S4FVERBF | S5FVERBF |
| .u:Unmar                | 4782     | 4847     | 5227     |
| .v:SP NR                | 349      | 280      | 501      |
| -1.Missing, not imputed | 726      | 470      | 563      |
| 0.Not Imputed           | 9592     | 9131     | 6871     |
| 1.Imputed               | 274      | 51       | 204      |

How Constructed

RwVERBF is the verbal fluency score. Respondents were asked to name all the animals they can within a time span of one minute. Interviewers are asked to count the number of different animals the respondent was able to name. RwVERBF is the count of the number of different animal names. RwVERBF is constructed using the imputed cognitive function variables provided by MHAS. Using the method of sequence of regressions with a SAS based Imputation and Variance Estimation software (IVEware), the MHAS team completed the imputation of cognitive variables. Unknown amounts were replaced with imputed values using



the imputed variables made available in the study website. Please see the MHAS document [\(here\)](#) titled "Imputation of Cognitive Function Variables in the Mexican Health and Aging Study 2001-2018, Version 1", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included. RwVERBF is set to .p for proxy interviews. The variable is plain missing (.) for respondents who did not respond to the current wave.

The verbal fluency questions were only asked starting in Wave 3 (2012).

RwFVERBF is a flag variable indicating whether any component of RwVERBF was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section, including proxy interviews, and this value has been left missing.

SwVERBF and SwFVERBF are taken from the Wave 'w' spouse's value for RwVERBF and RwFVERBF, respectively. In addition to the special missing codes used in RwVERBF and RwFVERBF, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

The verbal fluency questions were only asked starting in Wave 3 (2012).

## Differences with the RAND HRS/Harmonized HRS

Verbal fluency using animal naming questions was added to the HRS survey in 2010. A non-imputed version of verbal fluency is currently available in the Harmonized HRS data set.

## MHAS Variables Used

### Wave 3 Imputed Cognition:

|             |   |
|-------------|---|
| E9A_FLAG_12 | Verbal Fluency - Number of different animals: Flag if I |
| E9A_IMP_12  | Verbal Fluency - Number of different animals (Imputed)  |

### Wave 4 Imputed Cognition:

|             |   |
|-------------|---|
| E9A_FLAG_15 | Verbal Fluency - Number of different animals: Flag if I |
| E9A_IMP_15  | Verbal Fluency - Number of different animals (Imputed)  |

### Wave 5 Imputed Cognition:

|             |   |
|-------------|---|
| E9A_FLAG_18 | Verbal Fluency - Number of different animals: Flag if I |
| E9A_IMP_18  | Verbal Fluency - Number of different animals (Imputed)  |

Visual Scanning

| Wave | Variable | Label   | Type  |
|------|----------|---|-------|
| 1    | R1VSCAN  | r1vscan: w1 R Visual Scanning                 | Cont  |
| 2    | R2VSCAN  | r2vscan: w2 R Visual Scanning                 | Cont  |
| 3    | R3VSCAN  | r3vscan: w3 R Visual Scanning                 | Cont  |
| 4    | R4VSCAN  | r4vscan: w4 R Visual Scanning                 | Cont  |
| 5    | R5VSCAN  | r5vscan: w5 R Visual Scanning                 | Cont  |
| 1    | S1VSCAN  | s1vscan: w1 S Visual Scanning                 | Cont  |
| 2    | S2VSCAN  | s2vscan: w2 S Visual Scanning                 | Cont  |
| 3    | S3VSCAN  | s3vscan: w3 S Visual Scanning                 | Cont  |
| 4    | S4VSCAN  | s4vscan: w4 S Visual Scanning                 | Cont  |
| 5    | S5VSCAN  | s5vscan: w5 S Visual Scanning                 | Cont  |
| 1    | R1FVSCAN | r1fvscan: w1 Cognition Flag R Visual Scanning | Categ |
| 2    | R2FVSCAN | r2fvscan: w2 Cognition Flag R Visual Scanning | Categ |
| 3    | R3FVSCAN | r3fvscan: w3 Cognition Flag R Visual Scanning | Categ |
| 4    | R4FVSCAN | r4fvscan: w4 Cognition Flag R Visual Scanning | Categ |
| 5    | R5FVSCAN | r5fvscan: w5 Cognition Flag R Visual Scanning | Categ |
| 1    | S1FVSCAN | s1fvscan: w1 Cognition Flag S Visual Scanning | Categ |
| 2    | S2FVSCAN | s2fvscan: w2 Cognition Flag S Visual Scanning | Categ |
| 3    | S3FVSCAN | s3fvscan: w3 Cognition Flag S Visual Scanning | Categ |
| 4    | S4FVSCAN | s4fvscan: w4 Cognition Flag S Visual Scanning | Categ |
| 5    | S5FVSCAN | s5fvscan: w5 Cognition Flag S Visual Scanning | Categ |

Descriptive Statistics

| Variable | N     | Mean  | Std Dev | Minimum | Maximum |
|----------|-------|-------|---------|---------|---------|
| R1VSCAN  | 13962 | 24.77 | 15.92   | 0.00    | 60.00   |
| R2VSCAN  | 12495 | 24.17 | 15.99   | 0.00    | 60.00   |
| R3VSCAN  | 14448 | 28.22 | 15.36   | 0.00    | 60.00   |
| R4VSCAN  | 13850 | 28.40 | 15.93   | 0.00    | 60.00   |
| R5VSCAN  | 15786 | 30.75 | 16.14   | 0.00    | 60.00   |
| S1VSCAN  | 9859  | 26.26 | 15.79   | 0.00    | 60.00   |
| S2VSCAN  | 8728  | 25.61 | 15.95   | 0.00    | 60.00   |
| S3VSCAN  | 9866  | 29.53 | 15.19   | 0.00    | 60.00   |
| S4VSCAN  | 9182  | 30.04 | 15.59   | 0.00    | 60.00   |
| S5VSCAN  | 7075  | 29.20 | 15.59   | 0.00    | 60.00   |
| R1FVSCAN | 15186 | 0.01  | 0.41    | -1.00   | 1.00    |
| R2FVSCAN | 13704 | -0.02 | 0.39    | -1.00   | 1.00    |
| R3FVSCAN | 15723 | 0.01  | 0.41    | -1.00   | 1.00    |
| R4FVSCAN | 14779 | 0.00  | 0.36    | -1.00   | 1.00    |
| R5FVSCAN | 17114 | 0.00  | 0.39    | -1.00   | 1.00    |
| S1FVSCAN | 10648 | -0.00 | 0.38    | -1.00   | 1.00    |
| S2FVSCAN | 9564  | -0.03 | 0.38    | -1.00   | 1.00    |
| S3FVSCAN | 10592 | 0.00  | 0.37    | -1.00   | 1.00    |
| S4FVSCAN | 9652  | 0.00  | 0.32    | -1.00   | 1.00    |
| S5FVSCAN | 7638  | 0.00  | 0.39    | -1.00   | 1.00    |

Categorical Variable Codes

| Value-----              | R1FVSCAN | R2FVSCAN | R3FVSCAN | R4FVSCAN | R5FVSCAN |
|-------------------------|----------|----------|----------|----------|----------|
| -1.Missing, not imputed | 1224     | 1209     | 1275     | 929      | 1328     |
| 0.Not Imputed           | 12647    | 11583    | 13078    | 12858    | 14449    |
| 1.Imputed               | 1315     | 912      | 1370     | 992      | 1337     |

| Value-----              | S1FVSCAN | S2FVSCAN | S3FVSCAN | S4FVSCAN | S5FVSCAN |
|-------------------------|----------|----------|----------|----------|----------|
| .u:Unmar                | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                | 333      | 131      | 349      | 280      | 501      |
| -1.Missing, not imputed | 789      | 836      | 726      | 470      | 563      |
| 0.Not Imputed           | 9082     | 8162     | 9103     | 8666     | 6497     |
| 1.Imputed               | 777      | 566      | 763      | 516      | 578      |

## How Constructed

RwVSCAN is the visual scanning score, ranging from 0 to 60. Respondents were asked to circle all figures that are identical to a specific stimulus shown previously within an array of different stimuli. Respondents were given 60 seconds to complete this task. RwVSCAN is constructed using the imputed cognitive function variables provided by MHAS. Using the method of sequence of regressions with a SAS based Imputation and Variance Estimation software (IVEware), the MHAS team completed the imputation of cognitive variables. Unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the MHAS document [\(here\)](#) titled "Imputation of Cognitive Function Variables in the Mexican Health and Aging Study 2001-2018, Version 1", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included. These variables are set to .p for proxy interviews. The variable is plain missing (.) for respondents who did not respond to the current wave. In Waves 1 and 2, RwVSCAN was also set to .s if the cognition section was skipped because the language of the interview was different from Spanish and .m if responses are missing because they didn't complete the task but completed the rest of the interview.

RwFVSCAN is a flag variable indicating whether any component of RwVSCAN was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section, including proxy interviews, and this value has been left missing.

SwVSCAN and SwFVSCAN are taken from the Wave 'w' spouse's value for RwVSCAN and RwFVSCAN, respectively. In addition to the special missing codes used in RwVSCAN and RwFVSCAN, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

The HRS does not include the visual scanning task.

## MHAS Variables Used

Wave 1 Imputed Cognition:

E12\_FLAG\_01 Visual Scan: Flag if Imputed  
E12\_IMP\_01 Visual Scan (Imputed)

Wave 2 Imputed Cognition:

E10\_FLAG\_03 Visual Scan: Flag if Imputed  
E10\_IMP\_03 Visual Scan (Imputed)

Wave 3 Imputed Cognition:

E10\_FLAG\_12 Visual Scan: Flag if Imputed  
E10\_IMP\_12 Visual Scan (Imputed)

Wave 4 Imputed Cognition:

E10\_FLAG\_15 Visual Scan: Flag if Imputed  
E10\_IMP\_15 Visual Scan (Imputed)

Wave 5 Imputed Cognition:

E10\_FLAG\_18 Visual Scan: Flag if Imputed  
E10\_IMP\_18 Visual Scan (Imputed)

Backwards Counting From 20

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 3    | R3BWC20    | r3bwc20: w3 R Backwards Counting From 20                     | Categ |
| 4    | R4BWC20    | r4bwc20: w4 R Backwards Counting From 20                     | Categ |
| 3    | S3BWC20    | s3bwc20: w3 S Backwards Counting From 20                     | Categ |
| 4    | S4BWC20    | s4bwc20: w4 S Backwards Counting From 20                     | Categ |
| 3    | R3BWC20_M  | r3bwc20_m: w3 R Backwards Counting From 20 (Correct/Incorrec | Categ |
| 4    | R4BWC20_M  | r4bwc20_m: w4 R Backwards Counting From 20 (Correct/Incorrec | Categ |
| 3    | S3BWC20_M  | s3bwc20_m: w3 S Backwards Counting From 20 (Correct/Incorrec | Categ |
| 4    | S4BWC20_M  | s4bwc20_m: w4 S Backwards Counting From 20 (Correct/Incorrec | Categ |
| 3    | R3FBWC20_M | r3fbwc20_m: w3 Cognition Flag R Backwards Counting From 20 ( | Categ |
| 4    | R4FBWC20_M | r4fbwc20_m: w4 Cognition Flag R Backwards Counting From 20 ( | Categ |
| 3    | S3FBWC20_M | s3fbwc20_m: w3 Cognition Flag S Backwards Counting From 20 ( | Categ |
| 4    | S4FBWC20_M | s4fbwc20_m: w4 Cognition Flag S Backwards Counting From 20 ( | Categ |

Descriptive Statistics

| Variable   | N     | Mean  | Std Dev | Minimum | Maximum |
|------------|-------|-------|---------|---------|---------|
| R3BWC20    | 13439 | 1.78  | 0.60    | 0.00    | 2.00    |
| R4BWC20    | 13158 | 1.76  | 0.63    | 0.00    | 2.00    |
| S3BWC20    | 9273  | 1.81  | 0.55    | 0.00    | 2.00    |
| S4BWC20    | 8833  | 1.81  | 0.57    | 0.00    | 2.00    |
| R3BWC20_M  | 14448 | 0.90  | 0.30    | 0.00    | 1.00    |
| R4BWC20_M  | 13850 | 0.88  | 0.33    | 0.00    | 1.00    |
| S3BWC20_M  | 9866  | 0.92  | 0.27    | 0.00    | 1.00    |
| S4BWC20_M  | 9182  | 0.90  | 0.30    | 0.00    | 1.00    |
| R3FBWC20_M | 15723 | -0.02 | 0.38    | -1.00   | 1.00    |
| R4FBWC20_M | 14779 | -0.02 | 0.33    | -1.00   | 1.00    |
| S3FBWC20_M | 10592 | -0.01 | 0.35    | -1.00   | 1.00    |
| S4FBWC20_M | 9652  | -0.01 | 0.29    | -1.00   | 1.00    |

Categorical Variable Codes

| Value-----                    | R3BWC20 | R4BWC20 |
|-------------------------------|---------|---------|
| .m:Missing                    | 142     |         |
| .n:not specified              | 7       |         |
| .p:Proxy interview, not asked | 1275    | 929     |
| .r:Refuse                     | 860     | 692     |
| 0.Incorrect                   | 1229    | 1397    |
| 1.Correct, 2nd try            | 562     | 359     |
| 2.Correct, 1st try            | 11648   | 11402   |

| Value-----                    | S3BWC20 | S4BWC20 |
|-------------------------------|---------|---------|
| .m:Missing                    | 91      |         |
| .n:not specified              | 5       |         |
| .p:Proxy interview, not asked | 726     | 470     |
| .r:Refuse                     | 497     | 349     |
| .u:Unmar                      | 4782    | 4847    |
| .v:SP NR                      | 349     | 280     |
| 0.Incorrect                   | 682     | 752     |

|                                |  |            |            |
|--------------------------------|--|------------|------------|
| 1. Correct, 2nd try            |  | 369        | 208        |
| 2. Correct, 1st try            |  | 8222       | 7873       |
| Value-----                     |  | R3BWC20_M  | R4BWC20_M  |
| .p: Proxy interview, not asked |  | 1275       | 929        |
| 0. Incorrect                   |  | 1473       | 1682       |
| 1. Correct                     |  | 12975      | 12168      |
| Value-----                     |  | S3BWC20_M  | S4BWC20_M  |
| .p: Proxy interview, not asked |  | 726        | 470        |
| .u: Unmar                      |  | 4782       | 4847       |
| .v: SP NR                      |  | 349        | 280        |
| 0. Incorrect                   |  | 798        | 885        |
| 1. Correct                     |  | 9068       | 8297       |
| Value-----                     |  | R3FBWC20_M | R4FBWC20_M |
| -1. Missing, not imputed       |  | 1275       | 929        |
| 0. Not Imputed                 |  | 13421      | 13158      |
| 1. Imputed                     |  | 1027       | 692        |
| Value-----                     |  | S3FBWC20_M | S4FBWC20_M |
| .u: Unmar                      |  | 4782       | 4847       |
| .v: SP NR                      |  | 349        | 280        |
| -1. Missing, not imputed       |  | 726        | 470        |
| 0. Not Imputed                 |  | 9264       | 8833       |
| 1. Imputed                     |  | 602        | 349        |

## How Constructed

RwBWC20 indicates the respondent's backwards counting score. Respondents were asked to count backwards for 10 continuous numbers from 20. If the respondent was not able to complete the task in the first try, then they could try a second time. Two points are given if successful on the first try, one if successful on the second try, and zero if not successful on either try. The backwards counting questions were only asked in Waves 3 and 4 (2012 and 2015). RwBWC20 is set to .p for proxy interviews, .r if the respondent refused to complete the cognition exercises, .n if the answer was "Not specified", and .m if they didn't complete the section but completed the rest of the interview. The variable is plain missing (.) for respondents who did not respond to the current wave.

RwBWC20\_M indicates whether the respondent was able to successfully count backwards for 10 continuous numbers from 20. RwBWC20\_M is constructed using the imputed cognitive function variables provided by MHAS. Using the method of sequence of regressions with a SAS based Imputation and Variance Estimation software (IVEware), the MHAS team completed the imputation of cognitive variables. Unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the MHAS document [\(here\)](#) titled "Imputation of Cognitive Function Variables in the Mexican Health and Aging Study 2001-2018, Version 1", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included. RwBWC20\_M is set to .p for proxy interviews. The variable is set to plain missing (.) for respondents who did not respond to the current wave.

Respondents were asked to count backwards for 10 continuous numbers from 20. While RwBWC20 indicates the respondent's backwards counting score with two points given if successful on the first try, one if successful on the second try, and zero if not successful on either try. RwBWC20\_M indicates whether the respondent was able to successfully count backwards for 10 continuous numbers from 20 and uses the imputed cognitive data. RwBWC20\_M does not indicate whether the respondent was able to complete the task in the first or second try.

RwFBWC20\_M is a flag variable indicating whether or not any component of RwBWC20\_M was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section, including proxy interviews, and this value has been left missing.

SwBWC20, SwBWC20\_M, and SwFBWC20\_M are taken from the Wave 'w' spouse's values for RwBWC20, RwBWC20\_M, and RwFBWC20\_M, respectively. In addition to the special missing codes used in RwBWC20, RwBWC20\_M, and RwFBWC20\_M, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

The backwards counting questions were only asked in Waves 3 and 4 (2012 and 2015).

Differences with the RAND HRS/Harmonized HRS

Different from the HRS, in the MHAS the backwards counting questions only included counting back from 20, whereas the HRS also asks counting back from 86.

MHAS Variables Used

Wave 3 Imputed Cognition:

|              |   |
|--------------|---|
| E12C_FLAG_12 | Numeracy - Time for First and Second Attempt: Flag if I |
| E12C_IMP_12  | Numeracy - Time for First and Second Attempt (Imputed)  |
| E12_FLAG_12  | Numeracy - Score for First and Second Attempt: Flag if  |
| E12_IMP_12   | Numeracy - Score for First and Second Attempt (Imputed) |

Wave 4 Imputed Cognition:

|              |   |
|--------------|---|
| E12C_FLAG_15 | Numeracy - Time for First and Second Attempt: Flag if I |
| E12C_IMP_15  | Numeracy - Time for First and Second Attempt (Imputed)  |
| E12_FLAG_15  | Numeracy - Score for First and Second Attempt: Flag if  |
| E12_IMP_15   | Numeracy - Score for First and Second Attempt (Imputed) |

|                                |
|--------------------------------|
| <b>Date Naming/Orientation</b> |
|--------------------------------|

| Wave | Variable | Label   | Type  |
|------|----------|---|-------|
| 2    | R2DY     | r2dy: w2 R Date Naming: Day of the Month                | Categ |
| 3    | R3DY     | r3dy: w3 R Date Naming: Day of the Month                | Categ |
| 4    | R4DY     | r4dy: w4 R Date Naming: Day of the Month                | Categ |
| 5    | R5DY     | r5dy: w5 R Date Naming: Day of the Month                | Categ |
| 2    | S2DY     | s2dy: w2 S Date Naming: Day of the Month                | Categ |
| 3    | S3DY     | s3dy: w3 S Date Naming: Day of the Month                | Categ |
| 4    | S4DY     | s4dy: w4 S Date Naming: Day of the Month                | Categ |
| 5    | S5DY     | s5dy: w5 S Date Naming: Day of the Month                | Categ |
| 2    | R2FDY    | r2fdy: w2 Cognition Flag R Date Naming-Day of the Month | Categ |
| 3    | R3FDY    | r3fdy: w3 Cognition Flag R Date Naming-Day of the Month | Categ |
| 4    | R4FDY    | r4fdy: w4 Cognition Flag R Date Naming-Day of the Month | Categ |
| 5    | R5FDY    | r5fdy: w5 Cognition Flag R Date Naming-Day of the Month | Categ |
| 2    | S2FDY    | s2fdy: w2 Cognition Flag S Date Naming-Day of the Month | Categ |
| 3    | S3FDY    | s3fdy: w3 Cognition Flag S Date Naming-Day of the Month | Categ |
| 4    | S4FDY    | s4fdy: w4 Cognition Flag S Date Naming-Day of the Month | Categ |
| 5    | S5FDY    | s5fdy: w5 Cognition Flag S Date Naming-Day of the Month | Categ |
| 2    | R2MO     | r2mo: w2 R Date Naming: Month                           | Categ |
| 3    | R3MO     | r3mo: w3 R Date Naming: Month                           | Categ |
| 4    | R4MO     | r4mo: w4 R Date Naming: Month                           | Categ |
| 5    | R5MO     | r5mo: w5 R Date Naming: Month                           | Categ |
| 2    | S2MO     | s2mo: w2 S Date Naming: Month                           | Categ |
| 3    | S3MO     | s3mo: w3 S Date Naming: Month                           | Categ |
| 4    | S4MO     | s4mo: w4 S Date Naming: Month                           | Categ |
| 5    | S5MO     | s5mo: w5 S Date Naming: Month                           | Categ |
| 2    | R2FMO    | r2fmo: w2 Cognition Flag R Date Naming-Month            | Categ |
| 3    | R3FMO    | r3fmo: w3 Cognition Flag R Date Naming-Month            | Categ |
| 4    | R4FMO    | r4fmo: w4 Cognition Flag R Date Naming-Month            | Categ |
| 5    | R5FMO    | r5fmo: w5 Cognition Flag R Date Naming-Month            | Categ |
| 2    | S2FMO    | s2fmo: w2 Cognition Flag S Date Naming-Month            | Categ |
| 3    | S3FMO    | s3fmo: w3 Cognition Flag S Date Naming-Month            | Categ |
| 4    | S4FMO    | s4fmo: w4 Cognition Flag S Date Naming-Month            | Categ |
| 5    | S5FMO    | s5fmo: w5 Cognition Flag S Date Naming-Month            | Categ |
| 2    | R2YR     | r2yr: w2 R Date Naming: Year                            | Categ |
| 3    | R3YR     | r3yr: w3 R Date Naming: Year                            | Categ |
| 4    | R4YR     | r4yr: w4 R Date Naming: Year                            | Categ |
| 5    | R5YR     | r5yr: w5 R Date Naming: Year                            | Categ |
| 2    | S2YR     | s2yr: w2 S Date Naming: Year                            | Categ |
| 3    | S3YR     | s3yr: w3 S Date Naming: Year                            | Categ |
| 4    | S4YR     | s4yr: w4 S Date Naming: Year                            | Categ |
| 5    | S5YR     | s5yr: w5 S Date Naming: Year                            | Categ |
| 2    | R2FYR    | r2fyr: w2 Cognition Flag R Date Naming-Year             | Categ |
| 3    | R3FYR    | r3fyr: w3 Cognition Flag R Date Naming-Year             | Categ |
| 4    | R4FYR    | r4fyr: w4 Cognition Flag R Date Naming-Year             | Categ |
| 5    | R5FYR    | r5fyr: w5 Cognition Flag R Date Naming-Year             | Categ |
| 2    | S2FYR    | s2fyr: w2 Cognition Flag S Date Naming-Year             | Categ |
| 3    | S3FYR    | s3fyr: w3 Cognition Flag S Date Naming-Year             | Categ |
| 4    | S4FYR    | s4fyr: w4 Cognition Flag S Date Naming-Year             | Categ |
| 5    | S5FYR    | s5fyr: w5 Cognition Flag S Date Naming-Year             | Categ |

|   |             |  |       |
|---|-------------|--|-------|
| 2 | R2ORIENT_M  | r2orient_m: w2 R Date Naming Correctness                 | Categ |
| 3 | R3ORIENT_M  | r3orient_m: w3 R Date Naming Correctness                 | Categ |
| 4 | R4ORIENT_M  | r4orient_m: w4 R Date Naming Correctness                 | Categ |
| 5 | R5ORIENT_M  | r5orient_m: w5 R Date Naming Correctness                 | Categ |
| 2 | S2ORIENT_M  | s2orient_m: w2 S Date Naming Correctness                 | Categ |
| 3 | S3ORIENT_M  | s3orient_m: w3 S Date Naming Correctness                 | Categ |
| 4 | S4ORIENT_M  | s4orient_m: w4 S Date Naming Correctness                 | Categ |
| 5 | S5ORIENT_M  | s5orient_m: w5 S Date Naming Correctness                 | Categ |
| 2 | R2FORIENT_M | r2forient_m: w2 Cognition Flag R Date Naming/Orientation | Categ |
| 3 | R3FORIENT_M | r3forient_m: w3 Cognition Flag R Date Naming/Orientation | Categ |
| 4 | R4FORIENT_M | r4forient_m: w4 Cognition Flag R Date Naming/Orientation | Categ |
| 5 | R5FORIENT_M | r5forient_m: w5 Cognition Flag R Date Naming/Orientation | Categ |
| 2 | S2FORIENT_M | s2forient_m: w2 Cognition Flag S Date Naming/Orientation | Categ |
| 3 | S3FORIENT_M | s3forient_m: w3 Cognition Flag S Date Naming/Orientation | Categ |
| 4 | S4FORIENT_M | s4forient_m: w4 Cognition Flag S Date Naming/Orientation | Categ |
| 5 | S5FORIENT_M | s5forient_m: w5 Cognition Flag S Date Naming/Orientation | Categ |

## Descriptive Statistics

| Variable | N     | Mean  | Std Dev | Minimum | Maximum |
|----------|-------|-------|---------|---------|---------|
| R2DY     | 12495 | 0.73  | 0.45    | 0.00    | 1.00    |
| R3DY     | 14448 | 0.75  | 0.43    | 0.00    | 1.00    |
| R4DY     | 13850 | 0.72  | 0.45    | 0.00    | 1.00    |
| R5DY     | 15786 | 0.92  | 0.27    | 0.00    | 1.00    |
| S2DY     | 8728  | 0.75  | 0.43    | 0.00    | 1.00    |
| S3DY     | 9866  | 0.77  | 0.42    | 0.00    | 1.00    |
| S4DY     | 9182  | 0.74  | 0.44    | 0.00    | 1.00    |
| S5DY     | 7075  | 0.92  | 0.27    | 0.00    | 1.00    |
| R2FDY    | 13704 | -0.09 | 0.28    | -1.00   | 1.00    |
| R3FDY    | 15723 | -0.06 | 0.31    | -1.00   | 1.00    |
| R4FDY    | 14779 | -0.06 | 0.26    | -1.00   | 1.00    |
| R5FDY    | 17114 | -0.08 | 0.27    | -1.00   | 1.00    |
| S2FDY    | 9564  | -0.09 | 0.28    | -1.00   | 1.00    |
| S3FDY    | 10592 | -0.05 | 0.29    | -1.00   | 1.00    |
| S4FDY    | 9652  | -0.05 | 0.22    | -1.00   | 1.00    |
| S5FDY    | 7638  | -0.07 | 0.26    | -1.00   | 1.00    |
| R2MO     | 12495 | 0.90  | 0.30    | 0.00    | 1.00    |
| R3MO     | 14448 | 0.91  | 0.28    | 0.00    | 1.00    |
| R4MO     | 13850 | 0.91  | 0.29    | 0.00    | 1.00    |
| R5MO     | 15786 | 0.93  | 0.25    | 0.00    | 1.00    |
| S2MO     | 8728  | 0.91  | 0.28    | 0.00    | 1.00    |
| S3MO     | 9866  | 0.92  | 0.26    | 0.00    | 1.00    |
| S4MO     | 9182  | 0.92  | 0.27    | 0.00    | 1.00    |
| S5MO     | 7075  | 0.93  | 0.25    | 0.00    | 1.00    |
| R2FMO    | 13704 | -0.09 | 0.28    | -1.00   | 1.00    |
| R3FMO    | 15723 | -0.06 | 0.31    | -1.00   | 1.00    |
| R4FMO    | 14779 | -0.06 | 0.26    | -1.00   | 1.00    |
| R5FMO    | 17114 | -0.08 | 0.27    | -1.00   | 1.00    |
| S2FMO    | 9564  | -0.09 | 0.28    | -1.00   | 1.00    |
| S3FMO    | 10592 | -0.05 | 0.29    | -1.00   | 1.00    |
| S4FMO    | 9652  | -0.05 | 0.22    | -1.00   | 1.00    |
| S5FMO    | 7638  | -0.07 | 0.26    | -1.00   | 1.00    |



|             |       |       |      |       |      |
|-------------|-------|-------|------|-------|------|
| R2YR        | 12495 | 0.82  | 0.38 | 0.00  | 1.00 |
| R3YR        | 14448 | 0.82  | 0.38 | 0.00  | 1.00 |
| R4YR        | 13850 | 0.81  | 0.39 | 0.00  | 1.00 |
| R5YR        | 15786 | 0.85  | 0.36 | 0.00  | 1.00 |
| S2YR        | 8728  | 0.85  | 0.36 | 0.00  | 1.00 |
| S3YR        | 9866  | 0.85  | 0.36 | 0.00  | 1.00 |
| S4YR        | 9182  | 0.84  | 0.37 | 0.00  | 1.00 |
| S5YR        | 7075  | 0.84  | 0.36 | 0.00  | 1.00 |
| R2FYR       | 13704 | -0.09 | 0.28 | -1.00 | 1.00 |
| R3FYR       | 15723 | -0.06 | 0.31 | -1.00 | 1.00 |
| R4FYR       | 14779 | -0.06 | 0.26 | -1.00 | 1.00 |
| R5FYR       | 17114 | -0.08 | 0.27 | -1.00 | 1.00 |
| S2FYR       | 9564  | -0.09 | 0.28 | -1.00 | 1.00 |
| S3FYR       | 10592 | -0.05 | 0.30 | -1.00 | 1.00 |
| S4FYR       | 9652  | -0.05 | 0.22 | -1.00 | 1.00 |
| S5FYR       | 7638  | -0.07 | 0.26 | -1.00 | 1.00 |
| R2ORIENT_M  | 12495 | 2.45  | 0.89 | 0.00  | 3.00 |
| R3ORIENT_M  | 14448 | 2.48  | 0.82 | 0.00  | 3.00 |
| R4ORIENT_M  | 13850 | 2.44  | 0.86 | 0.00  | 3.00 |
| R5ORIENT_M  | 15786 | 2.71  | 0.71 | 0.00  | 3.00 |
| S2ORIENT_M  | 8728  | 2.51  | 0.85 | 0.00  | 3.00 |
| S3ORIENT_M  | 9866  | 2.54  | 0.77 | 0.00  | 3.00 |
| S4ORIENT_M  | 9182  | 2.50  | 0.80 | 0.00  | 3.00 |
| S5ORIENT_M  | 7075  | 2.70  | 0.72 | 0.00  | 3.00 |
| R2FORIENT_M | 13704 | -0.09 | 0.28 | -1.00 | 1.00 |
| R3FORIENT_M | 15723 | -0.06 | 0.32 | -1.00 | 1.00 |
| R4FORIENT_M | 14779 | -0.06 | 0.26 | -1.00 | 1.00 |
| R5FORIENT_M | 17114 | -0.08 | 0.27 | -1.00 | 1.00 |
| S2FORIENT_M | 9564  | -0.09 | 0.28 | -1.00 | 1.00 |
| S3FORIENT_M | 10592 | -0.05 | 0.30 | -1.00 | 1.00 |
| S4FORIENT_M | 9652  | -0.05 | 0.22 | -1.00 | 1.00 |
| S5FORIENT_M | 7638  | -0.07 | 0.26 | -1.00 | 1.00 |

Categorical Variable Codes

|                               |       |       |       |       |
|-------------------------------|-------|-------|-------|-------|
| Value-----                    | R2DY  | R3DY  | R4DY  | R5DY  |
| .m:Missing                    | 20    |       |       |       |
| .p:Proxy interview, not asked | 1178  | 1275  | 929   | 1328  |
| .s:Skip                       | 11    |       |       |       |
| 0.Incorrect                   | 3434  | 3638  | 3845  | 1212  |
| 1.Correct                     | 9061  | 10810 | 10005 | 14574 |
| Value-----                    | S2DY  | S3DY  | S4DY  | S5DY  |
| .m:Missing                    | 6     |       |       |       |
| .p:Proxy interview, not asked | 821   | 726   | 470   | 563   |
| .s:Skip                       | 9     |       |       |       |
| .u:Unmar                      | 4009  | 4782  | 4847  | 5227  |
| .v:SP NR                      | 131   | 349   | 280   | 501   |
| 0.Incorrect                   | 2196  | 2297  | 2352  | 539   |
| 1.Correct                     | 6532  | 7569  | 6830  | 6536  |
| Value-----                    | R2FDY | R3FDY | R4FDY | R5FDY |
| -1.Missing, not imputed       | 1209  | 1275  | 929   | 1328  |
| 0.Not Imputed                 | 12491 | 14117 | 13767 | 15762 |
| 1.Imputed                     | 4     | 331   | 83    | 24    |
| Value-----                    | S2FDY | S3FDY | S4FDY | S5FDY |
| .u:Unmar                      | 4009  | 4782  | 4847  | 5227  |

|                               |            |            |            |            |
|-------------------------------|------------|------------|------------|------------|
| .v:SP NR                      | 131        | 349        | 280        | 501        |
| -1.Missing, not imputed       | 836        | 726        | 470        | 563        |
| 0.Not Imputed                 | 8725       | 9647       | 9153       | 7067       |
| 1.Imputed                     | 3          | 219        | 29         | 8          |
| Value-----                    | R2MO       | R3MO       | R4MO       | R5MO       |
| .m:Missing                    | 20         |            |            |            |
| .p:Proxy interview, not asked | 1178       | 1275       | 929        | 1328       |
| .s:Skip                       | 11         |            |            |            |
| 0.Incorrect                   | 1231       | 1259       | 1291       | 1055       |
| 1.Correct                     | 11264      | 13189      | 12559      | 14731      |
| Value-----                    | S2MO       | S3MO       | S4MO       | S5MO       |
| .m:Missing                    | 6          |            |            |            |
| .p:Proxy interview, not asked | 821        | 726        | 470        | 563        |
| .s:Skip                       | 9          |            |            |            |
| .u:Unmar                      | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      | 131        | 349        | 280        | 501        |
| 0.Incorrect                   | 757        | 740        | 751        | 482        |
| 1.Correct                     | 7971       | 9126       | 8431       | 6593       |
| Value-----                    | R2FMO      | R3FMO      | R4FMO      | R5FMO      |
| -1.Missing, not imputed       | 1209       | 1275       | 929        | 1328       |
| 0.Not Imputed                 | 12491      | 14116      | 13767      | 15762      |
| 1.Imputed                     | 4          | 332        | 83         | 24         |
| Value-----                    | S2FMO      | S3FMO      | S4FMO      | S5FMO      |
| .u:Unmar                      | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      | 131        | 349        | 280        | 501        |
| -1.Missing, not imputed       | 836        | 726        | 470        | 563        |
| 0.Not Imputed                 | 8725       | 9647       | 9153       | 7067       |
| 1.Imputed                     | 3          | 219        | 29         | 8          |
| Value-----                    | R2YR       | R3YR       | R4YR       | R5YR       |
| .m:Missing                    | 20         |            |            |            |
| .p:Proxy interview, not asked | 1178       | 1275       | 929        | 1328       |
| .s:Skip                       | 11         |            |            |            |
| 0.Incorrect                   | 2261       | 2608       | 2652       | 2382       |
| 1.Correct                     | 10234      | 11840      | 11198      | 13404      |
| Value-----                    | S2YR       | S3YR       | S4YR       | S5YR       |
| .m:Missing                    | 6          |            |            |            |
| .p:Proxy interview, not asked | 821        | 726        | 470        | 563        |
| .s:Skip                       | 9          |            |            |            |
| .u:Unmar                      | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      | 131        | 349        | 280        | 501        |
| 0.Incorrect                   | 1320       | 1511       | 1466       | 1106       |
| 1.Correct                     | 7408       | 8355       | 7716       | 5969       |
| Value-----                    | R2FYR      | R3FYR      | R4FYR      | R5FYR      |
| -1.Missing, not imputed       | 1209       | 1275       | 929        | 1328       |
| 0.Not Imputed                 | 12491      | 14108      | 13767      | 15762      |
| 1.Imputed                     | 4          | 340        | 83         | 24         |
| Value-----                    | S2FYR      | S3FYR      | S4FYR      | S5FYR      |
| .u:Unmar                      | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      | 131        | 349        | 280        | 501        |
| -1.Missing, not imputed       | 836        | 726        | 470        | 563        |
| 0.Not Imputed                 | 8725       | 9643       | 9153       | 7067       |
| 1.Imputed                     | 3          | 223        | 29         | 8          |
| Value-----                    | R2ORIENT_M | R3ORIENT_M | R4ORIENT_M | R5ORIENT_M |
| .m:Missing                    | 20         |            |            |            |
| .p:Proxy interview, not asked | 1178       | 1275       | 929        | 1328       |
| .s:Skip                       | 11         |            |            |            |
| 0.All incorrect               | 872        | 691        | 786        | 641        |
| 1.One of combination correct  | 842        | 974        | 1029       | 427        |
| 2.Two of combination correct  | 2626       | 3484       | 3372       | 1872       |
| 3.All correct                 | 8155       | 9299       | 8663       | 12846      |
| Value-----                    | S2ORIENT_M | S3ORIENT_M | S4ORIENT_M | S5ORIENT_M |
| .m:Missing                    | 6          |            |            |            |
| .p:Proxy interview, not asked | 821        | 726        | 470        | 563        |

|                              |  |             |             |             |             |
|------------------------------|--|-------------|-------------|-------------|-------------|
| .s:Skip                      |  | 9           |             |             |             |
| .u:Unmar                     |  | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                     |  | 131         | 349         | 280         | 501         |
| 0.All incorrect              |  | 517         | 357         | 417         | 293         |
| 1.One of combination correct |  | 486         | 597         | 567         | 192         |
| 2.Two of combination correct |  | 1750        | 2283        | 2184        | 864         |
| 3.All correct                |  | 5975        | 6629        | 6014        | 5726        |
| Value-----                   |  | R2FORIENT_M | R3FORIENT_M | R4FORIENT_M | R5FORIENT_M |
| -1.Missing, not imputed      |  | 1209        | 1275        | 929         | 1328        |
| 0.Not Imputed                |  | 12491       | 14096       | 13767       | 15762       |
| 1.Imputed                    |  | 4           | 352         | 83          | 24          |
| Value-----                   |  | S2FORIENT_M | S3FORIENT_M | S4FORIENT_M | S5FORIENT_M |
| .u:Unmar                     |  | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                     |  | 131         | 349         | 280         | 501         |
| -1.Missing, not imputed      |  | 836         | 726         | 470         | 563         |
| 0.Not Imputed                |  | 8725        | 9634        | 9153        | 7067        |
| 1.Imputed                    |  | 3           | 232         | 29          | 8           |

## How Constructed

RwDY, RwMO, and RwYR indicate whether the respondent was able to report the date (when the interview took place) correctly, including day of the month, month, and year, respectively. Each of these variables is coded as 1 for a correct answer and 0 for an incorrect answer. RwORIENT\_M indicates the orientation to day of the month, month, and year. It is an MHAS specific variable and the summary measure for these 3 variables. RwORIENT\_M ranges from 0 to 3, the higher score the better oriented. RwDY, RwMO, RwYR, and RwORIENT\_M are constructed using the imputed cognitive function variables provided by MHAS. Using the method of sequence of regressions with a SAS based Imputation and Variance Estimation software (IVEware), the MHAS team completed the imputation of cognitive variables. Unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the MHAS document ([here](#)) titled "Imputation of Cognitive Function Variables in the Mexican Health and Aging Study 2001-2018, Version 1", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included. These variables are set to .p for proxy interviews. In Wave 2, RwDY, RwMO, and RwYR were also set to .s if the cognition section was skipped because the language of the interview was different from Spanish and .m if the responses are missing because they didn't complete the task but completed the rest of the interview. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

The orientation questions were only asked starting in Wave 2 (2003).

RwFDY, RwFMO, RwFYR, and RwFORIENT\_M are flag variables indicating whether any component of RwDY, RwMO, RwYR, and RwORIENT\_M, respectively, was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section, including proxy interviews, and this value has been left missing.

SwDY, SwMO, SwYR, SwORIENT\_M, SwFDY, SwFMO, SwFYR, and SwFORIENT\_M are taken from the Wave 'w' spouse's values for RwDY, RwMO, RwYR, RwORIENT\_M, RwFDY, RwFMO, RwFYR, and RwFORIENT\_M, respectively. In addition to the special missing codes used in RwDY, RwMO, RwYR, RwORIENT\_M, RwFDY, RwFMO, RwFYR, and RwFORIENT\_M, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

The orientation questions were only asked starting in Wave 2 (2003).

## Differences with the RAND HRS/Harmonized HRS

Different from the HRS, in the MHAS respondents are not asked to report the day of the week.

## MHAS Variables Used

Wave 2 Imputed Cognition:

E13A\_FLAG\_03      Orientation - Day: Flag if Imputed  
E13A\_IMP\_03      Orientation - Day (Imputed)  
E13B\_FLAG\_03      Orientation - Month: Flag if Imputed  
E13B\_IMP\_03      Orientation - Month (Imputed)  
E13C\_FLAG\_03      Orientation - Year: Flag if Imputed  
E13C\_IMP\_03      Orientation - Year (Imputed)

## Wave 3 Imputed Cognition:

E11A\_FLAG\_12      Orientation - Day: Flag if Imputed  
E11A\_IMP\_12      Orientation - Day (Imputed)  
E11B\_FLAG\_12      Orientation - Month: Flag if Imputed  
E11B\_IMP\_12      Orientation - Month (Imputed)  
E11C\_FLAG\_12      Orientation - Year: Flag if Imputed  
E11C\_IMP\_12      Orientation - Year (Imputed)

## Wave 4 Imputed Cognition:

E11A\_FLAG\_15      Orientation - Day: Flag if Imputed  
E11A\_IMP\_15      Orientation - Day (Imputed)  
E11B\_FLAG\_15      Orientation - Month: Flag if Imputed  
E11B\_IMP\_15      Orientation - Month (Imputed)  
E11C\_FLAG\_15      Orientation - Year: Flag if Imputed  
E11C\_IMP\_15      Orientation - Year (Imputed)

## Wave 5 Imputed Cognition:

E11A\_FLAG\_18      Orientation - Day: Flag if Imputed  
E11A\_IMP\_18      Orientation - Day (Imputed)  
E11B\_FLAG\_18      Orientation - Month: Flag if Imputed  
E11B\_IMP\_18      Orientation - Month (Imputed)  
E11C\_FLAG\_18      Orientation - Year: Flag if Imputed  
E11C\_IMP\_18      Orientation - Year (Imputed)

|                   |
|-------------------|
| <b>Serial 7's</b> |
|-------------------|

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 4    | R4SER7   | r4ser7: w4 R Serial 7's number of correct subtractions | Cont  |
| 5    | R5SER7   | r5ser7: w5 R Serial 7's number of correct subtractions | Cont  |
| 4    | S4SER7   | s4ser7: w4 S Serial 7's number of correct subtractions | Cont  |
| 5    | S5SER7   | s5ser7: w5 S Serial 7's number of correct subtractions | Cont  |
| 4    | R4FSER7  | r4fser7: w4 Cognition Flag R Serial 7 subtractions     | Categ |
| 5    | R5FSER7  | r5fser7: w5 Cognition Flag R Serial 7 subtractions     | Categ |
| 4    | S4FSER7  | s4fser7: w4 Cognition Flag S Serial 7 subtractions     | Categ |
| 5    | S5FSER7  | s5fser7: w5 Cognition Flag S Serial 7 subtractions     | Categ |

### Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R4SER7   | 13850 | 3.04 | 1.57    | 0.00    | 5.00    |
| R5SER7   | 15786 | 3.10 | 1.60    | 0.00    | 5.00    |
| S4SER7   | 9182  | 3.16 | 1.54    | 0.00    | 5.00    |
| S5SER7   | 7075  | 3.05 | 1.61    | 0.00    | 5.00    |
| R4FSER7  | 14779 | 0.27 | 0.57    | -1.00   | 1.00    |
| R5FSER7  | 17114 | 0.18 | 0.55    | -1.00   | 1.00    |
| S4FSER7  | 9652  | 0.25 | 0.53    | -1.00   | 1.00    |
| S5FSER7  | 7638  | 0.20 | 0.55    | -1.00   | 1.00    |

### Categorical Variable Codes

| Value-----              | R4FSER7 | R5FSER7 |
|-------------------------|---------|---------|
| -1.Missing, not imputed | 929     | 1328    |
| 0.Not Imputed           | 8921    | 11407   |
| 1.Imputed               | 4929    | 4379    |
| Value-----              | S4FSER7 | S5FSER7 |
| .u:Unmar                | 4847    | 5227    |
| .v:SP NR                | 280     | 501     |
| -1.Missing, not imputed | 470     | 563     |
| 0.Not Imputed           | 6289    | 5011    |
| 1.Imputed               | 2893    | 2064    |

### How Constructed

RwSER7 provides the numbers of correct subtractions in the serial 7's test. This test asks the individual to subtract 7 from the prior number, beginning with 100, for five trials. Correct subtractions are based on the prior number given, so that even if one subtraction is incorrect subsequent trials are evaluated on the given (perhaps wrong) answer. Valid scores are 0-5. RwSER7 is constructed using the imputed cognitive function variables provided by MHAS. Using the method of sequence of regressions with a SAS based Imputation and Variance Estimation software (IVEware), the MHAS team completed the imputation of cognitive variables. Unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the MHAS document ([here](#)) titled "Imputation of Cognitive Function Variables in the Mexican Health and Aging Study 2001-2018, Version 1", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included. RwSER7 is set to special missing .p if the cognition questions were skipped because the interview was by proxy. RwSER7 is set to plain missing (.) for respondents who did not respond to this wave.

The serial 7's questions were only asked starting in Wave 4.

RwFSER7 is a flag variable indicating whether or not any component of RwSER7 was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section, including proxy interviews, and this value has been left missing.

SwSER7 and SwFSER7 provide the current wave's spouse numbers of correct subtractions in the serial 7's test and is taken directly from the spouse's value to RwSER7 and RwFSER7, respectively. In addition to the special missing codes used in RwSER7 and RwFSER7, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

The serial 7's questions were only asked starting in Wave 4.

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|                           |   |
|---------------------------|---|
| Wave 4 Imputed Cognition: |   |
| E15_FLAG_15               | Successive Subtractions - Serial 7: Flag if Imputed |
| E15_IMP_15                | Successive Subtractions - Serial 7 (Imputed)        |
| Wave 5 Imputed Cognition: |   |
| E15_FLAG_18               | Successive Subtractions - Serial 7: Flag if Imputed |
| E15_IMP_18                | Successive Subtractions - Serial 7 (Imputed)        |

|                                     |
|-------------------------------------|
| <b>Proxy Cognition: JORM IQCODE</b> |
|-------------------------------------|

| Wave | Variable    | Label  | Type  |
|------|-------------|--|-------|
| 1    | R1IQSCORE1  | r1iqscore1:w1 R JORM family/friend details       | Categ |
| 2    | R2IQSCORE1  | r2iqscore1:w2 R JORM family/friend details       | Categ |
| 3    | R3IQSCORE1  | r3iqscore1:w3 R JORM family/friend details       | Categ |
| 4    | R4IQSCORE1  | r4iqscore1:w4 R JORM family/friend details       | Categ |
| 5    | R5IQSCORE1  | r5iqscore1:w5 R JORM family/friend details       | Categ |
| 1    | S1IQSCORE1  | s1iqscore1:w1 S JORM family/friend details       | Categ |
| 2    | S2IQSCORE1  | s2iqscore1:w2 S JORM family/friend details       | Categ |
| 3    | S3IQSCORE1  | s3iqscore1:w3 S JORM family/friend details       | Categ |
| 4    | S4IQSCORE1  | s4iqscore1:w4 S JORM family/friend details       | Categ |
| 5    | S5IQSCORE1  | s5iqscore1:w5 S JORM family/friend details       | Categ |
| 1    | R1FIQSCORE1 | r1fiqscore1:w1 R JORM flag family/friend details | Categ |
| 2    | R2FIQSCORE1 | r2fiqscore1:w2 R JORM flag family/friend details | Categ |
| 3    | R3FIQSCORE1 | r3fiqscore1:w3 R JORM flag family/friend details | Categ |
| 4    | R4FIQSCORE1 | r4fiqscore1:w4 R JORM flag family/friend details | Categ |
| 5    | R5FIQSCORE1 | r5fiqscore1:w5 R JORM flag family/friend details | Categ |
| 1    | S1FIQSCORE1 | s1fiqscore1:w1 S JORM flag family/friend details | Categ |
| 2    | S2FIQSCORE1 | s2fiqscore1:w2 S JORM flag family/friend details | Categ |
| 3    | S3FIQSCORE1 | s3fiqscore1:w3 S JORM flag family/friend details | Categ |
| 4    | S4FIQSCORE1 | s4fiqscore1:w4 S JORM flag family/friend details | Categ |
| 5    | S5FIQSCORE1 | s5fiqscore1:w5 S JORM flag family/friend details | Categ |
| 1    | R1IQSCORE2  | r1iqscore2:w1 R JORM recent events               | Categ |
| 2    | R2IQSCORE2  | r2iqscore2:w2 R JORM recent events               | Categ |
| 3    | R3IQSCORE2  | r3iqscore2:w3 R JORM recent events               | Categ |
| 4    | R4IQSCORE2  | r4iqscore2:w4 R JORM recent events               | Categ |
| 5    | R5IQSCORE2  | r5iqscore2:w5 R JORM recent events               | Categ |
| 1    | S1IQSCORE2  | s1iqscore2:w1 S JORM recent events               | Categ |
| 2    | S2IQSCORE2  | s2iqscore2:w2 S JORM recent events               | Categ |
| 3    | S3IQSCORE2  | s3iqscore2:w3 S JORM recent events               | Categ |
| 4    | S4IQSCORE2  | s4iqscore2:w4 S JORM recent events               | Categ |
| 5    | S5IQSCORE2  | s5iqscore2:w5 S JORM recent events               | Categ |
| 1    | R1FIQSCORE2 | r1fiqscore2:w1 R JORM flag recent events         | Categ |
| 2    | R2FIQSCORE2 | r2fiqscore2:w2 R JORM flag recent events         | Categ |
| 3    | R3FIQSCORE2 | r3fiqscore2:w3 R JORM flag recent events         | Categ |
| 4    | R4FIQSCORE2 | r4fiqscore2:w4 R JORM flag recent events         | Categ |
| 5    | R5FIQSCORE2 | r5fiqscore2:w5 R JORM flag recent events         | Categ |
| 1    | S1FIQSCORE2 | s1fiqscore2:w1 S JORM flag recent events         | Categ |
| 2    | S2FIQSCORE2 | s2fiqscore2:w2 S JORM flag recent events         | Categ |
| 3    | S3FIQSCORE2 | s3fiqscore2:w3 S JORM flag recent events         | Categ |
| 4    | S4FIQSCORE2 | s4fiqscore2:w4 S JORM flag recent events         | Categ |
| 5    | S5FIQSCORE2 | s5fiqscore2:w5 S JORM flag recent events         | Categ |
| 1    | R1IQSCORE3  | r1iqscore3:w1 R JORM recent conversations        | Categ |
| 2    | R2IQSCORE3  | r2iqscore3:w2 R JORM recent conversations        | Categ |
| 3    | R3IQSCORE3  | r3iqscore3:w3 R JORM recent conversations        | Categ |
| 4    | R4IQSCORE3  | r4iqscore3:w4 R JORM recent conversations        | Categ |
| 5    | R5IQSCORE3  | r5iqscore3:w5 R JORM recent conversations        | Categ |
| 1    | S1IQSCORE3  | s1iqscore3:w1 S JORM recent conversations        | Categ |
| 2    | S2IQSCORE3  | s2iqscore3:w2 S JORM recent conversations        | Categ |
| 3    | S3IQSCORE3  | s3iqscore3:w3 S JORM recent conversations        | Categ |
| 4    | S4IQSCORE3  | s4iqscore3:w4 S JORM recent conversations        | Categ |
| 5    | S5IQSCORE3  | s5iqscore3:w5 S JORM recent conversations        | Categ |

|   |             |                |   |      |         |         |                  |                  |       |
|---|-------------|----------------|---|------|---------|---------|------------------|------------------|-------|
| 1 | R1FIQSCORE3 | r1fiqscore3:w1 | R | JORM | flag    | recent  | conversations    | Categ            |       |
| 2 | R2FIQSCORE3 | r2fiqscore3:w2 | R | JORM | flag    | recent  | conversations    | Categ            |       |
| 3 | R3FIQSCORE3 | r3fiqscore3:w3 | R | JORM | flag    | recent  | conversations    | Categ            |       |
| 4 | R4FIQSCORE3 | r4fiqscore3:w4 | R | JORM | flag    | recent  | conversations    | Categ            |       |
| 5 | R5FIQSCORE3 | r5fiqscore3:w5 | R | JORM | flag    | recent  | conversations    | Categ            |       |
| 1 | S1FIQSCORE3 | s1fiqscore3:w1 | S | JORM | flag    | recent  | conversations    | Categ            |       |
| 2 | S2FIQSCORE3 | s2fiqscore3:w2 | S | JORM | flag    | recent  | conversations    | Categ            |       |
| 3 | S3FIQSCORE3 | s3fiqscore3:w3 | S | JORM | flag    | recent  | conversations    | Categ            |       |
| 4 | S4FIQSCORE3 | s4fiqscore3:w4 | S | JORM | flag    | recent  | conversations    | Categ            |       |
| 5 | S5FIQSCORE3 | s5fiqscore3:w5 | S | JORM | flag    | recent  | conversations    | Categ            |       |
| 1 | R1IQSCORE4  | r1iqscore4:w1  | R | JORM | address | and     | telephone number | Categ            |       |
| 2 | R2IQSCORE4  | r2iqscore4:w2  | R | JORM | address | and     | telephone number | Categ            |       |
| 3 | R3IQSCORE4  | r3iqscore4:w3  | R | JORM | address | and     | telephone number | Categ            |       |
| 4 | R4IQSCORE4  | r4iqscore4:w4  | R | JORM | address | and     | telephone number | Categ            |       |
| 5 | R5IQSCORE4  | r5iqscore4:w5  | R | JORM | address | and     | telephone number | Categ            |       |
| 1 | S1IQSCORE4  | s1iqscore4:w1  | S | JORM | address | and     | telephone number | Categ            |       |
| 2 | S2IQSCORE4  | s2iqscore4:w2  | S | JORM | address | and     | telephone number | Categ            |       |
| 3 | S3IQSCORE4  | s3iqscore4:w3  | S | JORM | address | and     | telephone number | Categ            |       |
| 4 | S4IQSCORE4  | s4iqscore4:w4  | S | JORM | address | and     | telephone number | Categ            |       |
| 5 | S5IQSCORE4  | s5iqscore4:w5  | S | JORM | address | and     | telephone number | Categ            |       |
| 1 | R1FIQSCORE4 | r1fiqscore4:w1 | R | JORM | flag    | address | and              | telephone number | Categ |
| 2 | R2FIQSCORE4 | r2fiqscore4:w2 | R | JORM | flag    | address | and              | telephone number | Categ |
| 3 | R3FIQSCORE4 | r3fiqscore4:w3 | R | JORM | flag    | address | and              | telephone number | Categ |
| 4 | R4FIQSCORE4 | r4fiqscore4:w4 | R | JORM | flag    | address | and              | telephone number | Categ |
| 5 | R5FIQSCORE4 | r5fiqscore4:w5 | R | JORM | flag    | address | and              | telephone number | Categ |
| 1 | S1FIQSCORE4 | s1fiqscore4:w1 | S | JORM | flag    | address | and              | telephone number | Categ |
| 2 | S2FIQSCORE4 | s2fiqscore4:w2 | S | JORM | flag    | address | and              | telephone number | Categ |
| 3 | S3FIQSCORE4 | s3fiqscore4:w3 | S | JORM | flag    | address | and              | telephone number | Categ |
| 4 | S4FIQSCORE4 | s4fiqscore4:w4 | S | JORM | flag    | address | and              | telephone number | Categ |
| 5 | S5FIQSCORE4 | s5fiqscore4:w5 | S | JORM | flag    | address | and              | telephone number | Categ |
| 1 | R1IQSCORE5  | r1iqscore5:w1  | R | JORM | day     | and     | month            | Categ            |       |
| 2 | R2IQSCORE5  | r2iqscore5:w2  | R | JORM | day     | and     | month            | Categ            |       |
| 3 | R3IQSCORE5  | r3iqscore5:w3  | R | JORM | day     | and     | month            | Categ            |       |
| 4 | R4IQSCORE5  | r4iqscore5:w4  | R | JORM | day     | and     | month            | Categ            |       |
| 5 | R5IQSCORE5  | r5iqscore5:w5  | R | JORM | day     | and     | month            | Categ            |       |
| 1 | S1IQSCORE5  | s1iqscore5:w1  | S | JORM | day     | and     | month            | Categ            |       |
| 2 | S2IQSCORE5  | s2iqscore5:w2  | S | JORM | day     | and     | month            | Categ            |       |
| 3 | S3IQSCORE5  | s3iqscore5:w3  | S | JORM | day     | and     | month            | Categ            |       |
| 4 | S4IQSCORE5  | s4iqscore5:w4  | S | JORM | day     | and     | month            | Categ            |       |
| 5 | S5IQSCORE5  | s5iqscore5:w5  | S | JORM | day     | and     | month            | Categ            |       |
| 1 | R1FIQSCORE5 | r1fiqscore5:w1 | R | JORM | flag    | day     | and              | month            | Categ |
| 2 | R2FIQSCORE5 | r2fiqscore5:w2 | R | JORM | flag    | day     | and              | month            | Categ |
| 3 | R3FIQSCORE5 | r3fiqscore5:w3 | R | JORM | flag    | day     | and              | month            | Categ |
| 4 | R4FIQSCORE5 | r4fiqscore5:w4 | R | JORM | flag    | day     | and              | month            | Categ |
| 5 | R5FIQSCORE5 | r5fiqscore5:w5 | R | JORM | flag    | day     | and              | month            | Categ |
| 1 | S1FIQSCORE5 | s1fiqscore5:w1 | S | JORM | flag    | day     | and              | month            | Categ |
| 2 | S2FIQSCORE5 | s2fiqscore5:w2 | S | JORM | flag    | day     | and              | month            | Categ |
| 3 | S3FIQSCORE5 | s3fiqscore5:w3 | S | JORM | flag    | day     | and              | month            | Categ |
| 4 | S4FIQSCORE5 | s4fiqscore5:w4 | S | JORM | flag    | day     | and              | month            | Categ |
| 5 | S5FIQSCORE5 | s5fiqscore5:w5 | S | JORM | flag    | day     | and              | month            | Categ |
| 1 | R1IQSCORE6  | r1iqscore6:w1  | R | JORM | where   | things  | are usually kept | Categ            |       |
| 2 | R2IQSCORE6  | r2iqscore6:w2  | R | JORM | where   | things  | are usually kept | Categ            |       |
| 3 | R3IQSCORE6  | r3iqscore6:w3  | R | JORM | where   | things  | are usually kept | Categ            |       |



|   |             |                |   |      |                                    |       |
|---|-------------|----------------|---|------|------------------------------------|-------|
| 4 | R4IQSCORE6  | r4iqscore6:w4  | R | JORM | where things are usually kept      | Categ |
| 5 | R5IQSCORE6  | r5iqscore6:w5  | R | JORM | where things are usually kept      | Categ |
| 1 | S1IQSCORE6  | s1iqscore6:w1  | S | JORM | where things are usually kept      | Categ |
| 2 | S2IQSCORE6  | s2iqscore6:w2  | S | JORM | where things are usually kept      | Categ |
| 3 | S3IQSCORE6  | s3iqscore6:w3  | S | JORM | where things are usually kept      | Categ |
| 4 | S4IQSCORE6  | s4iqscore6:w4  | S | JORM | where things are usually kept      | Categ |
| 5 | S5IQSCORE6  | s5iqscore6:w5  | S | JORM | where things are usually kept      | Categ |
| 1 | R1FIQSCORE6 | rlfiqscore6:w1 | R | JORM | flag where things are usually kept | Categ |
| 2 | R2FIQSCORE6 | r2fiqscore6:w2 | R | JORM | flag where things are usually kept | Categ |
| 3 | R3FIQSCORE6 | r3fiqscore6:w3 | R | JORM | flag where things are usually kept | Categ |
| 4 | R4FIQSCORE6 | r4fiqscore6:w4 | R | JORM | flag where things are usually kept | Categ |
| 5 | R5FIQSCORE6 | r5fiqscore6:w5 | R | JORM | flag where things are usually kept | Categ |
| 1 | S1FIQSCORE6 | s1fiqscore6:w1 | S | JORM | flag where things are usually kept | Categ |
| 2 | S2FIQSCORE6 | s2fiqscore6:w2 | S | JORM | flag where things are usually kept | Categ |
| 3 | S3FIQSCORE6 | s3fiqscore6:w3 | S | JORM | flag where things are usually kept | Categ |
| 4 | S4FIQSCORE6 | s4fiqscore6:w4 | S | JORM | flag where things are usually kept | Categ |
| 5 | S5FIQSCORE6 | s5fiqscore6:w5 | S | JORM | flag where things are usually kept | Categ |
| 1 | R1IQSCORE7  | rliqscore7:w1  | R | JORM | where to find things               | Categ |
| 2 | R2IQSCORE7  | r2iqscore7:w2  | R | JORM | where to find things               | Categ |
| 3 | R3IQSCORE7  | r3iqscore7:w3  | R | JORM | where to find things               | Categ |
| 4 | R4IQSCORE7  | r4iqscore7:w4  | R | JORM | where to find things               | Categ |
| 5 | R5IQSCORE7  | r5iqscore7:w5  | R | JORM | where to find things               | Categ |
| 1 | S1IQSCORE7  | s1iqscore7:w1  | S | JORM | where to find things               | Categ |
| 2 | S2IQSCORE7  | s2iqscore7:w2  | S | JORM | where to find things               | Categ |
| 3 | S3IQSCORE7  | s3iqscore7:w3  | S | JORM | where to find things               | Categ |
| 4 | S4IQSCORE7  | s4iqscore7:w4  | S | JORM | where to find things               | Categ |
| 5 | S5IQSCORE7  | s5iqscore7:w5  | S | JORM | where to find things               | Categ |
| 1 | R1FIQSCORE7 | rlfiqscore7:w1 | R | JORM | flag where to find things          | Categ |
| 2 | R2FIQSCORE7 | r2fiqscore7:w2 | R | JORM | flag where to find things          | Categ |
| 3 | R3FIQSCORE7 | r3fiqscore7:w3 | R | JORM | flag where to find things          | Categ |
| 4 | R4FIQSCORE7 | r4fiqscore7:w4 | R | JORM | flag where to find things          | Categ |
| 5 | R5FIQSCORE7 | r5fiqscore7:w5 | R | JORM | flag where to find things          | Categ |
| 1 | S1FIQSCORE7 | s1fiqscore7:w1 | S | JORM | flag where to find things          | Categ |
| 2 | S2FIQSCORE7 | s2fiqscore7:w2 | S | JORM | flag where to find things          | Categ |
| 3 | S3FIQSCORE7 | s3fiqscore7:w3 | S | JORM | flag where to find things          | Categ |
| 4 | S4FIQSCORE7 | s4fiqscore7:w4 | S | JORM | flag where to find things          | Categ |
| 5 | S5FIQSCORE7 | s5fiqscore7:w5 | S | JORM | flag where to find things          | Categ |
| 1 | R1IQSCORE8  | rliqscore8:w1  | R | JORM | work familiar machines             | Categ |
| 2 | R2IQSCORE8  | r2iqscore8:w2  | R | JORM | work familiar machines             | Categ |
| 3 | R3IQSCORE8  | r3iqscore8:w3  | R | JORM | work familiar machines             | Categ |
| 4 | R4IQSCORE8  | r4iqscore8:w4  | R | JORM | work familiar machines             | Categ |
| 5 | R5IQSCORE8  | r5iqscore8:w5  | R | JORM | work familiar machines             | Categ |
| 1 | S1IQSCORE8  | s1iqscore8:w1  | S | JORM | work familiar machines             | Categ |
| 2 | S2IQSCORE8  | s2iqscore8:w2  | S | JORM | work familiar machines             | Categ |
| 3 | S3IQSCORE8  | s3iqscore8:w3  | S | JORM | work familiar machines             | Categ |
| 4 | S4IQSCORE8  | s4iqscore8:w4  | S | JORM | work familiar machines             | Categ |
| 5 | S5IQSCORE8  | s5iqscore8:w5  | S | JORM | work familiar machines             | Categ |
| 1 | R1FIQSCORE8 | rlfiqscore8:w1 | R | JORM | flag work familiar machines        | Categ |
| 2 | R2FIQSCORE8 | r2fiqscore8:w2 | R | JORM | flag work familiar machines        | Categ |
| 3 | R3FIQSCORE8 | r3fiqscore8:w3 | R | JORM | flag work familiar machines        | Categ |
| 4 | R4FIQSCORE8 | r4fiqscore8:w4 | R | JORM | flag work familiar machines        | Categ |
| 5 | R5FIQSCORE8 | r5fiqscore8:w5 | R | JORM | flag work familiar machines        | Categ |
| 1 | S1FIQSCORE8 | s1fiqscore8:w1 | S | JORM | flag work familiar machines        | Categ |

|   |              |                 |   |      |       |        |          |          |         |       |    |       |
|---|--------------|-----------------|---|------|-------|--------|----------|----------|---------|-------|----|-------|
| 2 | S2FIQSCORE8  | s2fiqscore8:w2  | S | JORM | flag  | work   | familiar | machines | Categ   |       |    |       |
| 3 | S3FIQSCORE8  | s3fiqscore8:w3  | S | JORM | flag  | work   | familiar | machines | Categ   |       |    |       |
| 4 | S4FIQSCORE8  | s4fiqscore8:w4  | S | JORM | flag  | work   | familiar | machines | Categ   |       |    |       |
| 5 | S5FIQSCORE8  | s5fiqscore8:w5  | S | JORM | flag  | work   | familiar | machines | Categ   |       |    |       |
| 1 | R1IQSCORE9   | r1iqscore9:w1   | R | JORM | new   | gadget | or       | machine  | Categ   |       |    |       |
| 2 | R2IQSCORE9   | r2iqscore9:w2   | R | JORM | new   | gadget | or       | machine  | Categ   |       |    |       |
| 3 | R3IQSCORE9   | r3iqscore9:w3   | R | JORM | new   | gadget | or       | machine  | Categ   |       |    |       |
| 4 | R4IQSCORE9   | r4iqscore9:w4   | R | JORM | new   | gadget | or       | machine  | Categ   |       |    |       |
| 5 | R5IQSCORE9   | r5iqscore9:w5   | R | JORM | new   | gadget | or       | machine  | Categ   |       |    |       |
| 1 | S1IQSCORE9   | s1iqscore9:w1   | S | JORM | new   | gadget | or       | machine  | Categ   |       |    |       |
| 2 | S2IQSCORE9   | s2iqscore9:w2   | S | JORM | new   | gadget | or       | machine  | Categ   |       |    |       |
| 3 | S3IQSCORE9   | s3iqscore9:w3   | S | JORM | new   | gadget | or       | machine  | Categ   |       |    |       |
| 4 | S4IQSCORE9   | s4iqscore9:w4   | S | JORM | new   | gadget | or       | machine  | Categ   |       |    |       |
| 5 | S5IQSCORE9   | s5iqscore9:w5   | S | JORM | new   | gadget | or       | machine  | Categ   |       |    |       |
| 1 | R1FIQSCORE9  | r1fiqscore9:w1  | R | JORM | flag  | new    | gadget   | or       | machine | Categ |    |       |
| 2 | R2FIQSCORE9  | r2fiqscore9:w2  | R | JORM | flag  | new    | gadget   | or       | machine | Categ |    |       |
| 3 | R3FIQSCORE9  | r3fiqscore9:w3  | R | JORM | flag  | new    | gadget   | or       | machine | Categ |    |       |
| 4 | R4FIQSCORE9  | r4fiqscore9:w4  | R | JORM | flag  | new    | gadget   | or       | machine | Categ |    |       |
| 5 | R5FIQSCORE9  | r5fiqscore9:w5  | R | JORM | flag  | new    | gadget   | or       | machine | Categ |    |       |
| 1 | S1FIQSCORE9  | s1fiqscore9:w1  | S | JORM | flag  | new    | gadget   | or       | machine | Categ |    |       |
| 2 | S2FIQSCORE9  | s2fiqscore9:w2  | S | JORM | flag  | new    | gadget   | or       | machine | Categ |    |       |
| 3 | S3FIQSCORE9  | s3fiqscore9:w3  | S | JORM | flag  | new    | gadget   | or       | machine | Categ |    |       |
| 4 | S4FIQSCORE9  | s4fiqscore9:w4  | S | JORM | flag  | new    | gadget   | or       | machine | Categ |    |       |
| 5 | S5FIQSCORE9  | s5fiqscore9:w5  | S | JORM | flag  | new    | gadget   | or       | machine | Categ |    |       |
| 1 | R1IQSCORE10  | r1iqscore10:w1  | R | JORM | new   | things | in       | general  | Categ   |       |    |       |
| 2 | R2IQSCORE10  | r2iqscore10:w2  | R | JORM | new   | things | in       | general  | Categ   |       |    |       |
| 3 | R3IQSCORE10  | r3iqscore10:w3  | R | JORM | new   | things | in       | general  | Categ   |       |    |       |
| 4 | R4IQSCORE10  | r4iqscore10:w4  | R | JORM | new   | things | in       | general  | Categ   |       |    |       |
| 5 | R5IQSCORE10  | r5iqscore10:w5  | R | JORM | new   | things | in       | general  | Categ   |       |    |       |
| 1 | S1IQSCORE10  | s1iqscore10:w1  | S | JORM | new   | things | in       | general  | Categ   |       |    |       |
| 2 | S2IQSCORE10  | s2iqscore10:w2  | S | JORM | new   | things | in       | general  | Categ   |       |    |       |
| 3 | S3IQSCORE10  | s3iqscore10:w3  | S | JORM | new   | things | in       | general  | Categ   |       |    |       |
| 4 | S4IQSCORE10  | s4iqscore10:w4  | S | JORM | new   | things | in       | general  | Categ   |       |    |       |
| 5 | S5IQSCORE10  | s5iqscore10:w5  | S | JORM | new   | things | in       | general  | Categ   |       |    |       |
| 1 | R1FIQSCORE10 | r1fiqscore10:w1 | R | JORM | flag  | new    | things   | in       | general | Categ |    |       |
| 2 | R2FIQSCORE10 | r2fiqscore10:w2 | R | JORM | flag  | new    | things   | in       | general | Categ |    |       |
| 3 | R3FIQSCORE10 | r3fiqscore10:w3 | R | JORM | flag  | new    | things   | in       | general | Categ |    |       |
| 4 | R4FIQSCORE10 | r4fiqscore10:w4 | R | JORM | flag  | new    | things   | in       | general | Categ |    |       |
| 5 | R5FIQSCORE10 | r5fiqscore10:w5 | R | JORM | flag  | new    | things   | in       | general | Categ |    |       |
| 1 | S1FIQSCORE10 | s1fiqscore10:w1 | S | JORM | flag  | new    | things   | in       | general | Categ |    |       |
| 2 | S2FIQSCORE10 | s2fiqscore10:w2 | S | JORM | flag  | new    | things   | in       | general | Categ |    |       |
| 3 | S3FIQSCORE10 | s3fiqscore10:w3 | S | JORM | flag  | new    | things   | in       | general | Categ |    |       |
| 4 | S4FIQSCORE10 | s4fiqscore10:w4 | S | JORM | flag  | new    | things   | in       | general | Categ |    |       |
| 5 | S5FIQSCORE10 | s5fiqscore10:w5 | S | JORM | flag  | new    | things   | in       | general | Categ |    |       |
| 1 | R1IQSCORE11  | r1iqscore11:w1  | R | JORM | story | in     | a        | book     | or      | on    | TV | Categ |
| 2 | R2IQSCORE11  | r2iqscore11:w2  | R | JORM | story | in     | a        | book     | or      | on    | TV | Categ |
| 3 | R3IQSCORE11  | r3iqscore11:w3  | R | JORM | story | in     | a        | book     | or      | on    | TV | Categ |
| 4 | R4IQSCORE11  | r4iqscore11:w4  | R | JORM | story | in     | a        | book     | or      | on    | TV | Categ |
| 5 | R5IQSCORE11  | r5iqscore11:w5  | R | JORM | story | in     | a        | book     | or      | on    | TV | Categ |
| 1 | S1IQSCORE11  | s1iqscore11:w1  | S | JORM | story | in     | a        | book     | or      | on    | TV | Categ |
| 2 | S2IQSCORE11  | s2iqscore11:w2  | S | JORM | story | in     | a        | book     | or      | on    | TV | Categ |
| 3 | S3IQSCORE11  | s3iqscore11:w3  | S | JORM | story | in     | a        | book     | or      | on    | TV | Categ |
| 4 | S4IQSCORE11  | s4iqscore11:w4  | S | JORM | story | in     | a        | book     | or      | on    | TV | Categ |
| 5 | S5IQSCORE11  | s5iqscore11:w5  | S | JORM | story | in     | a        | book     | or      | on    | TV | Categ |

|   |              |                 |   |      |                            |                                  |       |
|---|--------------|-----------------|---|------|----------------------------|----------------------------------|-------|
| 1 | R1FIQSCORE11 | r1fiqscore11:w1 | R | JORM | flag                       | story in a book or on TV         | Categ |
| 2 | R2FIQSCORE11 | r2fiqscore11:w2 | R | JORM | flag                       | story in a book or on TV         | Categ |
| 3 | R3FIQSCORE11 | r3fiqscore11:w3 | R | JORM | flag                       | story in a book or on TV         | Categ |
| 4 | R4FIQSCORE11 | r4fiqscore11:w4 | R | JORM | flag                       | story in a book or on TV         | Categ |
| 5 | R5FIQSCORE11 | r5fiqscore11:w5 | R | JORM | flag                       | story in a book or on TV         | Categ |
| 1 | S1FIQSCORE11 | s1fiqscore11:w1 | S | JORM | flag                       | story in a book or on TV         | Categ |
| 2 | S2FIQSCORE11 | s2fiqscore11:w2 | S | JORM | flag                       | story in a book or on TV         | Categ |
| 3 | S3FIQSCORE11 | s3fiqscore11:w3 | S | JORM | flag                       | story in a book or on TV         | Categ |
| 4 | S4FIQSCORE11 | s4fiqscore11:w4 | S | JORM | flag                       | story in a book or on TV         | Categ |
| 5 | S5FIQSCORE11 | s5fiqscore11:w5 | S | JORM | flag                       | story in a book or on TV         | Categ |
| 1 | R1IQSCORE12  | r1iqscore12:w1  | R | JORM | making decisions           | on everyday matters              | Categ |
| 2 | R2IQSCORE12  | r2iqscore12:w2  | R | JORM | making decisions           | on everyday matters              | Categ |
| 3 | R3IQSCORE12  | r3iqscore12:w3  | R | JORM | making decisions           | on everyday matters              | Categ |
| 4 | R4IQSCORE12  | r4iqscore12:w4  | R | JORM | making decisions           | on everyday matters              | Categ |
| 5 | R5IQSCORE12  | r5iqscore12:w5  | R | JORM | making decisions           | on everyday matters              | Categ |
| 1 | S1IQSCORE12  | s1iqscore12:w1  | S | JORM | making decisions           | on everyday matters              | Categ |
| 2 | S2IQSCORE12  | s2iqscore12:w2  | S | JORM | making decisions           | on everyday matters              | Categ |
| 3 | S3IQSCORE12  | s3iqscore12:w3  | S | JORM | making decisions           | on everyday matters              | Categ |
| 4 | S4IQSCORE12  | s4iqscore12:w4  | S | JORM | making decisions           | on everyday matters              | Categ |
| 5 | S5IQSCORE12  | s5iqscore12:w5  | S | JORM | making decisions           | on everyday matters              | Categ |
| 1 | R1FIQSCORE12 | r1fiqscore12:w1 | R | JORM | flag                       | making decisions on everyday mat | Categ |
| 2 | R2FIQSCORE12 | r2fiqscore12:w2 | R | JORM | flag                       | making decisions on everyday mat | Categ |
| 3 | R3FIQSCORE12 | r3fiqscore12:w3 | R | JORM | flag                       | making decisions on everyday mat | Categ |
| 4 | R4FIQSCORE12 | r4fiqscore12:w4 | R | JORM | flag                       | making decisions on everyday mat | Categ |
| 5 | R5FIQSCORE12 | r5fiqscore12:w5 | R | JORM | flag                       | making decisions on everyday mat | Categ |
| 1 | S1FIQSCORE12 | s1fiqscore12:w1 | S | JORM | flag                       | making decisions on everyday mat | Categ |
| 2 | S2FIQSCORE12 | s2fiqscore12:w2 | S | JORM | flag                       | making decisions on everyday mat | Categ |
| 3 | S3FIQSCORE12 | s3fiqscore12:w3 | S | JORM | flag                       | making decisions on everyday mat | Categ |
| 4 | S4FIQSCORE12 | s4fiqscore12:w4 | S | JORM | flag                       | making decisions on everyday mat | Categ |
| 5 | S5FIQSCORE12 | s5fiqscore12:w5 | S | JORM | flag                       | making decisions on everyday mat | Categ |
| 1 | R1IQSCORE13  | r1iqscore13:w1  | R | JORM | handling money             | for shopping                     | Categ |
| 2 | R2IQSCORE13  | r2iqscore13:w2  | R | JORM | handling money             | for shopping                     | Categ |
| 3 | R3IQSCORE13  | r3iqscore13:w3  | R | JORM | handling money             | for shopping                     | Categ |
| 4 | R4IQSCORE13  | r4iqscore13:w4  | R | JORM | handling money             | for shopping                     | Categ |
| 5 | R5IQSCORE13  | r5iqscore13:w5  | R | JORM | handling money             | for shopping                     | Categ |
| 1 | S1IQSCORE13  | s1iqscore13:w1  | S | JORM | handling money             | for shopping                     | Categ |
| 2 | S2IQSCORE13  | s2iqscore13:w2  | S | JORM | handling money             | for shopping                     | Categ |
| 3 | S3IQSCORE13  | s3iqscore13:w3  | S | JORM | handling money             | for shopping                     | Categ |
| 4 | S4IQSCORE13  | s4iqscore13:w4  | S | JORM | handling money             | for shopping                     | Categ |
| 5 | S5IQSCORE13  | s5iqscore13:w5  | S | JORM | handling money             | for shopping                     | Categ |
| 1 | R1FIQSCORE13 | r1fiqscore13:w1 | R | JORM | flag                       | handling money for shopping      | Categ |
| 2 | R2FIQSCORE13 | r2fiqscore13:w2 | R | JORM | flag                       | handling money for shopping      | Categ |
| 3 | R3FIQSCORE13 | r3fiqscore13:w3 | R | JORM | flag                       | handling money for shopping      | Categ |
| 4 | R4FIQSCORE13 | r4fiqscore13:w4 | R | JORM | flag                       | handling money for shopping      | Categ |
| 5 | R5FIQSCORE13 | r5fiqscore13:w5 | R | JORM | flag                       | handling money for shopping      | Categ |
| 1 | S1FIQSCORE13 | s1fiqscore13:w1 | S | JORM | flag                       | handling money for shopping      | Categ |
| 2 | S2FIQSCORE13 | s2fiqscore13:w2 | S | JORM | flag                       | handling money for shopping      | Categ |
| 3 | S3FIQSCORE13 | s3fiqscore13:w3 | S | JORM | flag                       | handling money for shopping      | Categ |
| 4 | S4FIQSCORE13 | s4fiqscore13:w4 | S | JORM | flag                       | handling money for shopping      | Categ |
| 5 | S5FIQSCORE13 | s5fiqscore13:w5 | S | JORM | flag                       | handling money for shopping      | Categ |
| 1 | R1IQSCORE14  | r1iqscore14:w1  | R | JORM | handling financial matters |                                  | Categ |
| 2 | R2IQSCORE14  | r2iqscore14:w2  | R | JORM | handling financial matters |                                  | Categ |
| 3 | R3IQSCORE14  | r3iqscore14:w3  | R | JORM | handling financial matters |                                  | Categ |

|   |              |                 |   |      |  |       |
|---|--------------|-----------------|---|------|--|-------|
| 4 | R4IQSCORE14  | r4iqscore14:w4  | R | JORM | handling financial matters             | Categ |
| 5 | R5IQSCORE14  | r5iqscore14:w5  | R | JORM | handling financial matters             | Categ |
| 1 | S1IQSCORE14  | s1iqscore14:w1  | S | JORM | handling financial matters             | Categ |
| 2 | S2IQSCORE14  | s2iqscore14:w2  | S | JORM | handling financial matters             | Categ |
| 3 | S3IQSCORE14  | s3iqscore14:w3  | S | JORM | handling financial matters             | Categ |
| 4 | S4IQSCORE14  | s4iqscore14:w4  | S | JORM | handling financial matters             | Categ |
| 5 | S5IQSCORE14  | s5iqscore14:w5  | S | JORM | handling financial matters             | Categ |
| 1 | R1FIQSCORE14 | rlfiqscore14:w1 | R | JORM | flag handling financial matters        | Categ |
| 2 | R2FIQSCORE14 | r2fiqscore14:w2 | R | JORM | flag handling financial matters        | Categ |
| 3 | R3FIQSCORE14 | r3fiqscore14:w3 | R | JORM | flag handling financial matters        | Categ |
| 4 | R4FIQSCORE14 | r4fiqscore14:w4 | R | JORM | flag handling financial matters        | Categ |
| 5 | R5FIQSCORE14 | r5fiqscore14:w5 | R | JORM | flag handling financial matters        | Categ |
| 1 | S1FIQSCORE14 | slfiqscore14:w1 | S | JORM | flag handling financial matters        | Categ |
| 2 | S2FIQSCORE14 | s2fiqscore14:w2 | S | JORM | flag handling financial matters        | Categ |
| 3 | S3FIQSCORE14 | s3fiqscore14:w3 | S | JORM | flag handling financial matters        | Categ |
| 4 | S4FIQSCORE14 | s4fiqscore14:w4 | S | JORM | flag handling financial matters        | Categ |
| 5 | S5FIQSCORE14 | s5fiqscore14:w5 | S | JORM | flag handling financial matters        | Categ |
| 1 | R1IQSCORE15  | r1iqscore15:w1  | R | JORM | handling other everyday arithmetic pro | Categ |
| 2 | R2IQSCORE15  | r2iqscore15:w2  | R | JORM | handling other everyday arithmetic pro | Categ |
| 3 | R3IQSCORE15  | r3iqscore15:w3  | R | JORM | handling other everyday arithmetic pro | Categ |
| 4 | R4IQSCORE15  | r4iqscore15:w4  | R | JORM | handling other everyday arithmetic pro | Categ |
| 5 | R5IQSCORE15  | r5iqscore15:w5  | R | JORM | handling other everyday arithmetic pro | Categ |
| 1 | S1IQSCORE15  | s1iqscore15:w1  | S | JORM | handling other everyday arithmetic pro | Categ |
| 2 | S2IQSCORE15  | s2iqscore15:w2  | S | JORM | handling other everyday arithmetic pro | Categ |
| 3 | S3IQSCORE15  | s3iqscore15:w3  | S | JORM | handling other everyday arithmetic pro | Categ |
| 4 | S4IQSCORE15  | s4iqscore15:w4  | S | JORM | handling other everyday arithmetic pro | Categ |
| 5 | S5IQSCORE15  | s5iqscore15:w5  | S | JORM | handling other everyday arithmetic pro | Categ |
| 1 | R1FIQSCORE15 | rlfiqscore15:w1 | R | JORM | flag handling other everyday arithmet  | Categ |
| 2 | R2FIQSCORE15 | r2fiqscore15:w2 | R | JORM | flag handling other everyday arithmet  | Categ |
| 3 | R3FIQSCORE15 | r3fiqscore15:w3 | R | JORM | flag handling other everyday arithmet  | Categ |
| 4 | R4FIQSCORE15 | r4fiqscore15:w4 | R | JORM | flag handling other everyday arithmet  | Categ |
| 5 | R5FIQSCORE15 | r5fiqscore15:w5 | R | JORM | flag handling other everyday arithmet  | Categ |
| 1 | S1FIQSCORE15 | slfiqscore15:w1 | S | JORM | flag handling other everyday arithmet  | Categ |
| 2 | S2FIQSCORE15 | s2fiqscore15:w2 | S | JORM | flag handling other everyday arithmet  | Categ |
| 3 | S3FIQSCORE15 | s3fiqscore15:w3 | S | JORM | flag handling other everyday arithmet  | Categ |
| 4 | S4FIQSCORE15 | s4fiqscore15:w4 | S | JORM | flag handling other everyday arithmet  | Categ |
| 5 | S5FIQSCORE15 | s5fiqscore15:w5 | S | JORM | flag handling other everyday arithmet  | Categ |
| 1 | R1IQSCORE16  | r1iqscore16:w1  | R | JORM | reason things through                  | Categ |
| 2 | R2IQSCORE16  | r2iqscore16:w2  | R | JORM | reason things through                  | Categ |
| 3 | R3IQSCORE16  | r3iqscore16:w3  | R | JORM | reason things through                  | Categ |
| 4 | R4IQSCORE16  | r4iqscore16:w4  | R | JORM | reason things through                  | Categ |
| 5 | R5IQSCORE16  | r5iqscore16:w5  | R | JORM | reason things through                  | Categ |
| 1 | S1IQSCORE16  | s1iqscore16:w1  | S | JORM | reason things through                  | Categ |
| 2 | S2IQSCORE16  | s2iqscore16:w2  | S | JORM | reason things through                  | Categ |
| 3 | S3IQSCORE16  | s3iqscore16:w3  | S | JORM | reason things through                  | Categ |
| 4 | S4IQSCORE16  | s4iqscore16:w4  | S | JORM | reason things through                  | Categ |
| 5 | S5IQSCORE16  | s5iqscore16:w5  | S | JORM | reason things through                  | Categ |
| 1 | R1FIQSCORE16 | rlfiqscore16:w1 | R | JORM | flag reason things through             | Categ |
| 2 | R2FIQSCORE16 | r2fiqscore16:w2 | R | JORM | flag reason things through             | Categ |
| 3 | R3FIQSCORE16 | r3fiqscore16:w3 | R | JORM | flag reason things through             | Categ |
| 4 | R4FIQSCORE16 | r4fiqscore16:w4 | R | JORM | flag reason things through             | Categ |
| 5 | R5FIQSCORE16 | r5fiqscore16:w5 | R | JORM | flag reason things through             | Categ |
| 1 | S1FIQSCORE16 | slfiqscore16:w1 | S | JORM | flag reason things through             | Categ |

|   |              |                 |   |      |         |        |        |         |       |
|---|--------------|-----------------|---|------|---------|--------|--------|---------|-------|
| 2 | S2FIQSCORE16 | s2fiqscore16:w2 | S | JORM | flag    | reason | things | through | Categ |
| 3 | S3FIQSCORE16 | s3fiqscore16:w3 | S | JORM | flag    | reason | things | through | Categ |
| 4 | S4FIQSCORE16 | s4fiqscore16:w4 | S | JORM | flag    | reason | things | through | Categ |
| 5 | S5FIQSCORE16 | s5fiqscore16:w5 | S | JORM | flag    | reason | things | through | Categ |
| 1 | R1JORMSCORE  | r1jormscore:w1  | R | JORM | average | score  |        |         | Cont  |
| 2 | R2JORMSCORE  | r2jormscore:w2  | R | JORM | average | score  |        |         | Cont  |
| 3 | R3JORMSCORE  | r3jormscore:w3  | R | JORM | average | score  |        |         | Cont  |
| 4 | R4JORMSCORE  | r4jormscore:w4  | R | JORM | average | score  |        |         | Cont  |
| 5 | R5JORMSCORE  | r5jormscore:w5  | R | JORM | average | score  |        |         | Cont  |
| 1 | S1JORMSCORE  | s1jormscore:w1  | S | JORM | average | score  |        |         | Cont  |
| 2 | S2JORMSCORE  | s2jormscore:w2  | S | JORM | average | score  |        |         | Cont  |
| 3 | S3JORMSCORE  | s3jormscore:w3  | S | JORM | average | score  |        |         | Cont  |
| 4 | S4JORMSCORE  | s4jormscore:w4  | S | JORM | average | score  |        |         | Cont  |
| 5 | S5JORMSCORE  | s5jormscore:w5  | S | JORM | average | score  |        |         | Cont  |

## Descriptive Statistics

| Variable    | N     | Mean  | Std Dev | Minimum | Maximum |
|-------------|-------|-------|---------|---------|---------|
| R1IQSCORE1  | 1032  | 3.16  | 0.59    | 1.00    | 5.00    |
| R2IQSCORE1  | 1178  | 3.13  | 0.56    | 1.00    | 5.00    |
| R3IQSCORE1  | 1275  | 3.31  | 0.80    | 1.00    | 5.00    |
| R4IQSCORE1  | 929   | 3.38  | 0.76    | 1.00    | 5.00    |
| R5IQSCORE1  | 1328  | 3.26  | 0.74    | 1.00    | 5.00    |
| S1IQSCORE1  | 660   | 3.09  | 0.52    | 1.00    | 5.00    |
| S2IQSCORE1  | 821   | 3.10  | 0.54    | 1.00    | 5.00    |
| S3IQSCORE1  | 726   | 3.17  | 0.73    | 1.00    | 5.00    |
| S4IQSCORE1  | 470   | 3.26  | 0.73    | 1.00    | 5.00    |
| S5IQSCORE1  | 563   | 3.23  | 0.65    | 1.00    | 5.00    |
| R1FIQSCORE1 | 15186 | -0.93 | 0.26    | -1.00   | 1.00    |
| R2FIQSCORE1 | 13704 | -0.91 | 0.28    | -1.00   | 1.00    |
| R3FIQSCORE1 | 15723 | -0.92 | 0.27    | -1.00   | 1.00    |
| R4FIQSCORE1 | 14779 | -0.94 | 0.24    | -1.00   | 1.00    |
| R5FIQSCORE1 | 17114 | -0.92 | 0.27    | -1.00   | 1.00    |
| S1FIQSCORE1 | 10648 | -0.94 | 0.25    | -1.00   | 1.00    |
| S2FIQSCORE1 | 9564  | -0.91 | 0.28    | -1.00   | 1.00    |
| S3FIQSCORE1 | 10592 | -0.93 | 0.25    | -1.00   | 1.00    |
| S4FIQSCORE1 | 9652  | -0.95 | 0.22    | -1.00   | 1.00    |
| S5FIQSCORE1 | 7638  | -0.92 | 0.27    | -1.00   | 1.00    |
| R1IQSCORE2  | 1032  | 3.14  | 0.57    | 1.00    | 5.00    |
| R2IQSCORE2  | 1178  | 3.12  | 0.53    | 1.00    | 5.00    |
| R3IQSCORE2  | 1275  | 3.25  | 0.75    | 1.00    | 5.00    |
| R4IQSCORE2  | 929   | 3.34  | 0.75    | 1.00    | 5.00    |
| R5IQSCORE2  | 1328  | 3.22  | 0.72    | 1.00    | 5.00    |
| S1IQSCORE2  | 660   | 3.08  | 0.54    | 1.00    | 5.00    |
| S2IQSCORE2  | 821   | 3.09  | 0.50    | 1.00    | 5.00    |
| S3IQSCORE2  | 726   | 3.12  | 0.64    | 1.00    | 5.00    |
| S4IQSCORE2  | 470   | 3.23  | 0.68    | 1.00    | 5.00    |
| S5IQSCORE2  | 563   | 3.19  | 0.66    | 1.00    | 5.00    |
| R1FIQSCORE2 | 15186 | -0.93 | 0.26    | -1.00   | 1.00    |
| R2FIQSCORE2 | 13704 | -0.91 | 0.28    | -1.00   | 1.00    |
| R3FIQSCORE2 | 15723 | -0.92 | 0.27    | -1.00   | 1.00    |
| R4FIQSCORE2 | 14779 | -0.94 | 0.24    | -1.00   | 1.00    |
| R5FIQSCORE2 | 17114 | -0.92 | 0.27    | -1.00   | 1.00    |
| S1FIQSCORE2 | 10648 | -0.94 | 0.25    | -1.00   | 1.00    |

|             |       |       |      |       |      |
|-------------|-------|-------|------|-------|------|
| S2FIQSCORE2 | 9564  | -0.91 | 0.28 | -1.00 | 1.00 |
| S3FIQSCORE2 | 10592 | -0.93 | 0.25 | -1.00 | 1.00 |
| S4FIQSCORE2 | 9652  | -0.95 | 0.22 | -1.00 | 0.00 |
| S5FIQSCORE2 | 7638  | -0.93 | 0.27 | -1.00 | 1.00 |
| R1IQSCORE3  | 1032  | 3.14  | 0.57 | 1.00  | 5.00 |
| R2IQSCORE3  | 1178  | 3.16  | 0.54 | 1.00  | 5.00 |
| R3IQSCORE3  | 1275  | 3.29  | 0.78 | 1.00  | 5.00 |
| R4IQSCORE3  | 929   | 3.37  | 0.78 | 1.00  | 5.00 |
| R5IQSCORE3  | 1328  | 3.27  | 0.72 | 1.00  | 5.00 |
| S1IQSCORE3  | 660   | 3.05  | 0.52 | 1.00  | 5.00 |
| S2IQSCORE3  | 821   | 3.13  | 0.50 | 1.00  | 5.00 |
| S3IQSCORE3  | 726   | 3.16  | 0.69 | 1.00  | 5.00 |
| S4IQSCORE3  | 470   | 3.26  | 0.72 | 1.00  | 5.00 |
| S5IQSCORE3  | 563   | 3.22  | 0.66 | 1.00  | 5.00 |
| R1FIQSCORE3 | 15186 | -0.93 | 0.26 | -1.00 | 1.00 |
| R2FIQSCORE3 | 13704 | -0.91 | 0.28 | -1.00 | 1.00 |
| R3FIQSCORE3 | 15723 | -0.92 | 0.27 | -1.00 | 1.00 |
| R4FIQSCORE3 | 14779 | -0.94 | 0.24 | -1.00 | 1.00 |
| R5FIQSCORE3 | 17114 | -0.92 | 0.27 | -1.00 | 1.00 |
| S1FIQSCORE3 | 10648 | -0.94 | 0.25 | -1.00 | 1.00 |
| S2FIQSCORE3 | 9564  | -0.91 | 0.28 | -1.00 | 1.00 |
| S3FIQSCORE3 | 10592 | -0.93 | 0.25 | -1.00 | 1.00 |
| S4FIQSCORE3 | 9652  | -0.95 | 0.22 | -1.00 | 0.00 |
| S5FIQSCORE3 | 7638  | -0.93 | 0.26 | -1.00 | 1.00 |
| R1IQSCORE4  | 1032  | 3.14  | 0.61 | 1.00  | 5.00 |
| R2IQSCORE4  | 1178  | 3.14  | 0.53 | 1.00  | 5.00 |
| R3IQSCORE4  | 1275  | 3.31  | 0.79 | 1.00  | 5.00 |
| R4IQSCORE4  | 929   | 3.37  | 0.80 | 1.00  | 5.00 |
| R5IQSCORE4  | 1328  | 3.27  | 0.71 | 1.00  | 5.00 |
| S1IQSCORE4  | 660   | 3.07  | 0.56 | 1.00  | 5.00 |
| S2IQSCORE4  | 821   | 3.09  | 0.47 | 1.00  | 5.00 |
| S3IQSCORE4  | 726   | 3.15  | 0.68 | 1.00  | 5.00 |
| S4IQSCORE4  | 470   | 3.21  | 0.71 | 1.00  | 5.00 |
| S5IQSCORE4  | 563   | 3.24  | 0.65 | 1.00  | 5.00 |
| R1FIQSCORE4 | 15186 | -0.93 | 0.26 | -1.00 | 1.00 |
| R2FIQSCORE4 | 13704 | -0.91 | 0.29 | -1.00 | 1.00 |
| R3FIQSCORE4 | 15723 | -0.92 | 0.27 | -1.00 | 1.00 |
| R4FIQSCORE4 | 14779 | -0.94 | 0.25 | -1.00 | 1.00 |
| R5FIQSCORE4 | 17114 | -0.92 | 0.27 | -1.00 | 1.00 |
| S1FIQSCORE4 | 10648 | -0.94 | 0.25 | -1.00 | 1.00 |
| S2FIQSCORE4 | 9564  | -0.91 | 0.28 | -1.00 | 1.00 |
| S3FIQSCORE4 | 10592 | -0.93 | 0.25 | -1.00 | 1.00 |
| S4FIQSCORE4 | 9652  | -0.95 | 0.22 | -1.00 | 1.00 |
| S5FIQSCORE4 | 7638  | -0.93 | 0.27 | -1.00 | 1.00 |
| R1IQSCORE5  | 1032  | 3.16  | 0.59 | 1.00  | 5.00 |
| R2IQSCORE5  | 1178  | 3.17  | 0.58 | 1.00  | 5.00 |
| R3IQSCORE5  | 1275  | 3.32  | 0.82 | 1.00  | 5.00 |
| R4IQSCORE5  | 929   | 3.42  | 0.82 | 1.00  | 5.00 |
| R5IQSCORE5  | 1328  | 3.33  | 0.74 | 1.00  | 5.00 |
| S1IQSCORE5  | 660   | 3.08  | 0.52 | 1.00  | 5.00 |
| S2IQSCORE5  | 821   | 3.12  | 0.55 | 1.00  | 5.00 |
| S3IQSCORE5  | 726   | 3.17  | 0.70 | 1.00  | 5.00 |
| S4IQSCORE5  | 470   | 3.26  | 0.75 | 1.00  | 5.00 |
| S5IQSCORE5  | 563   | 3.26  | 0.69 | 1.00  | 5.00 |

|             |       |       |      |       |      |
|-------------|-------|-------|------|-------|------|
| R1FIQSCORE5 | 15186 | -0.93 | 0.26 | -1.00 | 1.00 |
| R2FIQSCORE5 | 13704 | -0.91 | 0.28 | -1.00 | 1.00 |
| R3FIQSCORE5 | 15723 | -0.92 | 0.27 | -1.00 | 1.00 |
| R4FIQSCORE5 | 14779 | -0.94 | 0.24 | -1.00 | 1.00 |
| R5FIQSCORE5 | 17114 | -0.92 | 0.27 | -1.00 | 1.00 |
| S1FIQSCORE5 | 10648 | -0.94 | 0.25 | -1.00 | 1.00 |
| S2FIQSCORE5 | 9564  | -0.91 | 0.28 | -1.00 | 1.00 |
| S3FIQSCORE5 | 10592 | -0.93 | 0.25 | -1.00 | 1.00 |
| S4FIQSCORE5 | 9652  | -0.95 | 0.22 | -1.00 | 1.00 |
| S5FIQSCORE5 | 7638  | -0.93 | 0.27 | -1.00 | 1.00 |
| R1IQSCORE6  | 1032  | 3.22  | 0.61 | 1.00  | 5.00 |
| R2IQSCORE6  | 1178  | 3.22  | 0.60 | 1.00  | 5.00 |
| R3IQSCORE6  | 1275  | 3.35  | 0.79 | 1.00  | 5.00 |
| R4IQSCORE6  | 929   | 3.43  | 0.81 | 1.00  | 5.00 |
| R5IQSCORE6  | 1328  | 3.36  | 0.72 | 1.00  | 5.00 |
| S1IQSCORE6  | 660   | 3.14  | 0.57 | 1.00  | 5.00 |
| S2IQSCORE6  | 821   | 3.18  | 0.57 | 1.00  | 5.00 |
| S3IQSCORE6  | 726   | 3.22  | 0.71 | 1.00  | 5.00 |
| S4IQSCORE6  | 470   | 3.29  | 0.77 | 1.00  | 5.00 |
| S5IQSCORE6  | 563   | 3.33  | 0.67 | 1.00  | 5.00 |
| R1FIQSCORE6 | 15186 | -0.93 | 0.26 | -1.00 | 1.00 |
| R2FIQSCORE6 | 13704 | -0.91 | 0.28 | -1.00 | 1.00 |
| R3FIQSCORE6 | 15723 | -0.92 | 0.27 | -1.00 | 1.00 |
| R4FIQSCORE6 | 14779 | -0.94 | 0.25 | -1.00 | 1.00 |
| R5FIQSCORE6 | 17114 | -0.92 | 0.27 | -1.00 | 1.00 |
| S1FIQSCORE6 | 10648 | -0.94 | 0.25 | -1.00 | 1.00 |
| S2FIQSCORE6 | 9564  | -0.91 | 0.28 | -1.00 | 1.00 |
| S3FIQSCORE6 | 10592 | -0.93 | 0.25 | -1.00 | 1.00 |
| S4FIQSCORE6 | 9652  | -0.95 | 0.22 | -1.00 | 1.00 |
| S5FIQSCORE6 | 7638  | -0.93 | 0.26 | -1.00 | 1.00 |
| R1IQSCORE7  | 1032  | 3.25  | 0.63 | 1.00  | 5.00 |
| R2IQSCORE7  | 1178  | 3.24  | 0.60 | 1.00  | 5.00 |
| R3IQSCORE7  | 1275  | 3.36  | 0.79 | 1.00  | 5.00 |
| R4IQSCORE7  | 929   | 3.48  | 0.82 | 1.00  | 5.00 |
| R5IQSCORE7  | 1328  | 3.38  | 0.74 | 1.00  | 5.00 |
| S1IQSCORE7  | 660   | 3.17  | 0.57 | 1.00  | 5.00 |
| S2IQSCORE7  | 821   | 3.20  | 0.56 | 1.00  | 5.00 |
| S3IQSCORE7  | 726   | 3.22  | 0.69 | 1.00  | 5.00 |
| S4IQSCORE7  | 470   | 3.34  | 0.78 | 1.00  | 5.00 |
| S5IQSCORE7  | 563   | 3.33  | 0.69 | 1.00  | 5.00 |
| R1FIQSCORE7 | 15186 | -0.93 | 0.26 | -1.00 | 1.00 |
| R2FIQSCORE7 | 13704 | -0.91 | 0.28 | -1.00 | 1.00 |
| R3FIQSCORE7 | 15723 | -0.92 | 0.27 | -1.00 | 1.00 |
| R4FIQSCORE7 | 14779 | -0.94 | 0.25 | -1.00 | 1.00 |
| R5FIQSCORE7 | 17114 | -0.92 | 0.27 | -1.00 | 1.00 |
| S1FIQSCORE7 | 10648 | -0.94 | 0.25 | -1.00 | 1.00 |
| S2FIQSCORE7 | 9564  | -0.91 | 0.28 | -1.00 | 1.00 |
| S3FIQSCORE7 | 10592 | -0.93 | 0.25 | -1.00 | 1.00 |
| S4FIQSCORE7 | 9652  | -0.95 | 0.22 | -1.00 | 1.00 |
| S5FIQSCORE7 | 7638  | -0.93 | 0.27 | -1.00 | 1.00 |
| R1IQSCORE8  | 1032  | 3.18  | 0.63 | 1.00  | 5.00 |
| R2IQSCORE8  | 1178  | 3.16  | 0.57 | 1.00  | 5.00 |
| R3IQSCORE8  | 1275  | 3.36  | 0.81 | 1.00  | 5.00 |

|              |       |       |      |       |      |
|--------------|-------|-------|------|-------|------|
| R4IQSCORE8   | 929   | 3.41  | 0.80 | 1.00  | 5.00 |
| R5IQSCORE8   | 1328  | 3.30  | 0.74 | 1.00  | 5.00 |
| S1IQSCORE8   | 660   | 3.09  | 0.57 | 1.00  | 5.00 |
| S2IQSCORE8   | 821   | 3.10  | 0.51 | 1.00  | 5.00 |
| S3IQSCORE8   | 726   | 3.20  | 0.67 | 1.00  | 5.00 |
| S4IQSCORE8   | 470   | 3.26  | 0.71 | 1.00  | 5.00 |
| S5IQSCORE8   | 563   | 3.26  | 0.68 | 1.00  | 5.00 |
| R1FIQSCORE8  | 15186 | -0.93 | 0.26 | -1.00 | 1.00 |
| R2FIQSCORE8  | 13704 | -0.91 | 0.29 | -1.00 | 1.00 |
| R3FIQSCORE8  | 15723 | -0.92 | 0.28 | -1.00 | 1.00 |
| R4FIQSCORE8  | 14779 | -0.94 | 0.25 | -1.00 | 1.00 |
| R5FIQSCORE8  | 17114 | -0.92 | 0.28 | -1.00 | 1.00 |
| S1FIQSCORE8  | 10648 | -0.94 | 0.25 | -1.00 | 1.00 |
| S2FIQSCORE8  | 9564  | -0.91 | 0.29 | -1.00 | 1.00 |
| S3FIQSCORE8  | 10592 | -0.93 | 0.26 | -1.00 | 1.00 |
| S4FIQSCORE8  | 9652  | -0.95 | 0.22 | -1.00 | 1.00 |
| S5FIQSCORE8  | 7638  | -0.92 | 0.27 | -1.00 | 1.00 |
| R1IQSCORE9   | 1032  | 3.22  | 0.69 | 1.00  | 5.00 |
| R2IQSCORE9   | 1178  | 3.18  | 0.64 | 1.00  | 5.00 |
| R3IQSCORE9   | 1275  | 3.42  | 0.85 | 1.00  | 5.00 |
| R4IQSCORE9   | 929   | 3.45  | 0.84 | 1.00  | 5.00 |
| R5IQSCORE9   | 1328  | 3.36  | 0.84 | 1.00  | 5.00 |
| S1IQSCORE9   | 660   | 3.12  | 0.62 | 1.00  | 5.00 |
| S2IQSCORE9   | 821   | 3.11  | 0.57 | 1.00  | 5.00 |
| S3IQSCORE9   | 726   | 3.21  | 0.73 | 1.00  | 5.00 |
| S4IQSCORE9   | 470   | 3.29  | 0.79 | 1.00  | 5.00 |
| S5IQSCORE9   | 563   | 3.30  | 0.74 | 1.00  | 5.00 |
| R1FIQSCORE9  | 15186 | -0.93 | 0.27 | -1.00 | 1.00 |
| R2FIQSCORE9  | 13704 | -0.91 | 0.30 | -1.00 | 1.00 |
| R3FIQSCORE9  | 15723 | -0.92 | 0.28 | -1.00 | 1.00 |
| R4FIQSCORE9  | 14779 | -0.94 | 0.25 | -1.00 | 1.00 |
| R5FIQSCORE9  | 17114 | -0.92 | 0.28 | -1.00 | 1.00 |
| S1FIQSCORE9  | 10648 | -0.94 | 0.26 | -1.00 | 1.00 |
| S2FIQSCORE9  | 9564  | -0.91 | 0.29 | -1.00 | 1.00 |
| S3FIQSCORE9  | 10592 | -0.93 | 0.26 | -1.00 | 1.00 |
| S4FIQSCORE9  | 9652  | -0.95 | 0.22 | -1.00 | 1.00 |
| S5FIQSCORE9  | 7638  | -0.92 | 0.27 | -1.00 | 1.00 |
| R1IQSCORE10  | 1032  | 3.16  | 0.68 | 1.00  | 5.00 |
| R2IQSCORE10  | 1178  | 3.15  | 0.62 | 1.00  | 5.00 |
| R3IQSCORE10  | 1275  | 3.39  | 0.85 | 1.00  | 5.00 |
| R4IQSCORE10  | 929   | 3.43  | 0.87 | 1.00  | 5.00 |
| R5IQSCORE10  | 1328  | 3.34  | 0.83 | 1.00  | 5.00 |
| S1IQSCORE10  | 660   | 3.07  | 0.62 | 1.00  | 5.00 |
| S2IQSCORE10  | 821   | 3.09  | 0.57 | 1.00  | 5.00 |
| S3IQSCORE10  | 726   | 3.20  | 0.75 | 1.00  | 5.00 |
| S4IQSCORE10  | 470   | 3.28  | 0.80 | 1.00  | 5.00 |
| S5IQSCORE10  | 563   | 3.31  | 0.74 | 1.00  | 5.00 |
| R1FIQSCORE10 | 15186 | -0.93 | 0.26 | -1.00 | 1.00 |
| R2FIQSCORE10 | 13704 | -0.91 | 0.29 | -1.00 | 1.00 |
| R3FIQSCORE10 | 15723 | -0.92 | 0.28 | -1.00 | 1.00 |
| R4FIQSCORE10 | 14779 | -0.94 | 0.25 | -1.00 | 1.00 |
| R5FIQSCORE10 | 17114 | -0.92 | 0.27 | -1.00 | 1.00 |
| S1FIQSCORE10 | 10648 | -0.94 | 0.25 | -1.00 | 1.00 |



|              |       |       |      |       |      |
|--------------|-------|-------|------|-------|------|
| S2FIQSCORE10 | 9564  | -0.91 | 0.29 | -1.00 | 1.00 |
| S3FIQSCORE10 | 10592 | -0.93 | 0.26 | -1.00 | 1.00 |
| S4FIQSCORE10 | 9652  | -0.95 | 0.22 | -1.00 | 1.00 |
| S5FIQSCORE10 | 7638  | -0.93 | 0.27 | -1.00 | 1.00 |
| R1IQSCORE11  | 1032  | 3.16  | 0.60 | 1.00  | 5.00 |
| R2IQSCORE11  | 1178  | 3.12  | 0.58 | 1.00  | 5.00 |
| R3IQSCORE11  | 1275  | 3.29  | 0.79 | 1.00  | 5.00 |
| R4IQSCORE11  | 929   | 3.36  | 0.84 | 1.00  | 5.00 |
| R5IQSCORE11  | 1328  | 3.27  | 0.78 | 1.00  | 5.00 |
| S1IQSCORE11  | 660   | 3.07  | 0.55 | 1.00  | 5.00 |
| S2IQSCORE11  | 821   | 3.07  | 0.55 | 1.00  | 5.00 |
| S3IQSCORE11  | 726   | 3.14  | 0.65 | 1.00  | 5.00 |
| S4IQSCORE11  | 470   | 3.22  | 0.79 | 1.00  | 5.00 |
| S5IQSCORE11  | 563   | 3.24  | 0.72 | 1.00  | 5.00 |
| R1FIQSCORE11 | 15186 | -0.93 | 0.26 | -1.00 | 1.00 |
| R2FIQSCORE11 | 13704 | -0.91 | 0.29 | -1.00 | 1.00 |
| R3FIQSCORE11 | 15723 | -0.92 | 0.28 | -1.00 | 1.00 |
| R4FIQSCORE11 | 14779 | -0.94 | 0.25 | -1.00 | 1.00 |
| R5FIQSCORE11 | 17114 | -0.92 | 0.27 | -1.00 | 1.00 |
| S1FIQSCORE11 | 10648 | -0.94 | 0.25 | -1.00 | 1.00 |
| S2FIQSCORE11 | 9564  | -0.91 | 0.29 | -1.00 | 1.00 |
| S3FIQSCORE11 | 10592 | -0.93 | 0.26 | -1.00 | 1.00 |
| S4FIQSCORE11 | 9652  | -0.95 | 0.22 | -1.00 | 1.00 |
| S5FIQSCORE11 | 7638  | -0.93 | 0.27 | -1.00 | 1.00 |
| R1IQSCORE12  | 1032  | 3.15  | 0.61 | 1.00  | 5.00 |
| R2IQSCORE12  | 1178  | 3.13  | 0.56 | 1.00  | 5.00 |
| R3IQSCORE12  | 1275  | 3.27  | 0.77 | 1.00  | 5.00 |
| R4IQSCORE12  | 929   | 3.34  | 0.83 | 1.00  | 5.00 |
| R5IQSCORE12  | 1328  | 3.28  | 0.78 | 1.00  | 5.00 |
| S1IQSCORE12  | 660   | 3.08  | 0.55 | 1.00  | 5.00 |
| S2IQSCORE12  | 821   | 3.08  | 0.49 | 1.00  | 5.00 |
| S3IQSCORE12  | 726   | 3.16  | 0.65 | 1.00  | 5.00 |
| S4IQSCORE12  | 470   | 3.16  | 0.75 | 1.00  | 5.00 |
| S5IQSCORE12  | 563   | 3.24  | 0.72 | 1.00  | 5.00 |
| R1FIQSCORE12 | 15186 | -0.93 | 0.26 | -1.00 | 1.00 |
| R2FIQSCORE12 | 13704 | -0.91 | 0.29 | -1.00 | 1.00 |
| R3FIQSCORE12 | 15723 | -0.92 | 0.27 | -1.00 | 1.00 |
| R4FIQSCORE12 | 14779 | -0.94 | 0.25 | -1.00 | 1.00 |
| R5FIQSCORE12 | 17114 | -0.92 | 0.27 | -1.00 | 1.00 |
| S1FIQSCORE12 | 10648 | -0.94 | 0.25 | -1.00 | 1.00 |
| S2FIQSCORE12 | 9564  | -0.91 | 0.28 | -1.00 | 1.00 |
| S3FIQSCORE12 | 10592 | -0.93 | 0.25 | -1.00 | 1.00 |
| S4FIQSCORE12 | 9652  | -0.95 | 0.22 | -1.00 | 1.00 |
| S5FIQSCORE12 | 7638  | -0.93 | 0.26 | -1.00 | 1.00 |
| R1IQSCORE13  | 1032  | 3.19  | 0.67 | 1.00  | 5.00 |
| R2IQSCORE13  | 1178  | 3.12  | 0.63 | 1.00  | 5.00 |
| R3IQSCORE13  | 1275  | 3.34  | 0.85 | 1.00  | 5.00 |
| R4IQSCORE13  | 929   | 3.44  | 0.89 | 1.00  | 5.00 |
| R5IQSCORE13  | 1328  | 3.30  | 0.80 | 1.00  | 5.00 |
| S1IQSCORE13  | 660   | 3.08  | 0.60 | 1.00  | 5.00 |
| S2IQSCORE13  | 821   | 3.08  | 0.58 | 1.00  | 5.00 |
| S3IQSCORE13  | 726   | 3.19  | 0.74 | 1.00  | 5.00 |
| S4IQSCORE13  | 470   | 3.27  | 0.85 | 1.00  | 5.00 |
| S5IQSCORE13  | 563   | 3.25  | 0.78 | 1.00  | 5.00 |

|              |       |       |      |       |      |
|--------------|-------|-------|------|-------|------|
| R1FIQSCORE13 | 15186 | -0.93 | 0.26 | -1.00 | 1.00 |
| R2FIQSCORE13 | 13704 | -0.91 | 0.29 | -1.00 | 1.00 |
| R3FIQSCORE13 | 15723 | -0.92 | 0.28 | -1.00 | 1.00 |
| R4FIQSCORE13 | 14779 | -0.94 | 0.25 | -1.00 | 1.00 |
| R5FIQSCORE13 | 17114 | -0.92 | 0.27 | -1.00 | 1.00 |
| S1FIQSCORE13 | 10648 | -0.94 | 0.25 | -1.00 | 1.00 |
| S2FIQSCORE13 | 9564  | -0.91 | 0.29 | -1.00 | 1.00 |
| S3FIQSCORE13 | 10592 | -0.93 | 0.26 | -1.00 | 1.00 |
| S4FIQSCORE13 | 9652  | -0.95 | 0.22 | -1.00 | 1.00 |
| S5FIQSCORE13 | 7638  | -0.93 | 0.27 | -1.00 | 1.00 |
| R1IQSCORE14  | 1032  | 3.19  | 0.66 | 1.00  | 5.00 |
| R2IQSCORE14  | 1178  | 3.15  | 0.60 | 1.00  | 5.00 |
| R3IQSCORE14  | 1275  | 3.38  | 0.82 | 1.00  | 5.00 |
| R4IQSCORE14  | 929   | 3.41  | 0.85 | 1.00  | 5.00 |
| R5IQSCORE14  | 1328  | 3.32  | 0.78 | 1.00  | 5.00 |
| S1IQSCORE14  | 660   | 3.10  | 0.58 | 1.00  | 5.00 |
| S2IQSCORE14  | 821   | 3.10  | 0.55 | 1.00  | 5.00 |
| S3IQSCORE14  | 726   | 3.23  | 0.73 | 1.00  | 5.00 |
| S4IQSCORE14  | 470   | 3.28  | 0.82 | 1.00  | 5.00 |
| S5IQSCORE14  | 563   | 3.27  | 0.73 | 1.00  | 5.00 |
| R1FIQSCORE14 | 15186 | -0.93 | 0.27 | -1.00 | 1.00 |
| R2FIQSCORE14 | 13704 | -0.91 | 0.30 | -1.00 | 1.00 |
| R3FIQSCORE14 | 15723 | -0.92 | 0.29 | -1.00 | 1.00 |
| R4FIQSCORE14 | 14779 | -0.93 | 0.26 | -1.00 | 1.00 |
| R5FIQSCORE14 | 17114 | -0.92 | 0.28 | -1.00 | 1.00 |
| S1FIQSCORE14 | 10648 | -0.93 | 0.26 | -1.00 | 1.00 |
| S2FIQSCORE14 | 9564  | -0.91 | 0.30 | -1.00 | 1.00 |
| S3FIQSCORE14 | 10592 | -0.93 | 0.27 | -1.00 | 1.00 |
| S4FIQSCORE14 | 9652  | -0.95 | 0.23 | -1.00 | 1.00 |
| S5FIQSCORE14 | 7638  | -0.92 | 0.27 | -1.00 | 1.00 |
| R1IQSCORE15  | 1032  | 3.18  | 0.65 | 1.00  | 5.00 |
| R2IQSCORE15  | 1178  | 3.17  | 0.60 | 1.00  | 5.00 |
| R3IQSCORE15  | 1275  | 3.36  | 0.84 | 1.00  | 5.00 |
| R4IQSCORE15  | 929   | 3.43  | 0.82 | 1.00  | 5.00 |
| R5IQSCORE15  | 1328  | 3.34  | 0.79 | 1.00  | 5.00 |
| S1IQSCORE15  | 660   | 3.08  | 0.59 | 1.00  | 5.00 |
| S2IQSCORE15  | 821   | 3.12  | 0.54 | 1.00  | 5.00 |
| S3IQSCORE15  | 726   | 3.20  | 0.73 | 1.00  | 5.00 |
| S4IQSCORE15  | 470   | 3.28  | 0.75 | 1.00  | 5.00 |
| S5IQSCORE15  | 563   | 3.31  | 0.74 | 1.00  | 5.00 |
| R1FIQSCORE15 | 15186 | -0.93 | 0.27 | -1.00 | 1.00 |
| R2FIQSCORE15 | 13704 | -0.91 | 0.29 | -1.00 | 1.00 |
| R3FIQSCORE15 | 15723 | -0.92 | 0.28 | -1.00 | 1.00 |
| R4FIQSCORE15 | 14779 | -0.94 | 0.25 | -1.00 | 1.00 |
| R5FIQSCORE15 | 17114 | -0.92 | 0.27 | -1.00 | 1.00 |
| S1FIQSCORE15 | 10648 | -0.94 | 0.25 | -1.00 | 1.00 |
| S2FIQSCORE15 | 9564  | -0.91 | 0.29 | -1.00 | 1.00 |
| S3FIQSCORE15 | 10592 | -0.93 | 0.26 | -1.00 | 1.00 |
| S4FIQSCORE15 | 9652  | -0.95 | 0.22 | -1.00 | 1.00 |
| S5FIQSCORE15 | 7638  | -0.93 | 0.27 | -1.00 | 1.00 |
| R1IQSCORE16  | 1032  | 3.13  | 0.59 | 1.00  | 5.00 |
| R2IQSCORE16  | 1178  | 3.13  | 0.57 | 1.00  | 5.00 |
| R3IQSCORE16  | 1275  | 3.28  | 0.77 | 1.00  | 5.00 |

|              |       |       |      |       |      |
|--------------|-------|-------|------|-------|------|
| R4IQSCORE16  | 929   | 3.36  | 0.81 | 1.00  | 5.00 |
| R5IQSCORE16  | 1328  | 3.27  | 0.74 | 1.00  | 5.00 |
| S1IQSCORE16  | 660   | 3.04  | 0.51 | 1.00  | 5.00 |
| S2IQSCORE16  | 821   | 3.08  | 0.53 | 1.00  | 5.00 |
| S3IQSCORE16  | 726   | 3.15  | 0.67 | 1.00  | 5.00 |
| S4IQSCORE16  | 470   | 3.22  | 0.73 | 1.00  | 5.00 |
| S5IQSCORE16  | 563   | 3.23  | 0.66 | 1.00  | 5.00 |
| R1FIQSCORE16 | 15186 | -0.93 | 0.26 | -1.00 | 1.00 |
| R2FIQSCORE16 | 13704 | -0.91 | 0.28 | -1.00 | 1.00 |
| R3FIQSCORE16 | 15723 | -0.92 | 0.27 | -1.00 | 1.00 |
| R4FIQSCORE16 | 14779 | -0.94 | 0.25 | -1.00 | 1.00 |
| R5FIQSCORE16 | 17114 | -0.92 | 0.27 | -1.00 | 1.00 |
| S1FIQSCORE16 | 10648 | -0.94 | 0.25 | -1.00 | 1.00 |
| S2FIQSCORE16 | 9564  | -0.91 | 0.28 | -1.00 | 1.00 |
| S3FIQSCORE16 | 10592 | -0.93 | 0.25 | -1.00 | 1.00 |
| S4FIQSCORE16 | 9652  | -0.95 | 0.22 | -1.00 | 1.00 |
| S5FIQSCORE16 | 7638  | -0.93 | 0.26 | -1.00 | 1.00 |
| R1JORMSCORE  | 1032  | 3.17  | 0.50 | 1.00  | 5.00 |
| R2JORMSCORE  | 1178  | 3.16  | 0.49 | 1.00  | 5.00 |
| R3JORMSCORE  | 1275  | 3.33  | 0.70 | 1.00  | 5.00 |
| R4JORMSCORE  | 929   | 3.40  | 0.68 | 1.00  | 5.00 |
| R5JORMSCORE  | 1328  | 3.31  | 0.63 | 1.00  | 5.00 |
| S1JORMSCORE  | 660   | 3.09  | 0.45 | 1.00  | 5.00 |
| S2JORMSCORE  | 821   | 3.11  | 0.45 | 1.00  | 5.00 |
| S3JORMSCORE  | 726   | 3.18  | 0.60 | 1.00  | 5.00 |
| S4JORMSCORE  | 470   | 3.26  | 0.63 | 1.00  | 5.00 |
| S5JORMSCORE  | 563   | 3.26  | 0.57 | 1.00  | 5.00 |

## Categorical Variable Codes

|                         |             |             |             |             |             |
|-------------------------|-------------|-------------|-------------|-------------|-------------|
| Value-----              | R1IQSCORE1  | R2IQSCORE1  | R3IQSCORE1  | R4IQSCORE1  | R5IQSCORE1  |
| .n:Non-proxy ivw        | 14154       | 12526       | 14448       | 13850       | 15786       |
| 1.Much improved         | 12          | 16          | 35          | 11          | 30          |
| 2.A bit improved        | 17          | 17          | 25          | 17          | 34          |
| 3.Not much change       | 850         | 991         | 871         | 623         | 940         |
| 4.A bit worse           | 95          | 103         | 200         | 166         | 211         |
| 5.Much worse            | 58          | 51          | 144         | 112         | 113         |
| Value-----              | S1IQSCORE1  | S2IQSCORE1  | S3IQSCORE1  | S4IQSCORE1  | S5IQSCORE1  |
| .n:Non-proxy ivw        | 9988        | 8743        | 9866        | 9182        | 7075        |
| .u:Unmar                | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                | 333         | 131         | 349         | 280         | 501         |
| 1.Much improved         | 10          | 12          | 26          | 9           | 7           |
| 2.A bit improved        | 9           | 13          | 13          | 12          | 12          |
| 3.Not much change       | 574         | 704         | 552         | 340         | 426         |
| 4.A bit worse           | 45          | 61          | 82          | 68          | 81          |
| 5.Much worse            | 22          | 31          | 53          | 41          | 37          |
| Value-----              | R1FIQSCORE1 | R2FIQSCORE1 | R3FIQSCORE1 | R4FIQSCORE1 | R5FIQSCORE1 |
| -1.Missing, not imputed | 14154       | 12526       | 14448       | 13850       | 15786       |
| 0.Not Imputed           | 1020        | 1167        | 1272        | 927         | 1307        |
| 1.Imputed               | 12          | 11          | 3           | 2           | 21          |
| Value-----              | S1FIQSCORE1 | S2FIQSCORE1 | S3FIQSCORE1 | S4FIQSCORE1 | S5FIQSCORE1 |
| .u:Unmar                | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                | 333         | 131         | 349         | 280         | 501         |
| -1.Missing, not imputed | 9988        | 8743        | 9866        | 9182        | 7075        |
| 0.Not Imputed           | 650         | 814         | 725         | 469         | 553         |
| 1.Imputed               | 10          | 7           | 1           | 1           | 10          |
| Value-----              | R1IQSCORE2  | R2IQSCORE2  | R3IQSCORE2  | R4IQSCORE2  | R5IQSCORE2  |
| .n:Non-proxy ivw        | 14154       | 12526       | 14448       | 13850       | 15786       |

|                         |  |             |             |             |             |             |
|-------------------------|--|-------------|-------------|-------------|-------------|-------------|
| 1.Much improved         |  | 14          | 14          | 32          | 12          | 31          |
| 2.A bit improved        |  | 17          | 19          | 18          | 10          | 34          |
| 3.Not much change       |  | 865         | 1005        | 943         | 663         | 976         |
| 4.A bit worse           |  | 86          | 96          | 160         | 136         | 182         |
| 5.Much worse            |  | 50          | 44          | 122         | 108         | 105         |
| Value-----              |  | S1IQSCORE2  | S2IQSCORE2  | S3IQSCORE2  | S4IQSCORE2  | S5IQSCORE2  |
| .n:Non-proxy ivw        |  | 9988        | 8743        | 9866        | 9182        | 7075        |
| .u:Unmar                |  | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                |  | 333         | 131         | 349         | 280         | 501         |
| 1.Much improved         |  | 11          | 10          | 21          | 7           | 11          |
| 2.A bit improved        |  | 14          | 14          | 9           | 5           | 10          |
| 3.Not much change       |  | 572         | 714         | 594         | 372         | 439         |
| 4.A bit worse           |  | 39          | 57          | 65          | 45          | 66          |
| 5.Much worse            |  | 24          | 26          | 37          | 41          | 37          |
| Value-----              |  | R1FIQSCORE2 | R2FIQSCORE2 | R3FIQSCORE2 | R4FIQSCORE2 | R5FIQSCORE2 |
| -1.Missing, not imputed |  | 14154       | 12526       | 14448       | 13850       | 15786       |
| 0.Not Imputed           |  | 1017        | 1167        | 1273        | 928         | 1319        |
| 1.Imputed               |  | 15          | 11          | 2           | 1           | 9           |
| Value-----              |  | S1FIQSCORE2 | S2FIQSCORE2 | S3FIQSCORE2 | S4FIQSCORE2 | S5FIQSCORE2 |
| .u:Unmar                |  | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                |  | 333         | 131         | 349         | 280         | 501         |
| -1.Missing, not imputed |  | 9988        | 8743        | 9866        | 9182        | 7075        |
| 0.Not Imputed           |  | 651         | 813         | 725         | 470         | 557         |
| 1.Imputed               |  | 9           | 8           | 1           |             | 6           |
| Value-----              |  | R1IQSCORE3  | R2IQSCORE3  | R3IQSCORE3  | R4IQSCORE3  | R5IQSCORE3  |
| .n:Non-proxy ivw        |  | 14154       | 12526       | 14448       | 13850       | 15786       |
| 1.Much improved         |  | 16          | 10          | 36          | 14          | 22          |
| 2.A bit improved        |  | 14          | 13          | 12          | 10          | 28          |
| 3.Not much change       |  | 862         | 987         | 908         | 643         | 966         |
| 4.A bit worse           |  | 93          | 116         | 185         | 143         | 194         |
| 5.Much worse            |  | 47          | 52          | 134         | 119         | 118         |
| Value-----              |  | S1IQSCORE3  | S2IQSCORE3  | S3IQSCORE3  | S4IQSCORE3  | S5IQSCORE3  |
| .n:Non-proxy ivw        |  | 9988        | 8743        | 9866        | 9182        | 7075        |
| .u:Unmar                |  | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                |  | 333         | 131         | 349         | 280         | 501         |
| 1.Much improved         |  | 15          | 6           | 24          | 7           | 8           |
| 2.A bit improved        |  | 11          | 8           | 5           | 8           | 12          |
| 3.Not much change       |  | 575         | 713         | 576         | 362         | 429         |
| 4.A bit worse           |  | 42          | 62          | 75          | 44          | 76          |
| 5.Much worse            |  | 17          | 32          | 46          | 49          | 38          |
| Value-----              |  | R1FIQSCORE3 | R2FIQSCORE3 | R3FIQSCORE3 | R4FIQSCORE3 | R5FIQSCORE3 |
| -1.Missing, not imputed |  | 14154       | 12526       | 14448       | 13850       | 15786       |
| 0.Not Imputed           |  | 1017        | 1168        | 1273        | 927         | 1319        |
| 1.Imputed               |  | 15          | 10          | 2           | 2           | 9           |
| Value-----              |  | S1FIQSCORE3 | S2FIQSCORE3 | S3FIQSCORE3 | S4FIQSCORE3 | S5FIQSCORE3 |
| .u:Unmar                |  | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                |  | 333         | 131         | 349         | 280         | 501         |
| -1.Missing, not imputed |  | 9988        | 8743        | 9866        | 9182        | 7075        |
| 0.Not Imputed           |  | 648         | 813         | 725         | 470         | 559         |
| 1.Imputed               |  | 12          | 8           | 1           |             | 4           |
| Value-----              |  | R1IQSCORE4  | R2IQSCORE4  | R3IQSCORE4  | R4IQSCORE4  | R5IQSCORE4  |
| .n:Non-proxy ivw        |  | 14154       | 12526       | 14448       | 13850       | 15786       |
| 1.Much improved         |  | 19          | 10          | 30          | 17          | 22          |
| 2.A bit improved        |  | 14          | 10          | 17          | 6           | 19          |
| 3.Not much change       |  | 857         | 1017        | 902         | 650         | 982         |
| 4.A bit worse           |  | 84          | 87          | 175         | 126         | 185         |
| 5.Much worse            |  | 58          | 54          | 151         | 130         | 120         |
| Value-----              |  | S1IQSCORE4  | S2IQSCORE4  | S3IQSCORE4  | S4IQSCORE4  | S5IQSCORE4  |
| .n:Non-proxy ivw        |  | 9988        | 8743        | 9866        | 9182        | 7075        |
| .u:Unmar                |  | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                |  | 333         | 131         | 349         | 280         | 501         |
| 1.Much improved         |  | 17          | 7           | 20          | 12          | 6           |
| 2.A bit improved        |  | 8           | 7           | 11          | 3           | 5           |
| 3.Not much change       |  | 574         | 737         | 589         | 372         | 443         |

|                         |             |             |             |             |             |
|-------------------------|-------------|-------------|-------------|-------------|-------------|
| 4.A bit worse           | 37          | 42          | 54          | 42          | 65          |
| 5.Much worse            | 24          | 28          | 52          | 41          | 44          |
| Value-----              | R1FIQSCORE4 | R2FIQSCORE4 | R3FIQSCORE4 | R4FIQSCORE4 | R5FIQSCORE4 |
| -1.Missing, not imputed | 14154       | 12526       | 14448       | 13850       | 15786       |
| 0.Not Imputed           | 1018        | 1161        | 1270        | 921         | 1312        |
| 1.Imputed               | 14          | 17          | 5           | 8           | 16          |
| Value-----              | S1FIQSCORE4 | S2FIQSCORE4 | S3FIQSCORE4 | S4FIQSCORE4 | S5FIQSCORE4 |
| .u:Unmar                | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                | 333         | 131         | 349         | 280         | 501         |
| -1.Missing, not imputed | 9988        | 8743        | 9866        | 9182        | 7075        |
| 0.Not Imputed           | 651         | 813         | 723         | 465         | 557         |
| 1.Imputed               | 9           | 8           | 3           | 5           | 6           |
| Value-----              | R1IQSCORE5  | R2IQSCORE5  | R3IQSCORE5  | R4IQSCORE5  | R5IQSCORE5  |
| .n:Non-proxy ivw        | 14154       | 12526       | 14448       | 13850       | 15786       |
| 1.Much improved         | 14          | 14          | 37          | 16          | 19          |
| 2.A bit improved        | 11          | 14          | 14          | 9           | 17          |
| 3.Not much change       | 864         | 975         | 890         | 617         | 946         |
| 4.A bit worse           | 83          | 113         | 166         | 147         | 200         |
| 5.Much worse            | 60          | 62          | 168         | 140         | 146         |
| Value-----              | S1IQSCORE5  | S2IQSCORE5  | S3IQSCORE5  | S4IQSCORE5  | S5IQSCORE5  |
| .n:Non-proxy ivw        | 9988        | 8743        | 9866        | 9182        | 7075        |
| .u:Unmar                | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                | 333         | 131         | 349         | 280         | 501         |
| 1.Much improved         | 12          | 11          | 23          | 10          | 9           |
| 2.A bit improved        | 7           | 10          | 4           | 4           | 4           |
| 3.Not much change       | 581         | 709         | 581         | 359         | 427         |
| 4.A bit worse           | 38          | 54          | 63          | 46          | 75          |
| 5.Much worse            | 22          | 37          | 55          | 51          | 48          |
| Value-----              | R1FIQSCORE5 | R2FIQSCORE5 | R3FIQSCORE5 | R4FIQSCORE5 | R5FIQSCORE5 |
| -1.Missing, not imputed | 14154       | 12526       | 14448       | 13850       | 15786       |
| 0.Not Imputed           | 1020        | 1168        | 1269        | 926         | 1314        |
| 1.Imputed               | 12          | 10          | 6           | 3           | 14          |
| Value-----              | S1FIQSCORE5 | S2FIQSCORE5 | S3FIQSCORE5 | S4FIQSCORE5 | S5FIQSCORE5 |
| .u:Unmar                | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                | 333         | 131         | 349         | 280         | 501         |
| -1.Missing, not imputed | 9988        | 8743        | 9866        | 9182        | 7075        |
| 0.Not Imputed           | 653         | 814         | 724         | 468         | 556         |
| 1.Imputed               | 7           | 7           | 2           | 2           | 7           |
| Value-----              | R1IQSCORE6  | R2IQSCORE6  | R3IQSCORE6  | R4IQSCORE6  | R5IQSCORE6  |
| .n:Non-proxy ivw        | 14154       | 12526       | 14448       | 13850       | 15786       |
| 1.Much improved         | 13          | 10          | 30          | 17          | 14          |
| 2.A bit improved        | 6           | 15          | 7           | 10          | 14          |
| 3.Not much change       | 816         | 927         | 884         | 582         | 913         |
| 4.A bit worse           | 137         | 160         | 201         | 192         | 250         |
| 5.Much worse            | 60          | 66          | 153         | 128         | 137         |
| Value-----              | S1IQSCORE6  | S2IQSCORE6  | S3IQSCORE6  | S4IQSCORE6  | S5IQSCORE6  |
| .n:Non-proxy ivw        | 9988        | 8743        | 9866        | 9182        | 7075        |
| .u:Unmar                | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                | 333         | 131         | 349         | 280         | 501         |
| 1.Much improved         | 13          | 9           | 20          | 13          | 4           |
| 2.A bit improved        | 2           | 8           | 2           | 6           | 4           |
| 3.Not much change       | 549         | 668         | 560         | 329         | 405         |
| 4.A bit worse           | 70          | 99          | 87          | 76          | 102         |
| 5.Much worse            | 26          | 37          | 57          | 46          | 48          |
| Value-----              | R1FIQSCORE6 | R2FIQSCORE6 | R3FIQSCORE6 | R4FIQSCORE6 | R5FIQSCORE6 |
| -1.Missing, not imputed | 14154       | 12526       | 14448       | 13850       | 15786       |
| 0.Not Imputed           | 1019        | 1170        | 1272        | 923         | 1318        |
| 1.Imputed               | 13          | 8           | 3           | 6           | 10          |
| Value-----              | S1FIQSCORE6 | S2FIQSCORE6 | S3FIQSCORE6 | S4FIQSCORE6 | S5FIQSCORE6 |
| .u:Unmar                | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                | 333         | 131         | 349         | 280         | 501         |
| -1.Missing, not imputed | 9988        | 8743        | 9866        | 9182        | 7075        |
| 0.Not Imputed           | 651         | 814         | 725         | 466         | 558         |

|                         |             |             |             |             |             |
|-------------------------|-------------|-------------|-------------|-------------|-------------|
| 1.Imputed               | 9           | 7           | 1           | 4           | 5           |
| Value-----              | R1IQSCORE7  | R2IQSCORE7  | R3IQSCORE7  | R4IQSCORE7  | R5IQSCORE7  |
| .n:Non-proxy ivw        | 14154       | 12526       | 14448       | 13850       | 15786       |
| 1.Much improved         | 10          | 7           | 26          | 16          | 17          |
| 2.A bit improved        | 5           | 9           | 12          | 6           | 11          |
| 3.Not much change       | 799         | 921         | 882         | 566         | 898         |
| 4.A bit worse           | 149         | 171         | 193         | 200         | 259         |
| 5.Much worse            | 69          | 70          | 162         | 141         | 143         |
| Value-----              | S1IQSCORE7  | S2IQSCORE7  | S3IQSCORE7  | S4IQSCORE7  | S5IQSCORE7  |
| .n:Non-proxy ivw        | 9988        | 8743        | 9866        | 9182        | 7075        |
| .u:Unmar                | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                | 333         | 131         | 349         | 280         | 501         |
| 1.Much improved         | 10          | 6           | 16          | 11          | 6           |
| 2.A bit improved        | 2           | 6           | 5           | 3           | 3           |
| 3.Not much change       | 544         | 662         | 565         | 321         | 403         |
| 4.A bit worse           | 74          | 110         | 82          | 83          | 101         |
| 5.Much worse            | 30          | 37          | 58          | 52          | 50          |
| Value-----              | R1FIQSCORE7 | R2FIQSCORE7 | R3FIQSCORE7 | R4FIQSCORE7 | R5FIQSCORE7 |
| -1.Missing, not imputed | 14154       | 12526       | 14448       | 13850       | 15786       |
| 0.Not Imputed           | 1013        | 1168        | 1270        | 923         | 1316        |
| 1.Imputed               | 19          | 10          | 5           | 6           | 12          |
| Value-----              | S1FIQSCORE7 | S2FIQSCORE7 | S3FIQSCORE7 | S4FIQSCORE7 | S5FIQSCORE7 |
| .u:Unmar                | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                | 333         | 131         | 349         | 280         | 501         |
| -1.Missing, not imputed | 9988        | 8743        | 9866        | 9182        | 7075        |
| 0.Not Imputed           | 647         | 815         | 723         | 468         | 555         |
| 1.Imputed               | 13          | 6           | 3           | 2           | 8           |
| Value-----              | R1IQSCORE8  | R2IQSCORE8  | R3IQSCORE8  | R4IQSCORE8  | R5IQSCORE8  |
| .n:Non-proxy ivw        | 14154       | 12526       | 14448       | 13850       | 15786       |
| 1.Much improved         | 14          | 8           | 27          | 11          | 18          |
| 2.A bit improved        | 11          | 21          | 6           | 7           | 18          |
| 3.Not much change       | 860         | 993         | 900         | 648         | 987         |
| 4.A bit worse           | 70          | 88          | 159         | 119         | 157         |
| 5.Much worse            | 77          | 68          | 183         | 144         | 148         |
| Value-----              | S1IQSCORE8  | S2IQSCORE8  | S3IQSCORE8  | S4IQSCORE8  | S5IQSCORE8  |
| .n:Non-proxy ivw        | 9988        | 8743        | 9866        | 9182        | 7075        |
| .u:Unmar                | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                | 333         | 131         | 349         | 280         | 501         |
| 1.Much improved         | 13          | 7           | 16          | 6           | 6           |
| 2.A bit improved        | 7           | 15          | 2           | 4           | 3           |
| 3.Not much change       | 578         | 718         | 589         | 369         | 449         |
| 4.A bit worse           | 30          | 47          | 62          | 42          | 49          |
| 5.Much worse            | 32          | 34          | 57          | 49          | 56          |
| Value-----              | R1FIQSCORE8 | R2FIQSCORE8 | R3FIQSCORE8 | R4FIQSCORE8 | R5FIQSCORE8 |
| -1.Missing, not imputed | 14154       | 12526       | 14448       | 13850       | 15786       |
| 0.Not Imputed           | 997         | 1144        | 1255        | 912         | 1298        |
| 1.Imputed               | 35          | 34          | 20          | 17          | 30          |
| Value-----              | S1FIQSCORE8 | S2FIQSCORE8 | S3FIQSCORE8 | S4FIQSCORE8 | S5FIQSCORE8 |
| .u:Unmar                | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR                | 333         | 131         | 349         | 280         | 501         |
| -1.Missing, not imputed | 9988        | 8743        | 9866        | 9182        | 7075        |
| 0.Not Imputed           | 642         | 798         | 716         | 460         | 549         |
| 1.Imputed               | 18          | 23          | 10          | 10          | 14          |
| Value-----              | R1IQSCORE9  | R2IQSCORE9  | R3IQSCORE9  | R4IQSCORE9  | R5IQSCORE9  |
| .n:Non-proxy ivw        | 14154       | 12526       | 14448       | 13850       | 15786       |
| 1.Much improved         | 17          | 14          | 30          | 13          | 30          |
| 2.A bit improved        | 12          | 30          | 9           | 24          | 40          |
| 3.Not much change       | 819         | 952         | 831         | 576         | 858         |
| 4.A bit worse           | 92          | 99          | 202         | 163         | 218         |
| 5.Much worse            | 92          | 83          | 203         | 153         | 182         |
| Value-----              | S1IQSCORE9  | S2IQSCORE9  | S3IQSCORE9  | S4IQSCORE9  | S5IQSCORE9  |
| .n:Non-proxy ivw        | 9988        | 8743        | 9866        | 9182        | 7075        |
| .u:Unmar                | 4205        | 4009        | 4782        | 4847        | 5227        |

|                         |  |              |              |              |              |              |
|-------------------------|--|--------------|--------------|--------------|--------------|--------------|
| .v:SP NR                |  | 333          | 131          | 349          | 280          | 501          |
| 1.Much improved         |  | 16           | 9            | 20           | 10           | 8            |
| 2.A bit improved        |  | 7            | 25           | 8            | 13           | 12           |
| 3.Not much change       |  | 557          | 697          | 559          | 332          | 404          |
| 4.A bit worse           |  | 42           | 49           | 74           | 59           | 82           |
| 5.Much worse            |  | 38           | 41           | 65           | 56           | 57           |
| Value-----              |  | R1FIQSCORE9  | R2FIQSCORE9  | R3FIQSCORE9  | R4FIQSCORE9  | R5FIQSCORE9  |
| -1.Missing, not imputed |  | 14154        | 12526        | 14448        | 13850        | 15786        |
| 0.Not Imputed           |  | 986          | 1131         | 1244         | 903          | 1294         |
| 1.Imputed               |  | 46           | 47           | 31           | 26           | 34           |
| Value-----              |  | S1FIQSCORE9  | S2FIQSCORE9  | S3FIQSCORE9  | S4FIQSCORE9  | S5FIQSCORE9  |
| .u:Unmar                |  | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR                |  | 333          | 131          | 349          | 280          | 501          |
| -1.Missing, not imputed |  | 9988         | 8743         | 9866         | 9182         | 7075         |
| 0.Not Imputed           |  | 634          | 794          | 711          | 456          | 549          |
| 1.Imputed               |  | 26           | 27           | 15           | 14           | 14           |
| Value-----              |  | R1IQSCORE10  | R2IQSCORE10  | R3IQSCORE10  | R4IQSCORE10  | R5IQSCORE10  |
| .n:Non-proxy ivw        |  | 14154        | 12526        | 14448        | 13850        | 15786        |
| 1.Much improved         |  | 20           | 17           | 35           | 18           | 35           |
| 2.A bit improved        |  | 28           | 36           | 13           | 29           | 37           |
| 3.Not much change       |  | 825          | 949          | 841          | 568          | 868          |
| 4.A bit worse           |  | 80           | 108          | 193          | 162          | 222          |
| 5.Much worse            |  | 79           | 68           | 193          | 152          | 166          |
| Value-----              |  | S1IQSCORE10  | S2IQSCORE10  | S3IQSCORE10  | S4IQSCORE10  | S5IQSCORE10  |
| .n:Non-proxy ivw        |  | 9988         | 8743         | 9866         | 9182         | 7075         |
| .u:Unmar                |  | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR                |  | 333          | 131          | 349          | 280          | 501          |
| 1.Much improved         |  | 17           | 13           | 23           | 11           | 9            |
| 2.A bit improved        |  | 20           | 26           | 10           | 19           | 12           |
| 3.Not much change       |  | 557          | 691          | 558          | 317          | 390          |
| 4.A bit worse           |  | 33           | 55           | 67           | 72           | 97           |
| 5.Much worse            |  | 33           | 36           | 68           | 51           | 55           |
| Value-----              |  | R1FIQSCORE10 | R2FIQSCORE10 | R3FIQSCORE10 | R4FIQSCORE10 | R5FIQSCORE10 |
| -1.Missing, not imputed |  | 14154        | 12526        | 14448        | 13850        | 15786        |
| 0.Not Imputed           |  | 1005         | 1161         | 1256         | 913          | 1309         |
| 1.Imputed               |  | 27           | 17           | 19           | 16           | 19           |
| Value-----              |  | S1FIQSCORE10 | S2FIQSCORE10 | S3FIQSCORE10 | S4FIQSCORE10 | S5FIQSCORE10 |
| .u:Unmar                |  | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR                |  | 333          | 131          | 349          | 280          | 501          |
| -1.Missing, not imputed |  | 9988         | 8743         | 9866         | 9182         | 7075         |
| 0.Not Imputed           |  | 646          | 810          | 716          | 464          | 555          |
| 1.Imputed               |  | 14           | 11           | 10           | 6            | 8            |
| Value-----              |  | R1IQSCORE11  | R2IQSCORE11  | R3IQSCORE11  | R4IQSCORE11  | R5IQSCORE11  |
| .n:Non-proxy ivw        |  | 14154        | 12526        | 14448        | 13850        | 15786        |
| 1.Much improved         |  | 15           | 19           | 32           | 23           | 29           |
| 2.A bit improved        |  | 11           | 23           | 18           | 11           | 26           |
| 3.Not much change       |  | 865          | 992          | 928          | 646          | 979          |
| 4.A bit worse           |  | 80           | 86           | 145          | 109          | 140          |
| 5.Much worse            |  | 61           | 58           | 152          | 140          | 154          |
| Value-----              |  | S1IQSCORE11  | S2IQSCORE11  | S3IQSCORE11  | S4IQSCORE11  | S5IQSCORE11  |
| .n:Non-proxy ivw        |  | 9988         | 8743         | 9866         | 9182         | 7075         |
| .u:Unmar                |  | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR                |  | 333          | 131          | 349          | 280          | 501          |
| 1.Much improved         |  | 14           | 16           | 19           | 16           | 9            |
| 2.A bit improved        |  | 7            | 18           | 8            | 7            | 11           |
| 3.Not much change       |  | 583          | 714          | 595          | 358          | 432          |
| 4.A bit worse           |  | 29           | 41           | 59           | 37           | 56           |
| 5.Much worse            |  | 27           | 32           | 45           | 52           | 55           |
| Value-----              |  | R1FIQSCORE11 | R2FIQSCORE11 | R3FIQSCORE11 | R4FIQSCORE11 | R5FIQSCORE11 |
| -1.Missing, not imputed |  | 14154        | 12526        | 14448        | 13850        | 15786        |
| 0.Not Imputed           |  | 1004         | 1155         | 1261         | 910          | 1307         |
| 1.Imputed               |  | 28           | 23           | 14           | 19           | 21           |
| Value-----              |  | S1FIQSCORE11 | S2FIQSCORE11 | S3FIQSCORE11 | S4FIQSCORE11 | S5FIQSCORE11 |

|                         |  |              |              |              |              |              |
|-------------------------|--|--------------|--------------|--------------|--------------|--------------|
| .u:Unmar                |  | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR                |  | 333          | 131          | 349          | 280          | 501          |
| -1.Missing, not imputed |  | 9988         | 8743         | 9866         | 9182         | 7075         |
| 0.Not Imputed           |  | 643          | 807          | 718          | 462          | 554          |
| 1.Imputed               |  | 17           | 14           | 8            | 8            | 9            |
| Value-----              |  | R1IQSCORE12  | R2IQSCORE12  | R3IQSCORE12  | R4IQSCORE12  | R5IQSCORE12  |
| .n:Non-proxy ivw        |  | 14154        | 12526        | 14448        | 13850        | 15786        |
| 1.Much improved         |  | 15           | 13           | 30           | 21           | 31           |
| 2.A bit improved        |  | 16           | 16           | 10           | 16           | 21           |
| 3.Not much change       |  | 868          | 1015         | 966          | 657          | 974          |
| 4.A bit worse           |  | 65           | 70           | 120          | 98           | 146          |
| 5.Much worse            |  | 68           | 64           | 149          | 137          | 156          |
| Value-----              |  | S1IQSCORE12  | S2IQSCORE12  | S3IQSCORE12  | S4IQSCORE12  | S5IQSCORE12  |
| .n:Non-proxy ivw        |  | 9988         | 8743         | 9866         | 9182         | 7075         |
| .u:Unmar                |  | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR                |  | 333          | 131          | 349          | 280          | 501          |
| 1.Much improved         |  | 12           | 8            | 17           | 14           | 12           |
| 2.A bit improved        |  | 10           | 11           | 2            | 12           | 6            |
| 3.Not much change       |  | 586          | 738          | 609          | 371          | 433          |
| 4.A bit worse           |  | 20           | 32           | 45           | 29           | 58           |
| 5.Much worse            |  | 32           | 32           | 53           | 44           | 54           |
| Value-----              |  | R1FIQSCORE12 | R2FIQSCORE12 | R3FIQSCORE12 | R4FIQSCORE12 | R5FIQSCORE12 |
| -1.Missing, not imputed |  | 14154        | 12526        | 14448        | 13850        | 15786        |
| 0.Not Imputed           |  | 1002         | 1165         | 1269         | 923          | 1317         |
| 1.Imputed               |  | 30           | 13           | 6            | 6            | 11           |
| Value-----              |  | S1FIQSCORE12 | S2FIQSCORE12 | S3FIQSCORE12 | S4FIQSCORE12 | S5FIQSCORE12 |
| .u:Unmar                |  | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR                |  | 333          | 131          | 349          | 280          | 501          |
| -1.Missing, not imputed |  | 9988         | 8743         | 9866         | 9182         | 7075         |
| 0.Not Imputed           |  | 641          | 812          | 723          | 466          | 558          |
| 1.Imputed               |  | 19           | 9            | 3            | 4            | 5            |
| Value-----              |  | R1IQSCORE13  | R2IQSCORE13  | R3IQSCORE13  | R4IQSCORE13  | R5IQSCORE13  |
| .n:Non-proxy ivw        |  | 14154        | 12526        | 14448        | 13850        | 15786        |
| 1.Much improved         |  | 19           | 25           | 35           | 21           | 30           |
| 2.A bit improved        |  | 11           | 23           | 11           | 16           | 29           |
| 3.Not much change       |  | 846          | 982          | 904          | 595          | 938          |
| 4.A bit worse           |  | 72           | 76           | 130          | 124          | 169          |
| 5.Much worse            |  | 84           | 72           | 195          | 173          | 162          |
| Value-----              |  | S1IQSCORE13  | S2IQSCORE13  | S3IQSCORE13  | S4IQSCORE13  | S5IQSCORE13  |
| .n:Non-proxy ivw        |  | 9988         | 8743         | 9866         | 9182         | 7075         |
| .u:Unmar                |  | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR                |  | 333          | 131          | 349          | 280          | 501          |
| 1.Much improved         |  | 18           | 17           | 23           | 17           | 15           |
| 2.A bit improved        |  | 5            | 18           | 6            | 9            | 11           |
| 3.Not much change       |  | 575          | 711          | 578          | 334          | 414          |
| 4.A bit worse           |  | 28           | 35           | 50           | 48           | 63           |
| 5.Much worse            |  | 34           | 40           | 69           | 62           | 60           |
| Value-----              |  | R1FIQSCORE13 | R2FIQSCORE13 | R3FIQSCORE13 | R4FIQSCORE13 | R5FIQSCORE13 |
| -1.Missing, not imputed |  | 14154        | 12526        | 14448        | 13850        | 15786        |
| 0.Not Imputed           |  | 999          | 1161         | 1261         | 920          | 1312         |
| 1.Imputed               |  | 33           | 17           | 14           | 9            | 16           |
| Value-----              |  | S1FIQSCORE13 | S2FIQSCORE13 | S3FIQSCORE13 | S4FIQSCORE13 | S5FIQSCORE13 |
| .u:Unmar                |  | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR                |  | 333          | 131          | 349          | 280          | 501          |
| -1.Missing, not imputed |  | 9988         | 8743         | 9866         | 9182         | 7075         |
| 0.Not Imputed           |  | 638          | 811          | 716          | 467          | 555          |
| 1.Imputed               |  | 22           | 10           | 10           | 3            | 8            |
| Value-----              |  | R1IQSCORE14  | R2IQSCORE14  | R3IQSCORE14  | R4IQSCORE14  | R5IQSCORE14  |
| .n:Non-proxy ivw        |  | 14154        | 12526        | 14448        | 13850        | 15786        |
| 1.Much improved         |  | 16           | 14           | 25           | 15           | 22           |
| 2.A bit improved        |  | 12           | 16           | 11           | 16           | 24           |
| 3.Not much change       |  | 846          | 996          | 891          | 629          | 957          |
| 4.A bit worse           |  | 72           | 78           | 151          | 110          | 160          |
| 5.Much worse            |  | 86           | 74           | 197          | 159          | 165          |



|                         |              |              |              |              |              |
|-------------------------|--------------|--------------|--------------|--------------|--------------|
| Value-----              | S1IQSCORE14  | S2IQSCORE14  | S3IQSCORE14  | S4IQSCORE14  | S5IQSCORE14  |
| .n:Non-proxy ivw        | 9988         | 8743         | 9866         | 9182         | 7075         |
| .u:Unmar                | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR                | 333          | 131          | 349          | 280          | 501          |
| 1.Much improved         | 13           | 11           | 16           | 12           | 9            |
| 2.A bit improved        | 7            | 12           | 6            | 10           | 7            |
| 3.Not much change       | 577          | 721          | 572          | 346          | 429          |
| 4.A bit worse           | 27           | 35           | 58           | 38           | 57           |
| 5.Much worse            | 36           | 42           | 74           | 64           | 61           |
| Value-----              | R1FIQSCORE14 | R2FIQSCORE14 | R3FIQSCORE14 | R4FIQSCORE14 | R5FIQSCORE14 |
| -1.Missing, not imputed | 14154        | 12526        | 14448        | 13850        | 15786        |
| 0.Not Imputed           | 973          | 1116         | 1227         | 888          | 1300         |
| 1.Imputed               | 59           | 62           | 48           | 41           | 28           |
| Value-----              | S1FIQSCORE14 | S2FIQSCORE14 | S3FIQSCORE14 | S4FIQSCORE14 | S5FIQSCORE14 |
| .u:Unmar                | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR                | 333          | 131          | 349          | 280          | 501          |
| -1.Missing, not imputed | 9988         | 8743         | 9866         | 9182         | 7075         |
| 0.Not Imputed           | 619          | 775          | 699          | 447          | 552          |
| 1.Imputed               | 41           | 46           | 27           | 23           | 11           |
| Value-----              | R1IQSCORE15  | R2IQSCORE15  | R3IQSCORE15  | R4IQSCORE15  | R5IQSCORE15  |
| .n:Non-proxy ivw        | 14154        | 12526        | 14448        | 13850        | 15786        |
| 1.Much improved         | 16           | 15           | 33           | 12           | 23           |
| 2.A bit improved        | 17           | 9            | 7            | 9            | 23           |
| 3.Not much change       | 841          | 993          | 893          | 627          | 940          |
| 4.A bit worse           | 81           | 86           | 150          | 127          | 165          |
| 5.Much worse            | 77           | 75           | 192          | 154          | 177          |
| Value-----              | S1IQSCORE15  | S2IQSCORE15  | S3IQSCORE15  | S4IQSCORE15  | S5IQSCORE15  |
| .n:Non-proxy ivw        | 9988         | 8743         | 9866         | 9182         | 7075         |
| .u:Unmar                | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR                | 333          | 131          | 349          | 280          | 501          |
| 1.Much improved         | 15           | 10           | 20           | 8            | 7            |
| 2.A bit improved        | 11           | 7            | 5            | 6            | 7            |
| 3.Not much change       | 571          | 721          | 577          | 360          | 417          |
| 4.A bit worse           | 30           | 42           | 55           | 40           | 67           |
| 5.Much worse            | 33           | 41           | 69           | 56           | 65           |
| Value-----              | R1FIQSCORE15 | R2FIQSCORE15 | R3FIQSCORE15 | R4FIQSCORE15 | R5FIQSCORE15 |
| -1.Missing, not imputed | 14154        | 12526        | 14448        | 13850        | 15786        |
| 0.Not Imputed           | 995          | 1156         | 1255         | 910          | 1309         |
| 1.Imputed               | 37           | 22           | 20           | 19           | 19           |
| Value-----              | S1FIQSCORE15 | S2FIQSCORE15 | S3FIQSCORE15 | S4FIQSCORE15 | S5FIQSCORE15 |
| .u:Unmar                | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR                | 333          | 131          | 349          | 280          | 501          |
| -1.Missing, not imputed | 9988         | 8743         | 9866         | 9182         | 7075         |
| 0.Not Imputed           | 637          | 807          | 716          | 461          | 556          |
| 1.Imputed               | 23           | 14           | 10           | 9            | 7            |
| Value-----              | R1IQSCORE16  | R2IQSCORE16  | R3IQSCORE16  | R4IQSCORE16  | R5IQSCORE16  |
| .n:Non-proxy ivw        | 14154        | 12526        | 14448        | 13850        | 15786        |
| 1.Much improved         | 16           | 20           | 31           | 13           | 21           |
| 2.A bit improved        | 13           | 10           | 11           | 20           | 30           |
| 3.Not much change       | 877          | 1006         | 954          | 651          | 984          |
| 4.A bit worse           | 69           | 86           | 132          | 110          | 153          |
| 5.Much worse            | 57           | 56           | 147          | 135          | 140          |
| Value-----              | S1IQSCORE16  | S2IQSCORE16  | S3IQSCORE16  | S4IQSCORE16  | S5IQSCORE16  |
| .n:Non-proxy ivw        | 9988         | 8743         | 9866         | 9182         | 7075         |
| .u:Unmar                | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR                | 333          | 131          | 349          | 280          | 501          |
| 1.Much improved         | 14           | 14           | 19           | 9            | 6            |
| 2.A bit improved        | 10           | 8            | 5            | 10           | 8            |
| 3.Not much change       | 593          | 727          | 602          | 367          | 445          |
| 4.A bit worse           | 21           | 40           | 47           | 37           | 58           |
| 5.Much worse            | 22           | 32           | 53           | 47           | 46           |
| Value-----              | R1FIQSCORE16 | R2FIQSCORE16 | R3FIQSCORE16 | R4FIQSCORE16 | R5FIQSCORE16 |
| -1.Missing, not imputed | 14154        | 12526        | 14448        | 13850        | 15786        |

|                         |  |              |              |              |              |              |
|-------------------------|--|--------------|--------------|--------------|--------------|--------------|
| 0.Not Imputed           |  | 1017         | 1171         | 1269         | 923          | 1317         |
| 1.Imputed               |  | 15           | 7            | 6            | 6            | 11           |
| Value-----              |  | S1FIQSCORE16 | S2FIQSCORE16 | S3FIQSCORE16 | S4FIQSCORE16 | S5FIQSCORE16 |
| .u:Unmar                |  | 4205         | 4009         | 4782         | 4847         | 5227         |
| .v:SP NR                |  | 333          | 131          | 349          | 280          | 501          |
| -1.Missing, not imputed |  | 9988         | 8743         | 9866         | 9182         | 7075         |
| 0.Not Imputed           |  | 651          | 817          | 722          | 466          | 558          |
| 1.Imputed               |  | 9            | 4            | 4            | 4            | 5            |

## How Constructed

The following variables pertain to a series of questions that asked the proxy whether the respondent has improved, stayed the same, or gotten worse in various situations that require memory or intelligence. The interviewer emphasized the importance of comparing present performance with past performance and asked the proxy to compare the respondent's current ability with the respondent's ability 2 years ago.

In RwiQSCORE1, the informant compared the respondent's current ability to remember things about family and friends, such as occupations, birthdays, and addresses, with their ability in the past.

In RwiQSCORE2, the informant compared the respondent's current ability to remember things that have happened recently with their ability in the past.

In RwiQSCORE3, the informant compared the respondent's current ability to recall conversations a few days later with their ability in the past.

In RwiQSCORE4, the informant compared the respondent's current ability to remember their address and telephone number with their ability in the past.

In RwiQSCORE5, the informant compared the respondent's current ability to remember what day and month it is with their ability in the past.

In RwiQSCORE6, the informant compared the respondent's current ability to remember where things are usually kept with their ability in the past.

In RwiQSCORE7, the informant compared the respondent's current ability to remember where to find things that have been put in a different place than usual with their ability in the past.

In RwiQSCORE8, the informant compared the respondent's current ability to know how to work familiar machines around the house with their ability in the past.

In RwiQSCORE9, the informant compared the respondent's current ability to learn to use a new gadget or machine around the house with their ability in the past.

In RwiQSCORE10, the informant compared the respondent's current ability to learn new things in general with their ability in the past.

In RwiQSCORE11, the informant compared the respondent's current ability to follow a story in a book or on TV with their ability in the past.

In RwiQSCORE12, the informant compared the respondent's current ability to make decisions on everyday matters, like what to cook or to wear, with their ability in the past.

In RwiQSCORE13, the informant compared the respondent's current ability to handle money for shopping with their ability in the past.

In RwiQSCORE14, the informant compared the respondent's current ability to handle financial matters, such as pension or dealing with the bank, with their ability in the past.

In RwiQSCORE15, the informant compared the respondent's current ability to handle other everyday mathematical problems, such as knowing how much food to buy and knowing how much time elapsed between visits from family or friends, with their ability in the past.

In RwiQSCORE16, the informant compared the respondent's current ability to use their intelligence to understand what's going on and to reason things through with their ability in the past.

RwIQSCORE1 - RwIQSCORE16 are coded as follows: 1.Much improved, 2.A bit improved, 3.Not much changed, 4.A bit worse, and 5.Much worse. They are constructed using the imputed proxy cognition variables provided by MHAS. Using the method of sequence of regressions with a SAS based Imputation and Variance Estimation software (IVEware), the MHAS team completed the imputation of cognitive variables. Unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the MHAS document [\(here\)](#) titled "Imputation of Cognitive Function Variables in the Mexican Health and Aging Study 2001-2018, Version 1", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included. RwJORMSCORE indicates the average value of RwIQSCORE1 - RwIQSCORE16 and ranges from 0-5. RwJORMSCORE is calculated as long as at least one component is not missing. Special missing .n is assigned to non-proxy interviews. Other missing responses are assigned special missing .m. RwIQSCORE1 - RwIQSCORE16 and RwJORMSCORE are assigned plain missing (.) if the respondent did not participate in the current wave.

RwFIQSCORE1 - RwFIQSCORE16 are flag variables indicating whether any component of RwIQSCORE1 - RwIQSCORE16 was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section, including non-proxy interviews, and this value has been left missing. RwFIQSCORE1 - RwFIQSCORE16 are assigned plain missing (.) if the respondent did not participate in the current wave.

SwIQSCORE1 - SwIQSCORE16, SwJORMSCORE, and SwFIQSCORE1 - SwFIQSCORE16 are taken from the Wave 'w' spouse's values for RwIQSCORE1 - RwIQSCORE16, RwJORMSCORE, and RwFIQSCORE1 - RwFIQSCORE16, respectively. In addition to the special missing codes used in RwIQSCORE1 - RwIQSCORE16, RwJORMSCORE, and RwFIQSCORE1 - RwFIQSCORE16, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

The MHAS provides imputed versions of these variables, which has been used in their construction in the Harmonized MHAS. Because of this, flag variables have also been created for the Harmonized MHAS to indicate when the variable uses imputed information. The HRS does not provide imputations for these variables, and the Harmonized HRS provides these variables without imputation as well.

## MHAS Variables Used

Wave 1 Imputed Cognition:

|              |   |
|--------------|---|
| PC11_FLAG_01 | R's ability to recall conversations a few days later: F |
| PC11_IMP_01  | R's ability to recall conversations a few days later (I |
| PC14_FLAG_01 | R's ability to remember his/her address: Flag if Impute |
| PC14_IMP_01  | R's ability to remember his/her address (Imputed)       |
| PC17_FLAG_01 | R's ability to remember what day and month it is: Flag  |
| PC17_IMP_01  | R's ability to remember what day and month it is (Imput |
| PC20_FLAG_01 | R's ability to remember where things are usually kept:  |
| PC20_IMP_01  | R's ability to remember where things are usually kept ( |
| PC23_FLAG_01 | R's ability to remember where to find things put in a d |
| PC23_IMP_01  | R's ability to remember where to find things put in a d |
| PC26_FLAG_01 | R's ability to know how to use familiar machines: Flag  |
| PC26_IMP_01  | R's ability to know how to use familiar machines (Imput |
| PC29_FLAG_01 | R's ability to learn to use a new gadget or machine: Fl |
| PC29_IMP_01  | R's ability to learn to use a new gadget or machine (Im |
| PC32_FLAG_01 | R's ability to learn new things in general: Flag if Imp |
| PC32_IMP_01  | R's ability to learn new things in general (Imputed)    |
| PC35_FLAG_01 | R's ability to follow a story in a book or on TV: Flag  |
| PC35_IMP_01  | R's ability to follow a story in a book or on TV (Imput |
| PC38_FLAG_01 | R's ability to make decisions on everyday matters: Flag |
| PC38_IMP_01  | R's ability to make decisions on everyday matters (Impu |
| PC41_FLAG_01 | R's ability to handle money for shopping: Flag if Imput |

|              |   |
|--------------|---|
| PC41_IMP_01  | R's ability to handle money for shopping (Imputed)      |
| PC44_FLAG_01 | R's ability to handle financial matters: Flag if Impute |
| PC44_IMP_01  | R's ability to handle financial matters (Imputed)       |
| PC47_FLAG_01 | R's ability to handle other everyday arithmetic problem |
| PC47_IMP_01  | R's ability to handle other everyday arithmetic problem |
| PC50_FLAG_01 | R's ability to use his/her intelligence to understand w |
| PC50_IMP_01  | R's ability to use his/her intelligence to understand w |
| PC5_FLAG_01  | R's ability to remember things about family & friends:  |
| PC5_IMP_01   | R's ability to remember things about family & friends ( |
| PC8_FLAG_01  | R's ability to remember things: Flag if Imputed         |
| PC8_IMP_01   | R's ability to remember things (Imputed)                |

## Wave 2 Imputed Cognition:

|              |   |
|--------------|---|
| PC11_FLAG_03 | R's ability to recall conversations a few days later: F |
| PC11_IMP_03  | R's ability to recall conversations a few days later (I |
| PC14_FLAG_03 | R's ability to remember his/her address: Flag if Impute |
| PC14_IMP_03  | R's ability to remember his/her address (Imputed)       |
| PC17_FLAG_03 | R's ability to remember what day and month it is: Flag  |
| PC17_IMP_03  | R's ability to remember what day and month it is (Imput |
| PC20_FLAG_03 | R's ability to remember where things are usually kept:  |
| PC20_IMP_03  | R's ability to remember where things are usually kept ( |
| PC23_FLAG_03 | R's ability to remember where to find things put in a d |
| PC23_IMP_03  | R's ability to remember where to find things put in a d |
| PC26_FLAG_03 | R's ability to know how to use familiar machines: Flag  |
| PC26_IMP_03  | R's ability to know how to use familiar machines (Imput |
| PC29_FLAG_03 | R's ability to learn to use a new gadget or machine: Fl |
| PC29_IMP_03  | R's ability to learn to use a new gadget or machine (Im |
| PC32_FLAG_03 | R's ability to learn new things in general: Flag if Imp |
| PC32_IMP_03  | R's ability to learn new things in general (Imputed)    |
| PC35_FLAG_03 | R's ability to follow a story in a book or on TV: Flag  |
| PC35_IMP_03  | R's ability to follow a story in a book or on TV (Imput |
| PC38_FLAG_03 | R's ability to make decisions on everyday matters: Flag |
| PC38_IMP_03  | R's ability to make decisions on everyday matters (Impu |
| PC41_FLAG_03 | R's ability to handle money for shopping: Flag if Imput |
| PC41_IMP_03  | R's ability to handle money for shopping (Imputed)      |
| PC44_FLAG_03 | R's ability to handle financial matters: Flag if Impute |
| PC44_IMP_03  | R's ability to handle financial matters (Imputed)       |
| PC47_FLAG_03 | R's ability to handle other everyday arithmetic problem |
| PC47_IMP_03  | R's ability to handle other everyday arithmetic problem |
| PC50_FLAG_03 | R's ability to use his/her intelligence to understand w |
| PC50_IMP_03  | R's ability to use his/her intelligence to understand w |
| PC5_FLAG_03  | R's ability to remember things about family & friends:  |
| PC5_IMP_03   | R's ability to remember things about family & friends ( |
| PC8_FLAG_03  | R's ability to remember things: Flag if Imputed         |
| PC8_IMP_03   | R's ability to remember things (Imputed)                |

## Wave 3 Imputed Cognition:

|              |   |
|--------------|---|
| PC11_FLAG_12 | R's ability to recall conversations a few days later: F |
| PC11_IMP_12  | R's ability to recall conversations a few days later (I |
| PC14_FLAG_12 | R's ability to remember his/her address: Flag if Impute |
| PC14_IMP_12  | R's ability to remember his/her address (Imputed)       |
| PC17_FLAG_12 | R's ability to remember what day and month it is: Flag  |
| PC17_IMP_12  | R's ability to remember what day and month it is (Imput |
| PC20_FLAG_12 | R's ability to remember where things are usually kept:  |
| PC20_IMP_12  | R's ability to remember where things are usually kept ( |
| PC23_FLAG_12 | R's ability to remember where to find things put in a d |
| PC23_IMP_12  | R's ability to remember where to find things put in a d |
| PC26_FLAG_12 | R's ability to know how to use familiar machines: Flag  |
| PC26_IMP_12  | R's ability to know how to use familiar machines (Imput |
| PC29_FLAG_12 | R's ability to learn to use a new gadget or machine: Fl |
| PC29_IMP_12  | R's ability to learn to use a new gadget or machine (Im |
| PC32_FLAG_12 | R's ability to learn new things in general: Flag if Imp |
| PC32_IMP_12  | R's ability to learn new things in general (Imputed)    |
| PC35_FLAG_12 | R's ability to follow a story in a book or on TV: Flag  |
| PC35_IMP_12  | R's ability to follow a story in a book or on TV (Imput |
| PC38_FLAG_12 | R's ability to make decisions on everyday matters: Flag |

|              |   |
|--------------|---|
| PC38_IMP_12  | R's ability to make decisions on everyday matters (Impu |
| PC41_FLAG_12 | R's ability to handle money for shopping: Flag if Imput |
| PC41_IMP_12  | R's ability to handle money for shopping (Imputed)      |
| PC44_FLAG_12 | R's ability to handle financial matters: Flag if Impute |
| PC44_IMP_12  | R's ability to handle financial matters (Imputed)       |
| PC47_FLAG_12 | R's ability to handle other everyday arithmetic problem |
| PC47_IMP_12  | R's ability to handle other everyday arithmetic problem |
| PC50_FLAG_12 | R's ability to use his/her intelligence to understand w |
| PC50_IMP_12  | R's ability to use his/her intelligence to understand w |
| PC5_FLAG_12  | R's ability to remember things about family & friends:  |
| PC5_IMP_12   | R's ability to remember things about family & friends ( |
| PC8_FLAG_12  | R's ability to remember things: Flag if Imputed         |
| PC8_IMP_12   | R's ability to remember things (Imputed)                |

## Wave 4 Imputed Cognition:

|              |   |
|--------------|---|
| PC11_FLAG_15 | R's ability to recall conversations a few days later: F |
| PC11_IMP_15  | R's ability to recall conversations a few days later (I |
| PC14_FLAG_15 | R's ability to remember his/her address: Flag if Impute |
| PC14_IMP_15  | R's ability to remember his/her address (Imputed)       |
| PC17_FLAG_15 | R's ability to remember what day and month it is: Flag  |
| PC17_IMP_15  | R's ability to remember what day and month it is (Imput |
| PC20_FLAG_15 | R's ability to remember where things are usually kept:  |
| PC20_IMP_15  | R's ability to remember where things are usually kept ( |
| PC23_FLAG_15 | R's ability to remember where to find things put in a d |
| PC23_IMP_15  | R's ability to remember where to find things put in a d |
| PC26_FLAG_15 | R's ability to know how to use familiar machines: Flag  |
| PC26_IMP_15  | R's ability to know how to use familiar machines (Imput |
| PC29_FLAG_15 | R's ability to learn to use a new gadget or machine: Fl |
| PC29_IMP_15  | R's ability to learn to use a new gadget or machine (Im |
| PC32_FLAG_15 | R's ability to learn new things in general: Flag if Imp |
| PC32_IMP_15  | R's ability to learn new things in general (Imputed)    |
| PC35_FLAG_15 | R's ability to follow a story in a book or on TV: Flag  |
| PC35_IMP_15  | R's ability to follow a story in a book or on TV (Imput |
| PC38_FLAG_15 | R's ability to make decisions on everyday matters: Flag |
| PC38_IMP_15  | R's ability to make decisions on everyday matters (Impu |
| PC41_FLAG_15 | R's ability to handle money for shopping: Flag if Imput |
| PC41_IMP_15  | R's ability to handle money for shopping (Imputed)      |
| PC44_FLAG_15 | R's ability to handle financial matters: Flag if Impute |
| PC44_IMP_15  | R's ability to handle financial matters (Imputed)       |
| PC47_FLAG_15 | R's ability to handle other everyday arithmetic problem |
| PC47_IMP_15  | R's ability to handle other everyday arithmetic problem |
| PC50_FLAG_15 | R's ability to use his/her intelligence to understand w |
| PC50_IMP_15  | R's ability to use his/her intelligence to understand w |
| PC5_FLAG_15  | R's ability to remember things about family & friends:  |
| PC5_IMP_15   | R's ability to remember things about family & friends ( |
| PC8_FLAG_15  | R's ability to remember things: Flag if Imputed         |
| PC8_IMP_15   | R's ability to remember things (Imputed)                |

## Wave 5 Imputed Cognition:

|              |   |
|--------------|---|
| PC11_FLAG_18 | R's ability to recall conversations a few days later: F |
| PC11_IMP_18  | R's ability to recall conversations a few days later (I |
| PC14_FLAG_18 | R's ability to remember his/her address: Flag if Impute |
| PC14_IMP_18  | R's ability to remember his/her address (Imputed)       |
| PC17_FLAG_18 | R's ability to remember what day and month it is: Flag  |
| PC17_IMP_18  | R's ability to remember what day and month it is (Imput |
| PC20_FLAG_18 | R's ability to remember where things are usually kept:  |
| PC20_IMP_18  | R's ability to remember where things are usually kept ( |
| PC23_FLAG_18 | R's ability to remember where to find things put in a d |
| PC23_IMP_18  | R's ability to remember where to find things put in a d |
| PC26_FLAG_18 | R's ability to know how to use familiar machines: Flag  |
| PC26_IMP_18  | R's ability to know how to use familiar machines (Imput |
| PC29_FLAG_18 | R's ability to learn to use a new gadget or machine: Fl |
| PC29_IMP_18  | R's ability to learn to use a new gadget or machine (Im |
| PC32_FLAG_18 | R's ability to learn new things in general: Flag if Imp |
| PC32_IMP_18  | R's ability to learn new things in general (Imputed)    |
| PC35_FLAG_18 | R's ability to follow a story in a book or on TV: Flag  |

|              |   |
|--------------|---|
| PC35_IMP_18  | R's ability to follow a story in a book or on TV (Imput |
| PC38_FLAG_18 | R's ability to make decisions on everyday matters: Flag |
| PC38_IMP_18  | R's ability to make decisions on everyday matters (Impu |
| PC41_FLAG_18 | R's ability to handle money for shopping: Flag if Input |
| PC41_IMP_18  | R's ability to handle money for shopping (Imputed)      |
| PC44_FLAG_18 | R's ability to handle financial matters: Flag if Impute |
| PC44_IMP_18  | R's ability to handle financial matters (Imputed)       |
| PC47_FLAG_18 | R's ability to handle other everyday arithmetic problem |
| PC47_IMP_18  | R's ability to handle other everyday arithmetic problem |
| PC50_FLAG_18 | R's ability to use his/her intelligence to understand w |
| PC50_IMP_18  | R's ability to use his/her intelligence to understand w |
| PC5_FLAG_18  | R's ability to remember things about family & friends:  |
| PC5_IMP_18   | R's ability to remember things about family & friends ( |
| PC8_FLAG_18  | R's ability to remember things: Flag if Imputed         |
| PC8_IMP_18   | R's ability to remember things (Imputed)                |

|   |
|---|
| <b>Proxy Cognition: Ratings of Memory and Abilities</b> |
|---|

| Wave | Variable  | Label   | Type  |
|------|-----------|---|-------|
| 1    | R1PRMEM   | r1prmem:w1 R proxy rating of memory                       | Categ |
| 2    | R2PRMEM   | r2prmem:w2 R proxy rating of memory                       | Categ |
| 3    | R3PRMEM   | r3prmem:w3 R proxy rating of memory                       | Categ |
| 4    | R4PRMEM   | r4prmem:w4 R proxy rating of memory                       | Categ |
| 5    | R5PRMEM   | r5prmem:w5 R proxy rating of memory                       | Categ |
| 1    | S1PRMEM   | s1prmem:w1 S proxy rating of memory                       | Categ |
| 2    | S2PRMEM   | s2prmem:w2 S proxy rating of memory                       | Categ |
| 3    | S3PRMEM   | s3prmem:w3 S proxy rating of memory                       | Categ |
| 4    | S4PRMEM   | s4prmem:w4 S proxy rating of memory                       | Categ |
| 5    | S5PRMEM   | s5prmem:w5 S proxy rating of memory                       | Categ |
| 1    | R1PRCHMEM | r1prchmem:w1 R proxy rating change in memory              | Categ |
| 2    | R2PRCHMEM | r2prchmem:w2 R proxy rating change in memory              | Categ |
| 3    | R3PRCHMEM | r3prchmem:w3 R proxy rating change in memory              | Categ |
| 4    | R4PRCHMEM | r4prchmem:w4 R proxy rating change in memory              | Categ |
| 5    | R5PRCHMEM | r5prchmem:w5 R proxy rating change in memory              | Categ |
| 1    | S1PRCHMEM | s1prchmem:w1 S proxy rating change in memory              | Categ |
| 2    | S2PRCHMEM | s2prchmem:w2 S proxy rating change in memory              | Categ |
| 3    | S3PRCHMEM | s3prchmem:w3 S proxy rating change in memory              | Categ |
| 4    | S4PRCHMEM | s4prchmem:w4 S proxy rating change in memory              | Categ |
| 5    | S5PRCHMEM | s5prchmem:w5 S proxy rating change in memory              | Categ |
| 1    | R1RJUDG   | r1rjudg:w1 R proxy rating of judgement                    | Categ |
| 2    | R2RJUDG   | r2rjudg:w2 R proxy rating of judgement                    | Categ |
| 3    | R3RJUDG   | r3rjudg:w3 R proxy rating of judgement                    | Categ |
| 4    | R4RJUDG   | r4rjudg:w4 R proxy rating of judgement                    | Categ |
| 5    | R5RJUDG   | r5rjudg:w5 R proxy rating of judgement                    | Categ |
| 1    | S1RJUDG   | s1rjudg:w1 S proxy rating of judgement                    | Categ |
| 2    | S2RJUDG   | s2rjudg:w2 S proxy rating of judgement                    | Categ |
| 3    | S3RJUDG   | s3rjudg:w3 S proxy rating of judgement                    | Categ |
| 4    | S4RJUDG   | s4rjudg:w4 S proxy rating of judgement                    | Categ |
| 5    | S5RJUDG   | s5rjudg:w5 S proxy rating of judgement                    | Categ |
| 1    | R1RORGNZ  | r1rorgnz:w1 R proxy rating of daily activity organization | Categ |
| 2    | R2RORGNZ  | r2rorgnz:w2 R proxy rating of daily activity organization | Categ |
| 3    | R3RORGNZ  | r3rorgnz:w3 R proxy rating of daily activity organization | Categ |
| 4    | R4RORGNZ  | r4rorgnz:w4 R proxy rating of daily activity organization | Categ |
| 5    | R5RORGNZ  | r5rorgnz:w5 R proxy rating of daily activity organization | Categ |
| 1    | S1RORGNZ  | s1rorgnz:w1 S proxy rating of daily activity organization | Categ |
| 2    | S2RORGNZ  | s2rorgnz:w2 S proxy rating of daily activity organization | Categ |
| 3    | S3RORGNZ  | s3rorgnz:w3 S proxy rating of daily activity organization | Categ |
| 4    | S4RORGNZ  | s4rorgnz:w4 S proxy rating of daily activity organization | Categ |
| 5    | S5RORGNZ  | s5rorgnz:w5 S proxy rating of daily activity organization | Categ |

### Descriptive Statistics

| Variable | N    | Mean | Std Dev | Minimum | Maximum |
|----------|------|------|---------|---------|---------|
| R1PRMEM  | 1029 | 3.28 | 0.96    | 1.00    | 5.00    |
| R2PRMEM  | 1175 | 3.21 | 0.97    | 1.00    | 5.00    |
| R3PRMEM  | 1275 | 3.44 | 1.02    | 1.00    | 5.00    |
| R4PRMEM  | 928  | 3.54 | 1.07    | 1.00    | 5.00    |
| R5PRMEM  | 1324 | 3.37 | 1.11    | 1.00    | 5.00    |

|           |      |      |      |      |      |
|-----------|------|------|------|------|------|
| S1PRMEM   | 658  | 3.17 | 0.92 | 1.00 | 5.00 |
| S2PRMEM   | 818  | 3.16 | 0.94 | 1.00 | 5.00 |
| S3PRMEM   | 726  | 3.33 | 0.97 | 1.00 | 5.00 |
| S4PRMEM   | 470  | 3.39 | 1.04 | 1.00 | 5.00 |
| S5PRMEM   | 562  | 3.41 | 1.06 | 1.00 | 5.00 |
| R1PRCHMEM | 1027 | 2.18 | 0.44 | 1.00 | 3.00 |
| R2PRCHMEM | 1173 | 2.14 | 0.43 | 1.00 | 3.00 |
| R3PRCHMEM | 1274 | 2.24 | 0.50 | 1.00 | 3.00 |
| R4PRCHMEM | 927  | 2.31 | 0.51 | 1.00 | 3.00 |
| R5PRCHMEM | 1322 | 2.26 | 0.50 | 1.00 | 3.00 |
| S1PRCHMEM | 656  | 2.13 | 0.41 | 1.00 | 3.00 |
| S2PRCHMEM | 817  | 2.12 | 0.40 | 1.00 | 3.00 |
| S3PRCHMEM | 726  | 2.17 | 0.45 | 1.00 | 3.00 |
| S4PRCHMEM | 469  | 2.24 | 0.48 | 1.00 | 3.00 |
| S5PRCHMEM | 561  | 2.26 | 0.49 | 1.00 | 3.00 |
| R1RJUDG   | 1024 | 3.31 | 0.99 | 1.00 | 5.00 |
| R2RJUDG   | 1172 | 3.17 | 0.97 | 1.00 | 5.00 |
| R3RJUDG   | 1274 | 3.46 | 1.06 | 1.00 | 5.00 |
| R4RJUDG   | 927  | 3.57 | 1.08 | 1.00 | 5.00 |
| R5RJUDG   | 1322 | 3.41 | 1.14 | 1.00 | 5.00 |
| S1RJUDG   | 655  | 3.16 | 0.92 | 1.00 | 5.00 |
| S2RJUDG   | 817  | 3.09 | 0.95 | 1.00 | 5.00 |
| S3RJUDG   | 725  | 3.28 | 1.00 | 1.00 | 5.00 |
| S4RJUDG   | 469  | 3.37 | 1.06 | 1.00 | 5.00 |
| S5RJUDG   | 560  | 3.41 | 1.07 | 1.00 | 5.00 |
| R1RORGNZ  | 1022 | 3.30 | 1.00 | 1.00 | 5.00 |
| R2RORGNZ  | 1173 | 3.16 | 1.01 | 1.00 | 5.00 |
| R3RORGNZ  | 1275 | 3.48 | 1.09 | 1.00 | 5.00 |
| R4RORGNZ  | 927  | 3.57 | 1.13 | 1.00 | 5.00 |
| R5RORGNZ  | 1322 | 3.43 | 1.18 | 1.00 | 5.00 |
| S1RORGNZ  | 653  | 3.16 | 0.93 | 1.00 | 5.00 |
| S2RORGNZ  | 817  | 3.04 | 0.98 | 1.00 | 5.00 |
| S3RORGNZ  | 726  | 3.28 | 1.04 | 1.00 | 5.00 |
| S4RORGNZ  | 470  | 3.37 | 1.13 | 1.00 | 5.00 |
| S5RORGNZ  | 559  | 3.45 | 1.12 | 1.00 | 5.00 |

Categorical Variable Codes

|                  |         |         |         |         |         |
|------------------|---------|---------|---------|---------|---------|
| Value-----       | R1PRMEM | R2PRMEM | R3PRMEM | R4PRMEM | R5PRMEM |
| .d:DK            | 1       | 3       |         | 1       | 2       |
| .m:Missing       | 1       |         |         |         | 2       |
| .n:Non-proxy ivw | 14154   | 12526   | 14448   | 13850   | 15786   |
| .r:Refuse        | 1       |         |         |         |         |
| 1.Excellent      | 48      | 63      | 64      | 52      | 114     |
| 2.Very good      | 117     | 160     | 122     | 76      | 124     |
| 3.Good           | 469     | 527     | 473     | 299     | 431     |
| 4.Fair           | 287     | 316     | 424     | 320     | 467     |
| 5.Poor           | 108     | 109     | 192     | 181     | 188     |
| Value-----       | S1PRMEM | S2PRMEM | S3PRMEM | S4PRMEM | S5PRMEM |
| .d:DK            |         | 3       |         |         |         |
| .m:Missing       | 1       |         |         |         | 1       |
| .n:Non-proxy ivw | 9988    | 8743    | 9866    | 9182    | 7075    |
| .r:Refuse        | 1       |         |         |         |         |
| .u:Unmar         | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR         | 333     | 131     | 349     | 280     | 501     |
| 1.Excellent      | 35      | 42      | 33      | 28      | 39      |
| 2.Very good      | 79      | 124     | 86      | 49      | 50      |
| 3.Good           | 332     | 375     | 293     | 174     | 192     |
| 4.Fair           | 165     | 217     | 236     | 152     | 201     |



|                  |  |           |           |           |           |           |
|------------------|--|-----------|-----------|-----------|-----------|-----------|
| 5.Poor           |  | 47        | 60        | 78        | 67        | 80        |
| Value-----       |  | R1PRCHMEM | R2PRCHMEM | R3PRCHMEM | R4PRCHMEM | R5PRCHMEM |
| .d:DK            |  | 2         | 5         | 1         | 2         | 4         |
| .m:Missing       |  | 1         |           |           |           | 2         |
| .n:Non-proxy ivw |  | 14154     | 12526     | 14448     | 13850     | 15786     |
| .r:Refuse        |  | 2         |           |           |           |           |
| 1.Better         |  | 22        | 35        | 42        | 22        | 34        |
| 2.Same           |  | 800       | 935       | 879       | 595       | 907       |
| 3.Worse          |  | 205       | 203       | 353       | 310       | 381       |
| Value-----       |  | S1PRCHMEM | S2PRCHMEM | S3PRCHMEM | S4PRCHMEM | S5PRCHMEM |
| .d:DK            |  | 1         | 4         |           | 1         | 1         |
| .m:Missing       |  | 1         |           |           |           | 1         |
| .n:Non-proxy ivw |  | 9988      | 8743      | 9866      | 9182      | 7075      |
| .r:Refuse        |  | 2         |           |           |           |           |
| .u:Unmar         |  | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR         |  | 333       | 131       | 349       | 280       | 501       |
| 1.Better         |  | 17        | 25        | 22        | 11        | 13        |
| 2.Same           |  | 534       | 673       | 555       | 333       | 388       |
| 3.Worse          |  | 105       | 119       | 149       | 125       | 160       |
| Value-----       |  | R1RJUDG   | R2RJUDG   | R3RJUDG   | R4RJUDG   | R5RJUDG   |
| .d:DK            |  | 2         | 6         | 1         | 2         | 3         |
| .m:Missing       |  | 1         |           |           |           | 2         |
| .n:Non-proxy ivw |  | 14154     | 12526     | 14448     | 13850     | 15786     |
| .r:Refuse        |  | 5         |           |           |           | 1         |
| 1.Excellent      |  | 45        | 69        | 60        | 43        | 97        |
| 2.Very good      |  | 121       | 147       | 120       | 83        | 152       |
| 3.Good           |  | 468       | 586       | 522       | 317       | 449       |
| 4.Fair           |  | 251       | 253       | 312       | 268       | 362       |
| 5.Poor           |  | 139       | 117       | 260       | 216       | 262       |
| Value-----       |  | S1RJUDG   | S2RJUDG   | S3RJUDG   | S4RJUDG   | S5RJUDG   |
| .d:DK            |  |           | 4         | 1         | 1         | 2         |
| .m:Missing       |  | 1         |           |           |           | 1         |
| .n:Non-proxy ivw |  | 9988      | 8743      | 9866      | 9182      | 7075      |
| .r:Refuse        |  | 4         |           |           |           |           |
| .u:Unmar         |  | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR         |  | 333       | 131       | 349       | 280       | 501       |
| 1.Excellent      |  | 32        | 50        | 36        | 27        | 29        |
| 2.Very good      |  | 88        | 116       | 87        | 53        | 68        |
| 3.Good           |  | 330       | 427       | 332       | 184       | 204       |
| 4.Fair           |  | 155       | 156       | 175       | 131       | 160       |
| 5.Poor           |  | 50        | 68        | 95        | 74        | 99        |
| Value-----       |  | R1RORGNZ  | R2RORGNZ  | R3RORGNZ  | R4RORGNZ  | R5RORGNZ  |
| .d:DK            |  | 3         | 5         |           | 1         | 3         |
| .m:Missing       |  | 1         |           |           |           | 2         |
| .n:Non-proxy ivw |  | 14154     | 12526     | 14448     | 13850     | 15786     |
| .r:Refuse        |  | 6         |           |           | 1         | 1         |
| 1.Excellent      |  | 44        | 74        | 64        | 53        | 103       |
| 2.Very good      |  | 116       | 158       | 120       | 79        | 152       |
| 3.Good           |  | 506       | 589       | 511       | 325       | 441       |
| 4.Fair           |  | 205       | 211       | 297       | 227       | 332       |
| 5.Poor           |  | 151       | 141       | 283       | 243       | 294       |
| Value-----       |  | S1RORGNZ  | S2RORGNZ  | S3RORGNZ  | S4RORGNZ  | S5RORGNZ  |
| .d:DK            |  | 2         | 4         |           |           | 3         |
| .m:Missing       |  | 1         |           |           |           | 1         |
| .n:Non-proxy ivw |  | 9988      | 8743      | 9866      | 9182      | 7075      |
| .r:Refuse        |  | 4         |           |           |           |           |
| .u:Unmar         |  | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR         |  | 333       | 131       | 349       | 280       | 501       |
| 1.Excellent      |  | 29        | 58        | 41        | 35        | 31        |
| 2.Very good      |  | 85        | 129       | 88        | 47        | 67        |
| 3.Good           |  | 354       | 427       | 332       | 189       | 201       |
| 4.Fair           |  | 121       | 128       | 159       | 105       | 137       |
| 5.Poor           |  | 64        | 75        | 106       | 94        | 123       |

How Constructed

RwPRMEM indicates the proxy's rating of the respondent's memory at the present time. RwPRMEM is coded as follows: 1.excellent, 2.very good, 3.good, 4.fair, 5.poor. RwPRMEM is set to special missing value .n for non-proxy interviews. Don't know, refused, or other missing responses are assigned special missing values .d, .r, or .m, respectively. RwPRMEM is set to plain missing (.) if the respondent did not participate in the current wave.

RwPRCHMEM indicates the proxy's rating of the respondent's memory compared to two years ago. RwPRCHMEM is coded as follows: 1.better, 2.same, 3.worse. RwPRCHMEM is set to special missing value .n for non-proxy interviews. Don't know, refused, or other missing responses are assigned special missing values .d, .r, or .m, respectively. RwPRCHMEM is set to plain missing (.) if the respondent did not participate in the current wave.

RwRJUDG indicates the proxy's rating of the respondent's ability to make judgements and decisions. RwRJUDG is coded as follows: 1.excellent, 2.very good, 3.good, 4.fair, 5.poor. RwRJUDG is set to special missing value .n for non-proxy interviews. Don't know, refused, or other missing responses are assigned special missing values .d, .r, or .m, respectively. RwRJUDG is set to plain missing (.) if the respondent did not participate in the current wave.

RwRORGNZ indicates the proxy's rating of the respondent's ability to organize their daily activities. RwRORGNZ is coded as follows: 1.excellent, 2.very good, 3.good, 4.fair, 5.poor. RwRORGNZ is set to special missing value .n for non-proxy interviews. Don't know, refused, or other missing responses are assigned special missing values .d, .r, or .m, respectively. RwRORGNZ is set to plain missing (.) if the respondent did not participate in the current wave.

SwPRMEM, SwPRCHMEM, SwRJUDG, and SwRORGNZ are taken from the Wave 'w' spouse's values for RwPRMEM, RwPRCHMEM, RwRJUDG, and RwRORGNZ, respectively. In addition to the special missing codes used in the respondent variables, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

The RAND HRS has comparable variables for RwPRMEM and RwPRCHMEM. The HRS asks about the respondent's ability to make judgements and decisions and organize their daily activities, but these variables have not yet been made available in the RAND HRS or Harmonized HRS.

## MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| PC1     | memory  |
| PC2     | change in memory  |
| PC3     | judgment  |
| PC4     | organization  |
| Wave 2: |   |
| PC1     | memory  |
| PC2     | change in memory  |
| PC3     | judgment  |
| PC4     | organization  |
| Wave 3: |   |
| PC1_12  | Present time: Report the subject's memory quality       |
| PC2_12  | Compared to 2 years ago: Report the subject's memory qu |
| PC3_12  | Report subject's ability to make judgments/decisions    |
| PC4_12  | Report subject's ability to organize his/her daily acti |
| Wave 4: |   |
| PC1_15  | Present time: Subject's memory                          |
| PC2_15  | Compared to 2 years ago: Subject's memory quality       |
| PC3_15  | Subject's ability to make judgments and take decisions  |
| PC4_15  | Subject's ability to organize his/her daily activities  |
| Wave 5: |   |

|        |  |
|--------|--|
| PC1_18 | Present time: Subject's memory                         |
| PC2_18 | Compared to 2 years ago: Subject's memory quality      |
| PC3_18 | Subject's ability to make judgments and take decisions |
| PC4_18 | Subject's ability to organize his/her daily activities |

|  |
|--|
| <b>Proxy Cognition: Cognitive Impairment</b> |
|--|

| Wave | Variable | Label                                     | Type  |
|------|----------|---|-------|
| 1    | R1LOST   | r1lost:w1 R lost in familiar environments | Categ |
| 2    | R2LOST   | r2lost:w2 R lost in familiar environments | Categ |
| 3    | R3LOST   | r3lost:w3 R lost in familiar environments | Categ |
| 4    | R4LOST   | r4lost:w4 R lost in familiar environments | Categ |
| 5    | R5LOST   | r5lost:w5 R lost in familiar environments | Categ |
| 1    | S1LOST   | s1lost:w1 S lost in familiar environments | Categ |
| 2    | S2LOST   | s2lost:w2 S lost in familiar environments | Categ |
| 3    | S3LOST   | s3lost:w3 S lost in familiar environments | Categ |
| 4    | S4LOST   | s4lost:w4 S lost in familiar environments | Categ |
| 5    | S5LOST   | s5lost:w5 S lost in familiar environments | Categ |
| 1    | R1WANDER | r1wander:w1 R ever wanders off            | Categ |
| 2    | R2WANDER | r2wander:w2 R ever wanders off            | Categ |
| 3    | R3WANDER | r3wander:w3 R ever wanders off            | Categ |
| 4    | R4WANDER | r4wander:w4 R ever wanders off            | Categ |
| 5    | R5WANDER | r5wander:w5 R ever wanders off            | Categ |
| 1    | S1WANDER | s1wander:w1 S ever wanders off            | Categ |
| 2    | S2WANDER | s2wander:w2 S ever wanders off            | Categ |
| 3    | S3WANDER | s3wander:w3 S ever wanders off            | Categ |
| 4    | S4WANDER | s4wander:w4 S ever wanders off            | Categ |
| 5    | S5WANDER | s5wander:w5 S ever wanders off            | Categ |
| 1    | R1ALONE  | r1alone:w1 R can be left alone            | Categ |
| 2    | R2ALONE  | r2alone:w2 R can be left alone            | Categ |
| 3    | R3ALONE  | r3alone:w3 R can be left alone            | Categ |
| 4    | R4ALONE  | r4alone:w4 R can be left alone            | Categ |
| 5    | R5ALONE  | r5alone:w5 R can be left alone            | Categ |
| 1    | S1ALONE  | s1alone:w1 S can be left alone            | Categ |
| 2    | S2ALONE  | s2alone:w2 S can be left alone            | Categ |
| 3    | S3ALONE  | s3alone:w3 S can be left alone            | Categ |
| 4    | S4ALONE  | s4alone:w4 S can be left alone            | Categ |
| 5    | S5ALONE  | s5alone:w5 S can be left alone            | Categ |
| 1    | R1HALUC  | r1haluc:w1 R hallucinates                 | Categ |
| 2    | R2HALUC  | r2haluc:w2 R hallucinates                 | Categ |
| 3    | R3HALUC  | r3haluc:w3 R hallucinates                 | Categ |
| 4    | R4HALUC  | r4haluc:w4 R hallucinates                 | Categ |
| 5    | R5HALUC  | r5haluc:w5 R hallucinates                 | Categ |
| 1    | S1HALUC  | s1haluc:w1 S hallucinates                 | Categ |
| 2    | S2HALUC  | s2haluc:w2 S hallucinates                 | Categ |
| 3    | S3HALUC  | s3haluc:w3 S hallucinates                 | Categ |
| 4    | S4HALUC  | s4haluc:w4 S hallucinates                 | Categ |
| 5    | S5HALUC  | s5haluc:w5 S hallucinates                 | Categ |

**Descriptive Statistics**

| Variable | N    | Mean | Std Dev | Minimum | Maximum |
|----------|------|------|---------|---------|---------|
| R1LOST   | 1010 | 0.17 | 0.38    | 0.00    | 1.00    |
| R2LOST   | 1169 | 0.18 | 0.38    | 0.00    | 1.00    |
| R3LOST   | 1267 | 0.25 | 0.43    | 0.00    | 1.00    |
| R4LOST   | 925  | 0.34 | 0.47    | 0.00    | 1.00    |
| R5LOST   | 1311 | 0.25 | 0.43    | 0.00    | 1.00    |

|          |      |      |      |      |      |
|----------|------|------|------|------|------|
| S1LOST   | 646  | 0.11 | 0.32 | 0.00 | 1.00 |
| S2LOST   | 815  | 0.14 | 0.34 | 0.00 | 1.00 |
| S3LOST   | 722  | 0.17 | 0.37 | 0.00 | 1.00 |
| S4LOST   | 468  | 0.23 | 0.42 | 0.00 | 1.00 |
| S5LOST   | 553  | 0.19 | 0.39 | 0.00 | 1.00 |
| R1WANDER | 1004 | 0.08 | 0.27 | 0.00 | 1.00 |
| R2WANDER | 1160 | 0.08 | 0.27 | 0.00 | 1.00 |
| R3WANDER | 1266 | 0.12 | 0.33 | 0.00 | 1.00 |
| R4WANDER | 924  | 0.15 | 0.35 | 0.00 | 1.00 |
| R5WANDER | 1309 | 0.12 | 0.33 | 0.00 | 1.00 |
| S1WANDER | 645  | 0.04 | 0.20 | 0.00 | 1.00 |
| S2WANDER | 812  | 0.07 | 0.25 | 0.00 | 1.00 |
| S3WANDER | 723  | 0.09 | 0.28 | 0.00 | 1.00 |
| S4WANDER | 470  | 0.10 | 0.30 | 0.00 | 1.00 |
| S5WANDER | 553  | 0.11 | 0.31 | 0.00 | 1.00 |
| R1ALONE  | 1020 | 0.85 | 0.36 | 0.00 | 1.00 |
| R2ALONE  | 1173 | 0.83 | 0.38 | 0.00 | 1.00 |
| R3ALONE  | 1274 | 0.77 | 0.42 | 0.00 | 1.00 |
| R4ALONE  | 927  | 0.74 | 0.44 | 0.00 | 1.00 |
| R5ALONE  | 1321 | 0.79 | 0.41 | 0.00 | 1.00 |
| S1ALONE  | 651  | 0.88 | 0.33 | 0.00 | 1.00 |
| S2ALONE  | 817  | 0.82 | 0.38 | 0.00 | 1.00 |
| S3ALONE  | 725  | 0.79 | 0.41 | 0.00 | 1.00 |
| S4ALONE  | 469  | 0.78 | 0.41 | 0.00 | 1.00 |
| S5ALONE  | 559  | 0.80 | 0.40 | 0.00 | 1.00 |
| R1HALUC  | 1005 | 0.14 | 0.34 | 0.00 | 1.00 |
| R2HALUC  | 1166 | 0.11 | 0.31 | 0.00 | 1.00 |
| R3HALUC  | 1270 | 0.15 | 0.35 | 0.00 | 1.00 |
| R4HALUC  | 917  | 0.23 | 0.42 | 0.00 | 1.00 |
| R5HALUC  | 1311 | 0.18 | 0.38 | 0.00 | 1.00 |
| S1HALUC  | 641  | 0.08 | 0.28 | 0.00 | 1.00 |
| S2HALUC  | 812  | 0.08 | 0.27 | 0.00 | 1.00 |
| S3HALUC  | 723  | 0.09 | 0.28 | 0.00 | 1.00 |
| S4HALUC  | 468  | 0.15 | 0.36 | 0.00 | 1.00 |
| S5HALUC  | 554  | 0.14 | 0.34 | 0.00 | 1.00 |

Categorical Variable Codes

|                  |          |          |          |          |          |
|------------------|----------|----------|----------|----------|----------|
| Value-----       | R1LOST   | R2LOST   | R3LOST   | R4LOST   | R5LOST   |
| .d:DK            | 12       | 9        | 6        | 3        | 11       |
| .m:Missing       | 1        |          |          |          | 2        |
| .n:Non-proxy ivw | 14154    | 12526    | 14448    | 13850    | 15786    |
| .r:Refuse        | 9        |          | 2        | 1        | 4        |
| 0.No             | 834      | 963      | 950      | 614      | 985      |
| 1.Yes            | 176      | 206      | 317      | 311      | 326      |
| Value-----       | S1LOST   | S2LOST   | S3LOST   | S4LOST   | S5LOST   |
| .d:DK            | 6        | 6        | 4        | 2        | 5        |
| .m:Missing       | 1        |          |          |          | 1        |
| .n:Non-proxy ivw | 9988     | 8743     | 9866     | 9182     | 7075     |
| .r:Refuse        | 7        |          |          |          | 4        |
| .u:Unmar         | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR         | 333      | 131      | 349      | 280      | 501      |
| 0.No             | 572      | 703      | 602      | 360      | 447      |
| 1.Yes            | 74       | 112      | 120      | 108      | 106      |
| Value-----       | R1WANDER | R2WANDER | R3WANDER | R4WANDER | R5WANDER |
| .d:DK            | 12       | 13       | 7        | 4        | 7        |
| .m:Missing       | 1        |          |          |          | 2        |
| .n:Non-proxy ivw | 14154    | 12526    | 14448    | 13850    | 15786    |

|                  |  |          |          |          |          |          |
|------------------|--|----------|----------|----------|----------|----------|
| .r:Refuse        |  | 15       | 5        | 2        | 1        | 10       |
| 0.No             |  | 926      | 1067     | 1108     | 789      | 1149     |
| 1.Yes            |  | 78       | 93       | 158      | 135      | 160      |
| Value-----       |  | S1WANDER | S2WANDER | S3WANDER | S4WANDER | S5WANDER |
| .d:DK            |  | 4        | 6        | 3        |          | 4        |
| .m:Missing       |  | 1        |          |          |          | 1        |
| .n:Non-proxy ivw |  | 9988     | 8743     | 9866     | 9182     | 7075     |
| .r:Refuse        |  | 10       | 3        |          |          | 5        |
| .u:Unmar         |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR         |  | 333      | 131      | 349      | 280      | 501      |
| 0.No             |  | 617      | 756      | 661      | 422      | 492      |
| 1.Yes            |  | 28       | 56       | 62       | 48       | 61       |
| Value-----       |  | R1ALONE  | R2ALONE  | R3ALONE  | R4ALONE  | R5ALONE  |
| .d:DK            |  | 4        | 5        |          | 1        | 1        |
| .m:Missing       |  | 1        |          |          |          | 2        |
| .n:Non-proxy ivw |  | 14154    | 12526    | 14448    | 13850    | 15786    |
| .r:Refuse        |  | 7        |          | 1        | 1        | 4        |
| 0.No             |  | 154      | 204      | 288      | 239      | 281      |
| 1.Yes            |  | 866      | 969      | 986      | 688      | 1040     |
| Value-----       |  | S1ALONE  | S2ALONE  | S3ALONE  | S4ALONE  | S5ALONE  |
| .d:DK            |  | 1        | 4        |          |          |          |
| .m:Missing       |  | 1        |          |          |          | 1        |
| .n:Non-proxy ivw |  | 9988     | 8743     | 9866     | 9182     | 7075     |
| .r:Refuse        |  | 7        |          | 1        | 1        | 3        |
| .u:Unmar         |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR         |  | 333      | 131      | 349      | 280      | 501      |
| 0.No             |  | 81       | 145      | 151      | 102      | 114      |
| 1.Yes            |  | 570      | 672      | 574      | 367      | 445      |
| Value-----       |  | R1HALUC  | R2HALUC  | R3HALUC  | R4HALUC  | R5HALUC  |
| .d:DK            |  | 10       | 12       | 3        | 11       | 9        |
| .m:Missing       |  | 1        |          |          |          | 2        |
| .n:Non-proxy ivw |  | 14154    | 12526    | 14448    | 13850    | 15786    |
| .r:Refuse        |  | 16       |          | 2        | 1        | 6        |
| 0.No             |  | 867      | 1040     | 1084     | 705      | 1076     |
| 1.Yes            |  | 138      | 126      | 186      | 212      | 235      |
| Value-----       |  | S1HALUC  | S2HALUC  | S3HALUC  | S4HALUC  | S5HALUC  |
| .d:DK            |  | 6        | 9        | 2        | 2        | 4        |
| .m:Missing       |  | 1        |          |          |          | 1        |
| .n:Non-proxy ivw |  | 9988     | 8743     | 9866     | 9182     | 7075     |
| .r:Refuse        |  | 12       |          | 1        |          | 4        |
| .u:Unmar         |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR         |  | 333      | 131      | 349      | 280      | 501      |
| 0.No             |  | 587      | 746      | 659      | 397      | 478      |
| 1.Yes            |  | 54       | 66       | 64       | 71       | 76       |

## How Constructed

RwLOST, RwWANDER, RwALONE, and RwHALUC indicate whether the proxy indicated that the respondent shows the following signs of cognitive impairment. RwLOST indicates whether the respondent has ever gotten lost in a familiar environment. RwWANDER indicates whether the respondent ever wanders off and is not able to return by themselves. RwALONE indicates whether the respondent can be left alone for an hour or so. RwHALUC indicates whether the respondent ever sees or hears things that are not really there. These variables are coded as 0.no and 1.yes. They are set to special missing value .n for non-proxy interviews. Don't know, refused, or other missing responses are assigned special missing values .d, .r, or .m, respectively. RwLOST, RwWANDER, RwALONE, and RwHALUC are set to plain missing (.) if the respondent did not participate in the current wave.

SwLOST, SwWANDER, SwALONE, and SwHALUC are taken from the Wave 'w' spouse's values for RwLOST, RwWANDER, RwALONE, and RwHALUC, respectively. In addition to the special missing codes used in the respondent variables, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

The RAND HRS has comparable variables for RwLOST, RwWANDER, RwALONE, and RwHALUC.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| PC53    | gets lost   |
| PC54    | wanders off   |
| PC55    | can be left alone                                       |
| PC56    | see and hear things                                     |
| Wave 2: |   |
| PC53    | gets lost   |
| PC54    | wanders off   |
| PC55    | can be left alone                                       |
| PC56    | see and hear things                                     |
| Wave 3: |   |
| PC53_12 | Currently:Does subject get lost in a familiar environme |
| PC54_12 | Currently:Does subject wander off without returning by  |
| PC55_12 | Currently:Can subject be left alone for about an hour   |
| PC56_12 | Currently:Does subject hear/see things that are not pre |
| Wave 4: |   |
| PC53_15 | Currently: Does subject get lost in a familiar environm |
| PC54_15 | Currently: Does subject wander off and not return by hi |
| PC55_15 | Currently: Can subject be left alone for about an hour  |
| PC56_15 | Currently: Does subject ever see or hear things that ar |
| Wave 5: |   |
| PC53_18 | Currently: Does subject get lost in a familiar environm |
| PC54_18 | Currently: Does subject wander off and not return by hi |
| PC55_18 | Currently: Can subject be left alone for about an hour  |
| PC56_18 | Currently: Does subject ever see or hear things that ar |

|  |
|--|
| <b>Proxy Cognition: Problem Behaviors in Past Week</b> |
|--|

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1OANGRY | r1oangry:w1 R how often angry during past week               | Categ |
| 2    | R2OANGRY | r2oangry:w2 R how often angry during past week               | Categ |
| 3    | R3OANGRY | r3oangry:w3 R how often angry during past week               | Categ |
| 4    | R4OANGRY | r4oangry:w4 R how often angry during past week               | Categ |
| 1    | S1OANGRY | s1oangry:w1 S how often angry during past week               | Categ |
| 2    | S2OANGRY | s2oangry:w2 S how often angry during past week               | Categ |
| 3    | S3OANGRY | s3oangry:w3 S how often angry during past week               | Categ |
| 4    | S4OANGRY | s4oangry:w4 S how often angry during past week               | Categ |
| 1    | R1OSLEEP | r1osleep:w1 R how often trouble sleeping during past week    | Categ |
| 2    | R2OSLEEP | r2osleep:w2 R how often trouble sleeping during past week    | Categ |
| 3    | R3OSLEEP | r3osleep:w3 R how often trouble sleeping during past week    | Categ |
| 4    | R4OSLEEP | r4osleep:w4 R how often trouble sleeping during past week    | Categ |
| 1    | S1OSLEEP | s1osleep:w1 S how often trouble sleeping during past week    | Categ |
| 2    | S2OSLEEP | s2osleep:w2 S how often trouble sleeping during past week    | Categ |
| 3    | S3OSLEEP | s3osleep:w3 S how often trouble sleeping during past week    | Categ |
| 4    | S4OSLEEP | s4osleep:w4 S how often trouble sleeping during past week    | Categ |
| 1    | R1ODNGR  | r1odngr:w1 R how often dangerous during past week            | Categ |
| 2    | R2ODNGR  | r2odngr:w2 R how often dangerous during past week            | Categ |
| 3    | R3ODNGR  | r3odngr:w3 R how often dangerous during past week            | Categ |
| 4    | R4ODNGR  | r4odngr:w4 R how often dangerous during past week            | Categ |
| 1    | S1ODNGR  | s1odngr:w1 S how often dangerous during past week            | Categ |
| 2    | S2ODNGR  | s2odngr:w2 S how often dangerous during past week            | Categ |
| 3    | S3ODNGR  | s3odngr:w3 S how often dangerous during past week            | Categ |
| 4    | S4ODNGR  | s4odngr:w4 S how often dangerous during past week            | Categ |
| 1    | R1OPACE  | r1opace:w1 R how often paced around during past week         | Categ |
| 2    | R2OPACE  | r2opace:w2 R how often paced around during past week         | Categ |
| 3    | R3OPACE  | r3opace:w3 R how often paced around during past week         | Categ |
| 4    | R4OPACE  | r4opace:w4 R how often paced around during past week         | Categ |
| 1    | S1OPACE  | s1opace:w1 S how often paced around during past week         | Categ |
| 2    | S2OPACE  | s2opace:w2 S how often paced around during past week         | Categ |
| 3    | S3OPACE  | s3opace:w3 S how often paced around during past week         | Categ |
| 4    | S4OPACE  | s4opace:w4 S how often paced around during past week         | Categ |
| 1    | R1OPLOT  | r1oplot:w1 R how often thought someone plotting during past  | Categ |
| 2    | R2OPLOT  | r2oplot:w2 R how often thought someone plotting during past  | Categ |
| 3    | R3OPLOT  | r3oplot:w3 R how often thought someone plotting during past  | Categ |
| 4    | R4OPLOT  | r4oplot:w4 R how often thought someone plotting during past  | Categ |
| 1    | S1OPLOT  | s1oplot:w1 S how often thought someone plotting during past  | Categ |
| 2    | S2OPLOT  | s2oplot:w2 S how often thought someone plotting during past  | Categ |
| 3    | S3OPLOT  | s3oplot:w3 S how often thought someone plotting during past  | Categ |
| 4    | S4OPLOT  | s4oplot:w4 S how often thought someone plotting during past  | Categ |
| 1    | R1OALCHL | r1oalchl:w1 R how often drunk too much alcohol during past w | Categ |
| 2    | R2OALCHL | r2oalchl:w2 R how often drunk too much alcohol during past w | Categ |
| 3    | R3OALCHL | r3oalchl:w3 R how often drunk too much alcohol during past w | Categ |
| 4    | R4OALCHL | r4oalchl:w4 R how often drunk too much alcohol during past w | Categ |
| 1    | S1OALCHL | s1oalchl:w1 S how often drunk too much alcohol during past w | Categ |
| 2    | S2OALCHL | s2oalchl:w2 S how often drunk too much alcohol during past w | Categ |
| 3    | S3OALCHL | s3oalchl:w3 S how often drunk too much alcohol during past w | Categ |
| 4    | S4OALCHL | s4oalchl:w4 S how often drunk too much alcohol during past w | Categ |



Descriptive Statistics

| Variable | N    | Mean | Std Dev | Minimum | Maximum |
|----------|------|------|---------|---------|---------|
| R1OANGRY | 953  | 2.46 | 0.70    | 1.00    | 3.00    |
| R2OANGRY | 1080 | 2.51 | 0.68    | 1.00    | 3.00    |
| R3OANGRY | 1250 | 2.46 | 0.70    | 1.00    | 3.00    |
| R4OANGRY | 912  | 2.42 | 0.72    | 1.00    | 3.00    |
| S1OANGRY | 606  | 2.49 | 0.69    | 1.00    | 3.00    |
| S2OANGRY | 752  | 2.53 | 0.68    | 1.00    | 3.00    |
| S3OANGRY | 709  | 2.45 | 0.72    | 1.00    | 3.00    |
| S4OANGRY | 458  | 2.43 | 0.72    | 1.00    | 3.00    |
| R1OSLEEP | 942  | 2.56 | 0.68    | 1.00    | 3.00    |
| R2OSLEEP | 1057 | 2.54 | 0.69    | 1.00    | 3.00    |
| R3OSLEEP | 1243 | 2.42 | 0.75    | 1.00    | 3.00    |
| R4OSLEEP | 907  | 2.28 | 0.81    | 1.00    | 3.00    |
| S1OSLEEP | 600  | 2.65 | 0.61    | 1.00    | 3.00    |
| S2OSLEEP | 742  | 2.63 | 0.64    | 1.00    | 3.00    |
| S3OSLEEP | 705  | 2.51 | 0.72    | 1.00    | 3.00    |
| S4OSLEEP | 459  | 2.37 | 0.79    | 1.00    | 3.00    |
| R1ODNGR  | 964  | 2.90 | 0.35    | 1.00    | 3.00    |
| R2ODNGR  | 1088 | 2.91 | 0.32    | 1.00    | 3.00    |
| R3ODNGR  | 1255 | 2.87 | 0.40    | 1.00    | 3.00    |
| R4ODNGR  | 911  | 2.86 | 0.42    | 1.00    | 3.00    |
| S1ODNGR  | 613  | 2.93 | 0.29    | 1.00    | 3.00    |
| S2ODNGR  | 757  | 2.92 | 0.32    | 1.00    | 3.00    |
| S3ODNGR  | 712  | 2.89 | 0.37    | 1.00    | 3.00    |
| S4ODNGR  | 462  | 2.88 | 0.40    | 1.00    | 3.00    |
| R1OPACE  | 970  | 2.86 | 0.43    | 1.00    | 3.00    |
| R2OPACE  | 1086 | 2.87 | 0.40    | 1.00    | 3.00    |
| R3OPACE  | 1249 | 2.80 | 0.50    | 1.00    | 3.00    |
| R4OPACE  | 910  | 2.78 | 0.53    | 1.00    | 3.00    |
| S1OPACE  | 617  | 2.92 | 0.33    | 1.00    | 3.00    |
| S2OPACE  | 756  | 2.89 | 0.38    | 1.00    | 3.00    |
| S3OPACE  | 707  | 2.84 | 0.45    | 1.00    | 3.00    |
| S4OPACE  | 461  | 2.81 | 0.49    | 1.00    | 3.00    |
| R1OPLOT  | 966  | 2.87 | 0.42    | 1.00    | 3.00    |
| R2OPLOT  | 1087 | 2.88 | 0.40    | 1.00    | 3.00    |
| R3OPLOT  | 1253 | 2.87 | 0.42    | 1.00    | 3.00    |
| R4OPLOT  | 910  | 2.81 | 0.50    | 1.00    | 3.00    |
| S1OPLOT  | 613  | 2.93 | 0.32    | 1.00    | 3.00    |
| S2OPLOT  | 757  | 2.91 | 0.35    | 1.00    | 3.00    |
| S3OPLOT  | 709  | 2.91 | 0.34    | 1.00    | 3.00    |
| S4OPLOT  | 460  | 2.85 | 0.47    | 1.00    | 3.00    |
| R1OALCHL | 964  | 2.88 | 0.42    | 1.00    | 3.00    |
| R2OALCHL | 1091 | 2.90 | 0.35    | 1.00    | 3.00    |
| R3OALCHL | 1257 | 2.92 | 0.34    | 1.00    | 3.00    |
| R4OALCHL | 914  | 2.94 | 0.31    | 1.00    | 3.00    |
| S1OALCHL | 610  | 2.86 | 0.45    | 1.00    | 3.00    |
| S2OALCHL | 758  | 2.88 | 0.38    | 1.00    | 3.00    |
| S3OALCHL | 713  | 2.92 | 0.35    | 1.00    | 3.00    |
| S4OALCHL | 460  | 2.94 | 0.31    | 1.00    | 3.00    |

## Categorical Variable Codes

|                    |          |          |          |          |
|--------------------|----------|----------|----------|----------|
| Value-----         | R1OANGRY | R2OANGRY | R3OANGRY | R4OANGRY |
| .d:DK              | 66       | 98       | 24       | 15       |
| .m:Missing         | 1        |          |          |          |
| .n:Non-proxy ivw   | 14154    | 12526    | 14448    | 13850    |
| .r:Refuse          | 12       | 1        | 1        | 2        |
| 1.Most of the time | 118      | 115      | 154      | 126      |
| 2.Some of the time | 279      | 295      | 367      | 281      |
| 3.Never            | 556      | 670      | 729      | 505      |
| Value-----         | S1OANGRY | S2OANGRY | S3OANGRY | S4OANGRY |
| .d:DK              | 44       | 69       | 16       | 10       |
| .m:Missing         | 1        |          |          |          |
| .n:Non-proxy ivw   | 9988     | 8743     | 9866     | 9182     |
| .r:Refuse          | 9        | 1        | 1        | 2        |
| .u:Unmar           | 4205     | 4009     | 4782     | 4847     |
| .v:SP NR           | 333      | 131      | 349      | 280      |
| 1.Most of the time | 70       | 79       | 95       | 61       |
| 2.Some of the time | 171      | 193      | 198      | 139      |
| 3.Never            | 365      | 480      | 416      | 258      |
| Value-----         | R1OSLEEP | R2OSLEEP | R3OSLEEP | R4OSLEEP |
| .d:DK              | 77       | 120      | 31       | 22       |
| .m:Missing         | 1        |          |          |          |
| .n:Non-proxy ivw   | 14154    | 12526    | 14448    | 13850    |
| .r:Refuse          | 12       | 1        | 1        |          |
| 1.Most of the time | 101      | 120      | 200      | 207      |
| 2.Some of the time | 213      | 245      | 319      | 239      |
| 3.Never            | 628      | 692      | 724      | 461      |
| Value-----         | S1OSLEEP | S2OSLEEP | S3OSLEEP | S4OSLEEP |
| .d:DK              | 50       | 78       | 20       | 11       |
| .m:Missing         | 1        |          |          |          |
| .n:Non-proxy ivw   | 9988     | 8743     | 9866     | 9182     |
| .r:Refuse          | 9        | 1        | 1        |          |
| .u:Unmar           | 4205     | 4009     | 4782     | 4847     |
| .v:SP NR           | 333      | 131      | 349      | 280      |
| 1.Most of the time | 44       | 65       | 93       | 90       |
| 2.Some of the time | 120      | 145      | 157      | 110      |
| 3.Never            | 436      | 532      | 455      | 259      |
| Value-----         | R1ODNGR  | R2ODNGR  | R3ODNGR  | R4ODNGR  |
| .d:DK              | 53       | 90       | 18       | 17       |
| .m:Missing         | 1        |          |          |          |
| .n:Non-proxy ivw   | 14154    | 12526    | 14448    | 13850    |
| .r:Refuse          | 14       | 2        | 2        | 1        |
| 1.Most of the time | 15       | 14       | 28       | 28       |
| 2.Some of the time | 71       | 65       | 109      | 68       |
| 3.Never            | 878      | 1009     | 1118     | 815      |
| Value-----         | S1ODNGR  | S2ODNGR  | S3ODNGR  | S4ODNGR  |
| .d:DK              | 36       | 64       | 13       | 8        |
| .m:Missing         | 1        |          |          |          |
| .n:Non-proxy ivw   | 9988     | 8743     | 9866     | 9182     |
| .r:Refuse          | 10       | 1        | 1        |          |
| .u:Unmar           | 4205     | 4009     | 4782     | 4847     |
| .v:SP NR           | 333      | 131      | 349      | 280      |
| 1.Most of the time | 6        | 10       | 14       | 12       |
| 2.Some of the time | 31       | 42       | 52       | 32       |
| 3.Never            | 576      | 705      | 646      | 418      |
| Value-----         | R1OPACE  | R2OPACE  | R3OPACE  | R4OPACE  |
| .d:DK              | 50       | 92       | 22       | 19       |
| .m:Missing         | 1        |          |          |          |
| .n:Non-proxy ivw   | 14154    | 12526    | 14448    | 13850    |
| .r:Refuse          | 11       |          | 4        |          |
| 1.Most of the time | 33       | 27       | 56       | 51       |
| 2.Some of the time | 65       | 82       | 141      | 99       |
| 3.Never            | 872      | 977      | 1052     | 760      |

| Value-----         | S1OPACE | S2OPACE | S3OPACE | S4OPACE |
|--------------------|---------|---------|---------|---------|
| .d:DK              | 34      | 65      | 16      | 9       |
| .m:Missing         | 1       |         |         |         |
| .n:Non-proxy ivw   | 9988    | 8743    | 9866    | 9182    |
| .r:Refuse          | 8       |         | 3       |         |
| .u:Unmar           | 4205    | 4009    | 4782    | 4847    |
| .v:SP NR           | 333     | 131     | 349     | 280     |
| 1.Most of the time | 11      | 19      | 25      | 21      |
| 2.Some of the time | 25      | 45      | 60      | 44      |
| 3.Never            | 581     | 692     | 622     | 396     |

| Value-----         | R1OPLOT | R2OPLOT | R3OPLOT | R4OPLOT |
|--------------------|---------|---------|---------|---------|
| .d:DK              | 52      | 89      | 20      | 17      |
| .m:Missing         | 1       |         |         |         |
| .n:Non-proxy ivw   | 14154   | 12526   | 14448   | 13850   |
| .r:Refuse          | 13      | 2       | 2       | 2       |
| 1.Most of the time | 30      | 32      | 37      | 43      |
| 2.Some of the time | 62      | 65      | 91      | 86      |
| 3.Never            | 874     | 990     | 1125    | 781     |

| Value-----         | S1OPLOT | S2OPLOT | S3OPLOT | S4OPLOT |
|--------------------|---------|---------|---------|---------|
| .d:DK              | 36      | 62      | 15      | 10      |
| .m:Missing         | 1       |         |         |         |
| .n:Non-proxy ivw   | 9988    | 8743    | 9866    | 9182    |
| .r:Refuse          | 10      | 2       | 2       |         |
| .u:Unmar           | 4205    | 4009    | 4782    | 4847    |
| .v:SP NR           | 333     | 131     | 349     | 280     |
| 1.Most of the time | 11      | 16      | 12      | 20      |
| 2.Some of the time | 21      | 37      | 40      | 31      |
| 3.Never            | 581     | 704     | 657     | 409     |

| Value-----         | R1OALCHL | R2OALCHL | R3OALCHL | R4OALCHL |
|--------------------|----------|----------|----------|----------|
| .d:DK              | 56       | 87       | 17       | 15       |
| .m:Missing         | 1        |          |          |          |
| .n:Non-proxy ivw   | 14154    | 12526    | 14448    | 13850    |
| .r:Refuse          | 11       |          | 1        |          |
| 1.Most of the time | 31       | 17       | 28       | 18       |
| 2.Some of the time | 57       | 73       | 43       | 18       |
| 3.Never            | 876      | 1001     | 1186     | 878      |

| Value-----         | S1OALCHL | S2OALCHL | S3OALCHL | S4OALCHL |
|--------------------|----------|----------|----------|----------|
| .d:DK              | 41       | 63       | 12       | 10       |
| .m:Missing         | 1        |          |          |          |
| .n:Non-proxy ivw   | 9988     | 8743     | 9866     | 9182     |
| .r:Refuse          | 8        |          | 1        |          |
| .u:Unmar           | 4205     | 4009     | 4782     | 4847     |
| .v:SP NR           | 333      | 131      | 349      | 280      |
| 1.Most of the time | 24       | 15       | 16       | 9        |
| 2.Some of the time | 39       | 59       | 28       | 10       |
| 3.Never            | 547      | 684      | 669      | 441      |

## How Constructed

RwOANGRY, RwOSLEEP, RwODNGR, RwOPACE, RwOPLOT, and RwOALCHL indicate how often the proxy reports that the respondent exhibited certain problem behaviors during the past week. RwOANGRY indicates how often the respondent became angry or hostile. RwOSLEEP indicates how often the respondent had difficulties falling asleep or waking frequently during the night. RwODNGR indicates how often the respondent did things that are dangerous to themselves or others. RwOPACE indicates how often the respondent paced around or made unexplained rocking movements while sitting. RwOPLOT indicates how often the respondent mentioned that people are plotting against or trying to harm them. RwOALCHL indicates how often the respondent drank too much alcohol. These variables are coded as follows: 1.most of the time, 2.some of the time, 3.never. They are set to special missing value .n for non-proxy interviews. Don't know, refused, or other missing responses are assigned special missing values .d, .r, or .m, respectively. RwOANGRY, RwOSLEEP, RwODNGR, RwOPACE, RwOPLOT, and RwOALCHL are set to plain missing (.) if the respondent did not participate in the current wave.

SwOANGRY, SwOSLEEP, SwODNGR, SwOPACE, SwOPLOT, and SwOALCHL are taken from the Wave 'w' spouse's values for RwOANGRY, RwOSLEEP, RwODNGR, RwOPACE, RwOPLOT, and RwOALCHL, respectively. In addition to the special missing codes used in the respondent variables, if the respondent is not designated as coupled in the

current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

These questions are not asked starting in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS asks comparable questions, but these variables have not yet been made available in the RAND HRS or Harmonized HRS.

## MHAS Variables Used

### Wave 1:

|      |                   |
|------|-------------------|
| PC57 | angry and hostile |
| PC58 | sleeping problems |
| PC59 | reckless          |
| PC60 | paced around      |
| PC61 | psychopathic      |
| PC62 | drinking alcohol  |

### Wave 2:

|      |                   |
|------|-------------------|
| PC57 | angry and hostile |
| PC58 | sleeping problems |
| PC59 | reckless          |
| PC60 | paced around      |
| PC61 | psychopathic      |
| PC62 | drinking alcohol  |

### Wave 3:

|         |   |
|---------|---|
| PC57_12 | During the last week:Report the frequency subject...ang   |
| PC58_12 | During the last week:Report the frequency subject...dif   |
| PC59_12 | During the last week:Frequency subject has...dangerous to |
| PC60_12 | During the last week:Report the frequency subject has p   |
| PC61_12 | During the last week:Report the frequency subject belie   |
| PC62_12 | During the last week:Report the frequency subject drunk   |

### Wave 4:

|         |   |
|---------|---|
| PC57_15 | During the past week: How often has the subject become  |
| PC58_15 | During the past week: How often has the subject had dif |
| PC59_15 | During the past week: How often has the subject done th |
| PC60_15 | During the past week: How often has the subject paced a |
| PC61_15 | During the past week: How often has the subject mention |
| PC62_15 | During the past week: How often has the subject drunk t |

**Section E: Financial and Housing Wealth**

|                             |
|-----------------------------|
| <b>Inflation Multiplier</b> |
|-----------------------------|

| Wave | Variable     | Label                               | Type |
|------|--------------|-------------------------------------|------|
| 1    | C2000CPINDEX | 2000 consumer price index, 2010=100 | Cont |
| 1    | C2001CPINDEX | 2001 consumer price index, 2010=100 | Cont |
| 1    | C2002CPINDEX | 2002 consumer price index, 2010=100 | Cont |
| 1    | C2003CPINDEX | 2003 consumer price index, 2010=100 | Cont |
| 1    | C2011CPINDEX | 2011 consumer price index, 2010=100 | Cont |
| 1    | C2012CPINDEX | 2012 consumer price index, 2010=100 | Cont |
| 1    | C2013CPINDEX | 2013 consumer price index, 2010=100 | Cont |
| 1    | C2014CPINDEX | 2014 consumer price index, 2010=100 | Cont |
| 1    | C2015CPINDEX | 2015 consumer price index, 2010=100 | Cont |
| 1    | C2016CPINDEX | 2016 consumer price index, 2010=100 | Cont |
| 1    | C2017CPINDEX | 2017 consumer price index, 2010=100 | Cont |
| 1    | C2018CPINDEX | 2018 consumer price index, 2010=100 | Cont |
| 1    | C2019CPINDEX | 2019 consumer price index, 2010=100 | Cont |

### Descriptive Statistics

| Variable     | N     | Mean   | Std Dev | Minimum | Maximum |
|--------------|-------|--------|---------|---------|---------|
| C2000CPINDEX | 26839 | 63.30  | 0.00    | 63.30   | 63.30   |
| C2001CPINDEX | 26839 | 67.30  | 0.00    | 67.30   | 67.30   |
| C2002CPINDEX | 26839 | 70.70  | 0.00    | 70.70   | 70.70   |
| C2003CPINDEX | 26839 | 73.90  | 0.00    | 73.90   | 73.90   |
| C2011CPINDEX | 26839 | 103.40 | 0.00    | 103.40  | 103.40  |
| C2012CPINDEX | 26839 | 107.70 | 0.00    | 107.70  | 107.70  |
| C2013CPINDEX | 26839 | 111.80 | 0.00    | 111.80  | 111.80  |
| C2014CPINDEX | 26839 | 116.20 | 0.00    | 116.20  | 116.20  |
| C2015CPINDEX | 26839 | 119.40 | 0.00    | 119.40  | 119.40  |
| C2016CPINDEX | 26839 | 122.80 | 0.00    | 122.80  | 122.80  |
| C2017CPINDEX | 26839 | 130.20 | 0.00    | 130.20  | 130.20  |
| C2018CPINDEX | 26839 | 136.60 | 0.00    | 136.60  | 136.60  |
| C2019CPINDEX | 26839 | 141.50 | 0.00    | 141.50  | 141.50  |

### How Constructed

CyyyyCPINDEX is the annual consumer price index for the year of the survey. CyyyyCPINDEX uses 2010 as its base year so the consumer price index for a survey conducted in 2010 would be 100. This consumer price index can be used as an inflation multiplier when comparing financial values between different survey years.

CyyyyCPINDEX values were provided by the OECD as part of the Consumer Price (MEI) dataset. The index measures monthly changes in the general level of prices of goods and services that households acquire for consumption. For more information on the calculation of the consumer price index see <http://stats.oecd.org>.

### Cross Wave Differences in MHAS

Consumer price index values are not based on any MHAS survey question.

### Differences with the RAND HRS/Harmonized HRS

Consumer price index values are not included in the RAND HRS.

Net Value of Real Estate (Not Primary Residence)

| Wave | Variable | Label                                    | Type  |
|------|----------|--|-------|
| 1    | H1ARLES  | h1arles:w1 assets: other real estate     | Cont  |
| 2    | H2ARLES  | h2arles:w2 assets: other real estate     | Cont  |
| 3    | H3ARLES  | h3arles:w3 assets: other real estate     | Cont  |
| 4    | H4ARLES  | h4arles:w4 assets: other real estate     | Cont  |
| 5    | H5ARLES  | h5arles:w5 assets: other real estate     | Cont  |
| 1    | H1AFRLES | h1afrles:w1 asst flag: other real estate | Categ |
| 2    | H2AFRLES | h2afrles:w2 asst flag: other real estate | Categ |
| 3    | H3AFRLES | h3afrles:w3 asst flag: other real estate | Categ |
| 4    | H4AFRLES | h4afrles:w4 asst flag: other real estate | Categ |
| 5    | H5AFRLES | h5afrles:w5 asst flag: other real estate | Categ |

Descriptive Statistics

| Variable | N     | Mean      | Std Dev    | Minimum     | Maximum     |
|----------|-------|-----------|------------|-------------|-------------|
| H1ARLES  | 15636 | 54454.57  | 336888.52  | -261596.31  | 15555548.00 |
| H2ARLES  | 14030 | 61544.64  | 334320.86  | -250000.00  | 12000000.00 |
| H3ARLES  | 15723 | 103540.27 | 484450.07  | -53735.05   | 18140548.00 |
| H4ARLES  | 14911 | 236197.65 | 1856188.45 | -10000.00   | 80000000.00 |
| H5ARLES  | 17306 | 133116.09 | 530469.60  | -1400000.00 | 11000000.00 |
| H1AFRLES | 15696 | 0.05      | 0.23       | -1.00       | 1.00        |
| H2AFRLES | 14063 | 0.05      | 0.22       | -1.00       | 1.00        |
| H3AFRLES | 15723 | 0.07      | 0.25       | 0.00        | 1.00        |
| H4AFRLES | 14945 | 0.04      | 0.22       | -1.00       | 1.00        |
| H5AFRLES | 17326 | 0.07      | 0.25       | -1.00       | 1.00        |

Categorical Variable Codes

| Value-----                       | H1AFRLES | H2AFRLES | H3AFRLES | H4AFRLES | H5AFRLES |
|----------------------------------|----------|----------|----------|----------|----------|
| -1.No Imput:section not complete | 59       | 33       |          | 34       | 20       |
| 0.Not imputed                    | 14801    | 13339    | 14625    | 14205    | 16147    |
| 1.Imputed                        | 836      | 691      | 1098     | 706      | 1159     |

How Constructed

HwARLES captures the net value of other real estate at the household level. In waves 1 to 4, HwARLES includes the net value of a second home, the value of any other real estate property, and the debt on any other real estate property. Starting in Wave 5, HwARLES includes the net value of a second home, the value of the most important other real estate property, and the debt on the most important other real estate property.

At all waves the selected respondent for the couple or the single respondent is asked whether "excluding properties that generate income, are you (or your spouse) owner of another house or condominium, including time shared apartments?". If the respondent answers yes, they are then asked if they were to sell the property and pay off any debt on this property, how much money would it be. This net value of the second home is included in HwARLES.

At all waves the informant for the subject or the couple is also asked whether "excluding your main house or second residence, do you (or your spouse) own any real estate property, such as land, vacant lots and/or properties for rent?". If the respondent answers yes, in waves 1 to 4, the respondent is able to mention up to 2 other properties. Starting at wave 5, the respondent is only asked about their one most important other property. For each reported property the respondent reports, they are asked whether they have any have any outstanding debt on the property and, if they do have debt, they are asked how much they still owe. For each reported property the respondent is also asked "if you were to sell the property now, how much would you receive for it?" The value of each property minus the debt owed on each property is included in HwARLES.

For each question eliciting a value included in HwARLES, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

In the case that the respondent reported neither a second home nor having any other real estate properties, HwARLES has a value of 0.

HwARLES is derived at the household level. In MHAS this is a couple or a single person. Special missing .m is used if at least one component of HwARLES was not imputed because the respondent did not complete the section. HwARLES is set to blank missing (.) if the respondent did not participate in the current wave.

HwAFRLES is a flag variable indicating whether or not any component of HwARLES was imputed. A code of 0 indicates that no component of HwARLES was imputed. A code of 1 indicates that at least one component of HwARLES was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

## Cross Wave Differences in MHAS

In waves 1 to 4, MHAS allows the respondent to report up to two other real estate properties and records their values and the debts on them. Starting in Wave 5, MHAS asked the respondent to report only the one most important other real estate property and records its value and the debts on it. Therefore starting at Wave 5, HwARLES does not include the value of any second other real estate property like it did from waves 1 to 4.

## Differences with the RAND HRS/Harmonized HRS

HwARLES in the RAND HRS does not include the value of the second home. In the RAND HRS, the value of the second home is captured in HwANETHB. In the Harmonized MHAS, HwARLES includes both the value of other real estate and the value of second home.

There are differences in the questions about other real estate properties. In the HRS the net value of other real estate properties is asked in a single question. In the MHAS, one question is asked about the value and one question is asked about any debt on the other real estate property, for each property (up to 2 properties).

There are differences in the questions about the second home. In the HRS, one question is asked about the value and another question is asked about any debt on the second home. In the MHAS, a single question is asked about the net value of the second home.

Net value of other real estate in MHAS is measured in nominal pesos, whereas the equivalent measures in RAND HRS are in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

## MHAS Variables Used

Wave 1:

|           |  |
|-----------|--|
| IMAMJ26   | net value other houses/apartments (imputed)          |
| IMAMK17_1 | total debt other real estate properties_1 (imputed)  |
| IMAMK17_2 | total debt other real estate properties_2 (imputed)  |
| IMAMK22_1 | gross value other real estate properties_1 (imputed) |
| IMAMK22_2 | gross value other real estate properties_2 (imputed) |
| J26IMP    | if imputed value                                     |
| K17_1IMP  | if imputed value                                     |
| K17_2IMP  | if imputed value                                     |
| K22_1IMP  | if imputed value                                     |
| K22_2IMP  | if imputed value                                     |

Wave 2:



|              |   |
|--------------|---|
| IMAMJ33      | net value other houses/apartments (imputed)             |
| IMAMK19_1    | total debt other real estate properties_1 (imputed)     |
| IMAMK19_2    | total debt other real estate properties_2 (imputed)     |
| IMAMK24_1    | gross value other real estate properties_1 (imputed)    |
| IMAMK24_2    | gross value other real estate properties_2 (imputed)    |
| J33IMP       | if imputed value  |
| K19_1IMP     | if imputed value  |
| K19_2IMP     | if imputed value  |
| K24_1IMP     | if imputed value  |
| K24_2IMP     | if imputed value  |
| Wave 3:      |   |
| IMAMJ34_12   |   |
| IMAMK20_1_12 | Total debt other real estate properties_1 (imputed)     |
| IMAMK20_2_12 | Total debt other real estate properties_2 (imputed)     |
| IMAMK24_1_12 | Gross value other real estate properties_1 (imputed)    |
| IMAMK24_2_12 | Gross value other real estate properties_2 (imputed)    |
| J34_IMP_12   |   |
| K20_1_IMP_12 | Total debt other real estate properties_1 (Flag if impu |
| K20_2_IMP_12 | Total debt other real estate properties_2 (Flag if impu |
| K24_1_IMP_12 | Gross value other real estate properties_1 (Flag if imp |
| K24_2_IMP_12 | Gross value other real estate properties_2 (Flag if imp |
| Wave 4:      |   |
| IMAMJ34_15   | Net value other houses/apartments (imputed)             |
| IMAMK20_1_15 | Total debt other real estate properties_1 (imputed)     |
| IMAMK20_2_15 | Total debt other real estate properties_2 (imputed)     |
| IMAMK24_1_15 | Gross value other real estate properties_1 (imputed)    |
| IMAMK24_2_15 | Gross value other real estate properties_2 (imputed)    |
| J34_IMP_15   | Net value other houses/apartments (Flag if imputed valu |
| K20_1_IMP_15 | Total debt other real estate properties_1 (Flag if impu |
| K20_2_IMP_15 | Total debt other real estate properties_2 (Flag if impu |
| K24_1_IMP_15 | Gross value other real estate properties_1 (Flag if imp |
| K24_2_IMP_15 | Gross value other real estate properties_2 (Flag if imp |
| Wave 5:      |   |
| IMAMJ34_18   | Net value other houses/apartments (imputed)             |
| IMAMK20_1_18 | Total debt other real estate properties (imputed)       |
| IMAMK24_1_18 | Gross value other real estate properties (imputed)      |
| J34_IMP_18   | Net value other houses/apartments (Flag if imputed valu |
| K20_1_IMP_18 | Total debt other real estate properties (Flag if impute |
| K24_1_IMP_18 | Gross value other real estate properties (Flag if imput |

|                          |
|--------------------------|
| <b>Net Value of Cars</b> |
|--------------------------|

| Wave | Variable | Label                           | Type  |
|------|----------|---------------------------------|-------|
| 1    | H1ATRAN  | h1atran:w1 assets: vehicles     | Cont  |
| 2    | H2ATRAN  | h2atran:w2 assets: vehicles     | Cont  |
| 3    | H3ATRAN  | h3atran:w3 assets: vehicles     | Cont  |
| 4    | H4ATRAN  | h4atran:w4 assets: vehicles     | Cont  |
| 5    | H5ATRAN  | h5atran:w5 assets: vehicles     | Cont  |
| 1    | H1AFTRAN | h1aftran:w1 asst flag: vehicles | Categ |
| 2    | H2AFTRAN | h2aftran:w2 asst flag: vehicles | Categ |
| 3    | H3AFTRAN | h3aftran:w3 asst flag: vehicles | Categ |
| 4    | H4AFTRAN | h4aftran:w4 asst flag: vehicles | Categ |
| 5    | H5AFTRAN | h5aftran:w5 asst flag: vehicles | Categ |

### Descriptive Statistics

| Variable | N     | Mean     | Std Dev   | Minimum    | Maximum    |
|----------|-------|----------|-----------|------------|------------|
| H1ATRAN  | 15636 | 18193.60 | 67325.42  | -115205.05 | 3000000.00 |
| H2ATRAN  | 14032 | 17026.21 | 61103.75  | -75598.20  | 2500000.00 |
| H3ATRAN  | 15723 | 34134.90 | 152466.07 | -236884.63 | 6150000.00 |
| H4ATRAN  | 14911 | 31214.34 | 150331.08 | -499247.13 | 9000000.00 |
| H5ATRAN  | 17306 | 32901.44 | 128096.48 | -414724.56 | 6000000.00 |
| H1AFTRAN | 15695 | 0.04     | 0.22      | -1.00      | 1.00       |
| H2AFTRAN | 14063 | 0.03     | 0.19      | -1.00      | 1.00       |
| H3AFTRAN | 15723 | 0.07     | 0.26      | 0.00       | 1.00       |
| H4AFTRAN | 14945 | 0.05     | 0.22      | -1.00      | 1.00       |
| H5AFTRAN | 17326 | 0.06     | 0.24      | -1.00      | 1.00       |

### Categorical Variable Codes

| Value-----                       | H1AFTRAN | H2AFTRAN | H3AFTRAN | H4AFTRAN | H5AFTRAN |
|----------------------------------|----------|----------|----------|----------|----------|
| -1.No Imput:section not complete | 59       | 31       |          | 34       | 20       |
| 0.Not imputed                    | 14875    | 13527    | 14571    | 14179    | 16236    |
| 1.Imputed                        | 761      | 505      | 1152     | 732      | 1070     |

### How Constructed

HwATRAN captures the net value of vehicles at the household level. HwATRAN includes the value of any means of transportation and the debt on any means of transportation.

The informant for the subject or the couple is asked "are you (or your spouse) owner of any means of transportation for private or recreational use". If the respondent answers yes, they are then asked if they have any outstanding debt on these means of transportation. If they do have debt, they are asked how much they still owe. All respondents who report owning any means of transportation are also asked "if you were to sell them, about how much money would you receive?". HwATRAN is derived as the value minus the debt owed on any means of transportation.

For both questions eliciting a value included in HwATRAN, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.mhasweb.org](http://www.mhasweb.org) for more details on the imputation method used, variables imputed, and covariates included.

In the case that the respondent reported not owning any means of transportation, HwATRAN has a value of 0.

HwATRAN is derived at the household level. In MHAS this is a couple or a single person. Special missing .m is used if at least one component of HwATRAN was not imputed because the respondent did not complete the section. HwATRAN is set to blank missing (.) if the respondent did not participate in the current wave.

HwAFTRAN is a flag variable indicating whether or not any component of HwATRAN was imputed. A code of 0 indicates that no component of HwATRAN was imputed. A code of 1 indicates that at least one component of HwATRAN was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

There are differences in the questions about vehicles. In the HRS the net value of vehicles is asked in a single question. In the MHAS, one question is asked about the value and one question is asked about any debt.

Net value of vehicles in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

## MHAS Variables Used

### Wave 1:

|         |                                |
|---------|--------------------------------|
| IMAMK36 | gross value vehicles (imputed) |
| IMAMK37 | total debt vehicles (imputed)  |
| K36IMP  | if imputed value               |
| K37IMP  | if imputed value               |

### Wave 2:

|         |                                |
|---------|--------------------------------|
| IMAMK38 | gross value vehicles (imputed) |
| IMAMK39 | total debt vehicles (imputed)  |
| K38IMP  | if imputed value               |
| K39IMP  | if imputed value               |

### Wave 3:

|            |  |
|------------|--|
| IMAMK40_12 | Total debt vehicles (imputed)                |
| IMAMK42_12 | Gross value vehicles (imputed)               |
| K40_IMP_12 | Total debt vehicles (Flag if imputed value)  |
| K42_IMP_12 | Gross value vehicles (Flag if imputed value) |

### Wave 4:

|            |  |
|------------|--|
| IMAMK40_15 | Total debt vehicles (imputed)                |
| IMAMK42_15 | Gross value vehicles (imputed)               |
| K40_IMP_15 | Total debt vehicles (Flag if imputed value)  |
| K42_IMP_15 | Gross value vehicles (Flag if imputed value) |

### Wave 5:

|            |  |
|------------|--|
| IMAMK40_18 | Total debt vehicles (imputed)                |
| IMAMK42_18 | Gross value vehicles (imputed)               |
| K40_IMP_18 | Total debt vehicles (Flag if imputed value)  |
| K42_IMP_18 | Gross value vehicles (Flag if imputed value) |

|                                |
|--------------------------------|
| <b>Net Value of Businesses</b> |
|--------------------------------|

| Wave | Variable | Label                           | Type  |
|------|----------|---------------------------------|-------|
| 1    | H1ABSNS  | h1absns:w1 assets: business     | Cont  |
| 2    | H2ABSNS  | h2absns:w2 assets: business     | Cont  |
| 3    | H3ABSNS  | h3absns:w3 assets: business     | Cont  |
| 4    | H4ABSNS  | h4absns:w4 assets: business     | Cont  |
| 5    | H5ABSNS  | h5absns:w5 assets: business     | Cont  |
| 1    | H1AFBSNS | h1afbsns:w1 asst flag: business | Categ |
| 2    | H2AFBSNS | h2afbsns:w2 asst flag: business | Categ |
| 3    | H3AFBSNS | h3afbsns:w3 asst flag: business | Categ |
| 4    | H4AFBSNS | h4afbsns:w4 asst flag: business | Categ |
| 5    | H5AFBSNS | h5afbsns:w5 asst flag: business | Categ |

### Descriptive Statistics

| Variable | N     | Mean      | Std Dev    | Minimum     | Maximum     |
|----------|-------|-----------|------------|-------------|-------------|
| H1ABSNS  | 15636 | 66694.59  | 330075.00  | -777776.00  | 12452776.00 |
| H2ABSNS  | 14032 | 74024.08  | 365321.03  | -999980.00  | 10944902.00 |
| H3ABSNS  | 15723 | 76181.10  | 407001.68  | -2981432.25 | 10000000.00 |
| H4ABSNS  | 14911 | 230908.12 | 1808014.88 | -440000.00  | 70000000.00 |
| H5ABSNS  | 17306 | 84307.38  | 438932.03  | -794476.38  | 9000000.00  |
| H1AFBSNS | 15695 | 0.11      | 0.33       | -1.00       | 1.00        |
| H2AFBSNS | 14063 | 0.12      | 0.33       | -1.00       | 1.00        |
| H3AFBSNS | 15723 | 0.07      | 0.25       | 0.00        | 1.00        |
| H4AFBSNS | 14945 | 0.07      | 0.26       | -1.00       | 1.00        |
| H5AFBSNS | 17326 | 0.07      | 0.26       | -1.00       | 1.00        |

### Categorical Variable Codes

| Value-----                       | H1AFBSNS | H2AFBSNS | H3AFBSNS | H4AFBSNS | H5AFBSNS |
|----------------------------------|----------|----------|----------|----------|----------|
| -1.No Imput:section not complete | 59       | 31       |          | 34       | 20       |
| 0.Not imputed                    | 13804    | 12336    | 14629    | 13902    | 16116    |
| 1.Imputed                        | 1832     | 1696     | 1094     | 1009     | 1190     |

### How Constructed

HwABSNS captures the net value of businesses at the household level. HwABSNS includes the value of any businesses or farms and the debt on any businesses or farms.

The informant for the subject or the couple is asked "Do you (and/or spouse) own a business or farm?". The respondent is able to mention up to 2 other businesses/farms. If the respondent reported having 1 or more businesses/farms, they are then asked for each business/farm (up to 2 businesses/farms) if they have any outstanding debt on this business/farm. If they do have debt, they are asked how much they still owe. All respondents who report having 1 or more businesses/farms are then asked, for each business/farm (up to 2 businesses/farms) "If you were to sell your business now, how much would you (or your spouse) receive for it?". The value of each business/farm minus the debt owed on each business/farm is included in HwABSNS.

For each question eliciting a value included in HwABSNS, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

In the case that the respondent reported not owning any business or farm, HwABSNS has a value of 0.

HwABSNS is derived at the household level. In MHAS this is a couple or a single person. Special missing .m is used if at least one component of HwABSNS was not imputed because the respondent did not complete the section. HwABSNS is set to blank missing (.) if the respondent did not participate in the current wave.

HwAFBSNS is a flag variable indicating whether or not any component of HwABSNS was imputed. A code of 0 indicates that no component of HwABSNS was imputed. A code of 1 indicates that at least one component of HwABSNS was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

There are differences in the questions about businesses/farms. In the HRS the net value of businesses/farms is asked in a single question. In the MHAS, one question is asked about the value and one question is asked about any debt on the business/farm, for each business/farm (up to 2 businesses/farms).

Net value of business in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

## MHAS Variables Used

### Wave 1:

|          |                                  |
|----------|----------------------------------|
| IMAMK3_1 | total debt business_1 (imputed)  |
| IMAMK3_2 | total debt business_2 (imputed)  |
| IMAMK8_1 | gross value business_1 (imputed) |
| IMAMK8_2 | gross value business_2 (imputed) |
| K3_1IMP  | if imputed value                 |
| K3_2IMP  | if imputed value                 |
| K8_1IMP  | if imputed value                 |
| K8_2IMP  | if imputed value                 |

### Wave 2:

|          |                                  |
|----------|----------------------------------|
| IMAMK3_1 | total debt business_1 (imputed)  |
| IMAMK3_2 | total debt business_2 (imputed)  |
| IMAMK8_1 | gross value business_1 (imputed) |
| IMAMK8_2 | gross value business_2 (imputed) |
| K3_1IMP  | if imputed value                 |
| K3_2IMP  | if imputed value                 |
| K8_1IMP  | if imputed value                 |
| K8_2IMP  | if imputed value                 |

### Wave 3:

|             |  |
|-------------|--|
| IMAMK4_1_12 | Total debt business_1 (imputed)                |
| IMAMK4_2_12 | Total debt business_2 (imputed)                |
| IMAMK8_1_12 | Gross value business_1 (imputed)               |
| IMAMK8_2_12 | Gross value business_2 (imputed)               |
| K4_1_IMP_12 | Total debt business_1 (Flag if imputed value)  |
| K4_2_IMP_12 | Total debt business_2 (Flag if imputed value)  |
| K8_1_IMP_12 | Gross value business_1 (Flag if imputed value) |
| K8_2_IMP_12 | Gross value business_2 (Flag if imputed value) |

### Wave 4:

|             |  |
|-------------|--|
| IMAMK4_1_15 | Total debt business_1 (imputed)                |
| IMAMK4_2_15 | Total debt business_2 (imputed)                |
| IMAMK8_1_15 | Gross value business_1 (imputed)               |
| IMAMK8_2_15 | Gross value business_2 (imputed)               |
| K4_1_IMP_15 | Total debt business_1 (Flag if imputed value)  |
| K4_2_IMP_15 | Total debt business_2 (Flag if imputed value)  |
| K8_1_IMP_15 | Gross value business_1 (Flag if imputed value) |

|             |  |
|-------------|--|
| K8_2_IMP_15 | Gross value business_2 (Flag if imputed value) |
| Wave 5:     |  |
| IMAMK4_1_18 | Total debt business_1 (imputed)                |
| IMAMK4_2_18 | Total debt business_2 (imputed)                |
| IMAMK8_1_18 | Gross value business_1 (imputed)               |
| IMAMK8_2_18 | Gross value business_2 (imputed)               |
| K4_1_IMP_18 | Total debt business_1 (Flag if imputed value)  |
| K4_2_IMP_18 | Total debt business_2 (Flag if imputed value)  |
| K8_1_IMP_18 | Gross value business_1 (Flag if imputed value) |
| K8_2_IMP_18 | Gross value business_2 (Flag if imputed value) |

|   |
|---|
| <b>Value of Stocks, Shares, and Bonds</b> |
|---|

| Wave | Variable  | Label                                    | Type  |
|------|-----------|--|-------|
| 1    | H1ABDSTK  | h1abdstk:w1 assets: bonds and stocks     | Cont  |
| 2    | H2ABDSTK  | h2abdstk:w2 assets: bonds and stocks     | Cont  |
| 3    | H3ABDSTK  | h3abdstk:w3 assets: bonds and stocks     | Cont  |
| 4    | H4ABDSTK  | h4abdstk:w4 assets: bonds and stocks     | Cont  |
| 5    | H5ABDSTK  | h5abdstk:w5 assets: bonds and stocks     | Cont  |
| 1    | H1AFBDSTK | h1afbdstk:w1 asst flag: bonds and stocks | Categ |
| 2    | H2AFBDSTK | h2afbdstk:w2 asst flag: bonds and stocks | Categ |
| 3    | H3AFBDSTK | h3afbdstk:w3 asst flag: bonds and stocks | Categ |
| 4    | H4AFBDSTK | h4afbdstk:w4 asst flag: bonds and stocks | Categ |
| 5    | H5AFBDSTK | h5afbdstk:w5 asst flag: bonds and stocks | Categ |

### Descriptive Statistics

| Variable  | N     | Mean     | Std Dev   | Minimum | Maximum     |
|-----------|-------|----------|-----------|---------|-------------|
| H1ABDSTK  | 15636 | 166.27   | 5963.00   | 0.00    | 600000.00   |
| H2ABDSTK  | 14032 | 719.16   | 22992.38  | 0.00    | 1000000.00  |
| H3ABDSTK  | 15723 | 1560.39  | 46639.88  | 0.00    | 1500000.00  |
| H4ABDSTK  | 14911 | 10264.52 | 436066.37 | 0.00    | 35000000.00 |
| H5ABDSTK  | 17306 | 5240.00  | 157670.01 | 0.00    | 5000000.00  |
| H1AFBDSTK | 15695 | -0.00    | 0.07      | -1.00   | 1.00        |
| H2AFBDSTK | 14063 | -0.00    | 0.06      | -1.00   | 1.00        |
| H3AFBDSTK | 15723 | 0.01     | 0.08      | 0.00    | 1.00        |
| H4AFBDSTK | 14945 | 0.00     | 0.09      | -1.00   | 1.00        |
| H5AFBDSTK | 17326 | 0.00     | 0.07      | -1.00   | 1.00        |

### Categorical Variable Codes

| Value-----                       | H1AFBDSTK | H2AFBDSTK | H3AFBDSTK | H4AFBDSTK | H5AFBDSTK |
|----------------------------------|-----------|-----------|-----------|-----------|-----------|
| -1.No Imput:section not complete | 59        | 31        |           | 34        | 20        |
| 0.Not imputed                    | 15617     | 14020     | 15632     | 14820     | 17252     |
| 1.Imputed                        | 19        | 12        | 91        | 91        | 54        |

### How Constructed

HwABDSTK captures the value of stocks, shares, and bonds at the household level. HwABDSTK includes the value of any stocks, company share, or bonds.

The informant for the subject or the couple is asked "Do you (and/or your spouse) have stocks, company shares or bonds?". If the respondent answers yes, they are then asked if "Adding up all these accounts, what is the approximate total value?". HwABDSTK captures this reported value of stocks, shares, and bonds.

For the question eliciting a value used in HwABDSTK, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackPlease see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

In the case that the respondent reported not having any stocks, shares, or bonds, HwABDSTK has a value of 0.

HwABDSTK is derived at the household level. In MHAS this is a couple or a single person. Special missing .m is used if at least one component of HwABDSTK was not imputed because the respondent did not complete the section. HwABDSTK is set to blank missing (.) if the respondent did not participate in the current wave.

HwAFBDSTK is a flag variable indicating whether or not any component of HwABDSTK was imputed. A code of 0 indicates that no component of HwABDSTK was imputed. A code of 1 indicates that at least one component of HwABDSTK was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

HwABDSTK is a summary variable, which is specific to MHAS, and is not available in the RAND HRS. In the RAND HRS, the value of shares of stock or stock mutual funds is captured in HwASTCK, the value of CDs, government savings bonds, and treasures bills is captured in HwACD, the net value of corporate, municipal, government, or foreign bonds, or any bond funds is captured in HwABOND.

The MHAS elicits the value of CD's in the same question as the value of checking and savings accounts, this value is captured in HwACHCK.

The MHAS does not specifically elicit the value of mutual funds though MHAS does ask respondents to report any other assets not specifically asked, this value is captured in HwAOTHR.

Value of stocks, shares, and bonds in MHAS is measured in nominal pesos, whereas the equivalent measures in RAND HRS are in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

MHAS Variables Used

|              |  |
|--------------|--|
| Wave 1:      |  |
| IMAMK29C     | net capital assets_3 (imputed)                     |
| K29CIMP      | if imputed value                                   |
| Wave 2:      |  |
| IMAMK31_3    | net capital assets_3 (imputed)                     |
| K31_3IMP     | if imputed value                                   |
| Wave 3:      |  |
| IMAMK33_3_12 | Net value capital assets_3 (imputed)               |
| K33_3_IMP_12 | Net value capital assets_3 (Flag if imputed value) |
| Wave 4:      |  |
| IMAMK33_3_15 | Net value capital assets_3 (imputed)               |
| K33_3_IMP_15 | Net value capital assets_3 (Flag if imputed value) |
| Wave 5:      |  |
| IMAMK33_3_18 | Net value capital assets_3 (imputed)               |
| K33_3_IMP_18 | Net value capital assets_3 (Flag if imputed value) |



|  |
|--|
| <b>Value of Checking, Savings Accounts</b> |
|--|

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | H1ACHCK  | h1achck:w1 assets: checking,savings acct     | Cont  |
| 2    | H2ACHCK  | h2achck:w2 assets: checking,savings acct     | Cont  |
| 3    | H3ACHCK  | h3achck:w3 assets: checking,savings acct     | Cont  |
| 4    | H4ACHCK  | h4achck:w4 assets: checking,savings acct     | Cont  |
| 5    | H5ACHCK  | h5achck:w5 assets: checking,savings acct     | Cont  |
| 1    | H1AFCHCK | h1afchck:w1 asst flag: checking,savings acct | Categ |
| 2    | H2AFCHCK | h2afchck:w2 asst flag: checking,savings acct | Categ |
| 3    | H3AFCHCK | h3afchck:w3 asst flag: checking,savings acct | Categ |
| 4    | H4AFCHCK | h4afchck:w4 asst flag: checking,savings acct | Categ |
| 5    | H5AFCHCK | h5afchck:w5 asst flag: checking,savings acct | Categ |

### Descriptive Statistics

| Variable | N     | Mean     | Std Dev   | Minimum | Maximum     |
|----------|-------|----------|-----------|---------|-------------|
| H1ACHCK  | 15636 | 6687.66  | 36834.36  | 0.00    | 777776.00   |
| H2ACHCK  | 14032 | 25572.37 | 199587.49 | 0.00    | 7777776.00  |
| H3ACHCK  | 15723 | 12378.21 | 125786.38 | 0.00    | 5000000.00  |
| H4ACHCK  | 14911 | 22870.65 | 241273.12 | 0.00    | 10000000.00 |
| H5ACHCK  | 17306 | 12468.55 | 111553.36 | 0.00    | 8000000.00  |
| H1AFCHCK | 15695 | 0.03     | 0.19      | -1.00   | 1.00        |
| H2AFCHCK | 14063 | 0.02     | 0.16      | -1.00   | 1.00        |
| H3AFCHCK | 15723 | 0.03     | 0.18      | 0.00    | 1.00        |
| H4AFCHCK | 14945 | 0.02     | 0.17      | -1.00   | 1.00        |
| H5AFCHCK | 17326 | 0.03     | 0.17      | -1.00   | 1.00        |

### Categorical Variable Codes

| Value-----                       | H1AFCHCK | H2AFCHCK | H3AFCHCK | H4AFCHCK | H5AFCHCK |
|----------------------------------|----------|----------|----------|----------|----------|
| -1.No Imput:section not complete | 59       | 31       |          | 34       | 20       |
| 0.Not imputed                    | 15114    | 13678    | 15216    | 14525    | 16837    |
| 1.Imputed                        | 522      | 354      | 507      | 386      | 469      |

### How Constructed

HwACHCK captures the value of checking or savings account or fixed investment at the household level. HwACHCK includes the value of any checking or savings account or fixed investment.

The informant for the subject or the couple is asked "Do you (and/or your spouse) have checking or saving accounts, or fixed investment?". If the respondent answers yes, they are then asked if "Adding up all these accounts, what is the approximate total value?". HwACHCK captures this reported value of checking or savings account or fixed investment.

For the question eliciting a value used in HwACHCK, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

In the case that the respondent reported not having any checking or savings account or fixed investment, HwACHCK has a value of 0.

HwACHCK is derived at the household level. In MHAS this is a couple or a single person. Special missing .m is used if at least one component of HwACHCK was not imputed because the respondent did not complete

the section. HwACHCK is set to blank missing (.) if the respondent did not participate in the current wave.

HwAFCHCK is a flag variable indicating whether or not any component of HwACHCK was imputed. A code of 0 indicates that no component of HwACHCK was imputed. A code of 1 indicates that at least one component of HwACHCK was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

In the HRS, respondents are asked the value of checking, savings, or money market funds. In the MHAS, respondents are asked the value of checking, savings, and fixed investments. In the RAND HRS, fixed investments in the form of CDs are captured in HwACD.

The MHAS does not specifically elicit the value of money market funds though MHAS does ask respondents to report any other assets not specifically asked, this value is captured in HwAOTHR.

Net value of checking and savings account in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

MHAS Variables Used

|              |  |  |
|--------------|--|--|
| Wave 1:      |  |  |
| IMAMK29A     | net capital assets_1 (imputed)                     |  |
| K29AIMP      | if imputed value                                   |  |
| Wave 2:      |  |  |
| IMAMK31_1    | net capital assets_1 (imputed)                     |  |
| K31_1IMP     | if imputed value                                   |  |
| Wave 3:      |  |  |
| IMAMK33_1_12 | Net value capital assets_1 (imputed)               |  |
| K33_1_IMP_12 | Net value capital assets_1 (Flag if imputed value) |  |
| Wave 4:      |  |  |
| IMAMK33_1_15 | Net value capital assets_1 (imputed)               |  |
| K33_1_IMP_15 | Net value capital assets_1 (Flag if imputed value) |  |
| Wave 5:      |  |  |
| IMAMK33_1_18 | Net value capital assets_1 (imputed)               |  |
| K33_1_IMP_18 | Net value capital assets_1 (Flag if imputed value) |  |

|                              |
|------------------------------|
| <b>Value of Other Assets</b> |
|------------------------------|

| Wave | Variable | Label                               | Type  |
|------|----------|-------------------------------------|-------|
| 1    | H1AOTHR  | h1aothr:w1 assets: other assets     | Cont  |
| 2    | H2AOTHR  | h2aothr:w2 assets: other assets     | Cont  |
| 3    | H3AOTHR  | h3aothr:w3 assets: other assets     | Cont  |
| 4    | H4AOTHR  | h4aothr:w4 assets: other assets     | Cont  |
| 5    | H5AOTHR  | h5aothr:w5 assets: other assets     | Cont  |
| 1    | H1AFOTHR | h1afothr:w1 asst flag: other assets | Categ |
| 2    | H2AFOTHR | h2afothr:w2 asst flag: other assets | Categ |
| 3    | H3AFOTHR | h3afothr:w3 asst flag: other assets | Categ |
| 4    | H4AFOTHR | h4afothr:w4 asst flag: other assets | Categ |
| 5    | H5AFOTHR | h5afothr:w5 asst flag: other assets | Categ |

### Descriptive Statistics

| Variable | N     | Mean      | Std Dev   | Minimum | Maximum    |
|----------|-------|-----------|-----------|---------|------------|
| H1AOTHR  | 15636 | 48759.01  | 155225.25 | 0.00    | 7000000.00 |
| H2AOTHR  | 14032 | 42499.68  | 140978.47 | 0.00    | 5000000.00 |
| H3AOTHR  | 15723 | 113818.13 | 375923.99 | 0.00    | 9000000.00 |
| H4AOTHR  | 14911 | 92546.07  | 286835.82 | 0.00    | 8000000.00 |
| H5AOTHR  | 17306 | 135532.37 | 405799.23 | 0.00    | 9000000.00 |
| H1AFOTHR | 15695 | 0.25      | 0.44      | -1.00   | 1.00       |
| H2AFOTHR | 14063 | 0.23      | 0.43      | -1.00   | 1.00       |
| H3AFOTHR | 15723 | 0.30      | 0.46      | 0.00    | 1.00       |
| H4AFOTHR | 14945 | 0.23      | 0.42      | -1.00   | 1.00       |
| H5AFOTHR | 17326 | 0.24      | 0.43      | -1.00   | 1.00       |

### Categorical Variable Codes

| Value-----                       | H1AFOTHR | H2AFOTHR | H3AFOTHR | H4AFOTHR | H5AFOTHR |
|----------------------------------|----------|----------|----------|----------|----------|
| -1.No Imput:section not complete | 59       | 31       |          | 34       | 20       |
| 0.Not imputed                    | 11717    | 10749    | 11004    | 11486    | 13188    |
| 1.Imputed                        | 3919     | 3283     | 4719     | 3425     | 4118     |

### How Constructed

HwAOTHR captures the value of other assets at the household level. HwAOTHR includes the value of all assets not already mentioned.

The informant for the subject or the couple is asked "In case of a family emergency in which you had to sell all the assets you have not mentioned, about how much money would you receive?". HwAOTHR captures this reported value of all assets not already mentioned.

For the question eliciting a value used in HwAOTHR, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

HwAOTHR is derived at the household level. In MHAS this is a couple or a single person. Special missing .m is used if at least one component of HwAOTHR was not imputed because the respondent did not complete the section. HwAOTHR is set to blank missing (.) if the respondent did not participate in the current wave.

HwAFOTHR is a flag variable indicating whether or not any component of HwAOTHR was imputed. A code of 0 indicates that no component of HwAOTHR was imputed. A code of 1 indicates that at least one component of HwAOTHR was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

In the HRS, respondents are asked to report the value of "any other savings or assets, such as jewelry, money owed to you by others, a collection for investment purposes, rights in a trust or estate where you are the beneficiary, or an annuity that you haven't already told me about? [EXCLUDE THE CASH VALUE OF ANY LIFE INSURANCE POLICIES.]". In the MHAS, respondents are asked to report the value they would receive "In case of a family emergency in which you had to sell all the assets you have not mentioned". This difference implies that what is captured in HwAOTHR in the Harmonized MHAS might differ conceptually from what is captured by HwAOTHR in the RAND HRS.

Value of other assets in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

MHAS Variables Used

|            |  |
|------------|--|
| Wave 1:    |  |
| IMAMK42    | net value other assets (imputed)               |
| K42IMP     | if imputed value                               |
| Wave 2:    |  |
| IMAMK44    | net value other assets (imputed)               |
| K44IMP     | if imputed value                               |
| Wave 3:    |  |
| IMAMK44_12 | Net value other assets (imputed)               |
| K44_IMP_12 | Net value other assets (Flag if imputed value) |
| Wave 4:    |  |
| IMAMK44_15 | Net value other assets (imputed)               |
| K44_IMP_15 | Net value other assets (Flag if imputed value) |
| Wave 5:    |  |
| IMAMK44_18 | Net value other assets (imputed)               |
| K44_IMP_18 | Net value other assets (Flag if imputed value) |

|                                   |
|-----------------------------------|
| <b>Value of Primary Residence</b> |
|-----------------------------------|

| Wave | Variable | Label                                     | Type  |
|------|----------|---|-------|
| 1    | H1AHOUS  | h1ahous:w1 value of house/prim res        | Cont  |
| 2    | H2AHOUS  | h2ahous:w2 value of house/prim res        | Cont  |
| 3    | H3AHOUS  | h3ahous:w3 value of house/prim res        | Cont  |
| 4    | H4AHOUS  | h4ahous:w4 value of house/prim res        | Cont  |
| 5    | H5AHOUS  | h5ahous:w5 value of house/prim res        | Cont  |
| 1    | H1AFHOUS | h1afhous:w1 flag: value of house/prim res | Categ |
| 2    | H2AFHOUS | h2afhous:w2 flag: value of house/prim res | Categ |
| 3    | H3AFHOUS | h3afhous:w3 flag: value of house/prim res | Categ |
| 4    | H4AFHOUS | h4afhous:w4 flag: value of house/prim res | Categ |
| 5    | H5AFHOUS | h5afhous:w5 flag: value of house/prim res | Categ |

### Descriptive Statistics

| Variable | N     | Mean      | Std Dev    | Minimum | Maximum     |
|----------|-------|-----------|------------|---------|-------------|
| H1AHOUS  | 15644 | 205048.74 | 328285.42  | 0.00    | 7777776.00  |
| H2AHOUS  | 14035 | 255614.21 | 377413.16  | 0.00    | 7777776.00  |
| H3AHOUS  | 15723 | 546615.33 | 751852.54  | 0.00    | 9000000.00  |
| H4AHOUS  | 14911 | 921868.10 | 1871874.56 | 0.00    | 40000000.00 |
| H5AHOUS  | 17306 | 647216.12 | 809818.93  | 0.00    | 9800000.00  |
| H1AFHOUS | 15697 | 0.29      | 0.46       | -1.00   | 1.00        |
| H2AFHOUS | 14064 | 0.31      | 0.47       | -1.00   | 1.00        |
| H3AFHOUS | 15723 | 0.41      | 0.49       | 0.00    | 1.00        |
| H4AFHOUS | 14945 | 0.30      | 0.46       | -1.00   | 1.00        |
| H5AFHOUS | 17326 | 0.36      | 0.48       | -1.00   | 1.00        |

### Categorical Variable Codes

| Value-----                       | H1AFHOUS | H2AFHOUS | H3AFHOUS | H4AFHOUS | H5AFHOUS |
|----------------------------------|----------|----------|----------|----------|----------|
| -1.No Imput:section not complete | 53       | 29       |          | 34       | 20       |
| 0.Not imputed                    | 11092    | 9596     | 9211     | 10426    | 10985    |
| 1.Imputed                        | 4552     | 4439     | 6512     | 4485     | 6321     |

### How Constructed

HwAHOUS captures the value of the primary residence at the household level. HwAHOUS includes the value of the lot and the house of the primary residence.

The informant for the subject or the couple is asked "This house/housing unit is rented, borrowed, your property or currently paying it off, or other?". If the respondent answers that the residence is borrowed, their property or currently paying it off, or other, they are then asked "Whose name appears on the property title?". If the respondent reported that either their, their spouse's names, or a relative's name (or any combination) is on the title of the residence or that there is no title, the respondent is then asked "About how much do you think your property is worth, including the lot and house? Or if it were sold today, about how much money would you receive from its sale?". HwAHOUS captures this reported value of the primary residence.

For the question eliciting a value used in HwAHOUS, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

In the case that the respondent reported that the residence was rented or that the name on the property title was only the name of a non-relative, HwAHOUS has a value of 0.

HwAHOUS is derived at the household level. In MHAS this is a couple or a single person. Special missing .m is used if at least one component of HwAHOUS was not imputed because the respondent did not complete the section. HwAHOUS is set to blank missing (.) if the respondent did not participate in the current wave.

HwAFHOUS is a flag variable indicating whether or not any component of HwAHOUS was imputed. A code of 0 indicates that no component of HwAHOUS was imputed. A code of 1 indicates that at least one component of HwAHOUS was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

In the HRS, respondents are not asked about the names on the property title of the residence and every respondent who reported owning all or part of their residence are asked the value of the residence. In the MHAS, respondents who report that the name on the property title was only the name of a non-relative are not asked the value of the residence.

Value of primary residence in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

MHAS Variables Used

|            |   |
|------------|---|
| Wave 1:    |   |
| IMAMJ14    | gross value houses/apartments (imputed)               |
| J14IMP     | if imputed value                                      |
| Wave 2:    |   |
| IMAMJ31    | gross value houses/apartments (imputed)               |
| J31IMP     | if imputed value                                      |
| Wave 3:    |   |
| IMAMJ31_12 |   |
| J31_IMP_12 |   |
| Wave 4:    |   |
| IMAMJ31_15 | Gross value houses/apartments (imputed)               |
| J31_IMP_15 | Gross value houses/apartments (Flag if imputed value) |
| Wave 5:    |   |
| IMAMJ31_18 | Gross value houses/apartments (imputed)               |
| J31_IMP_18 | Gross value houses/apartments (Flag if imputed value) |

|   |
|---|
| <b>Value of All Mortgages (Primary Residence)</b> |
|---|

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | H1AMORT  | h1amort:w1 value of mortgage/prim res        | Cont  |
| 2    | H2AMORT  | h2amort:w2 value of mortgage/prim res        | Cont  |
| 3    | H3AMORT  | h3amort:w3 value of mortgage/prim res        | Cont  |
| 4    | H4AMORT  | h4amort:w4 value of mortgage/prim res        | Cont  |
| 5    | H5AMORT  | h5amort:w5 value of mortgage/prim res        | Cont  |
| 1    | H1AFMORT | h1afmort:w1 flag: value of mortgage/prim res | Categ |
| 2    | H2AFMORT | h2afmort:w2 flag: value of mortgage/prim res | Categ |
| 3    | H3AFMORT | h3afmort:w3 flag: value of mortgage/prim res | Categ |
| 4    | H4AFMORT | h4afmort:w4 flag: value of mortgage/prim res | Categ |
| 5    | H5AFMORT | h5afmort:w5 flag: value of mortgage/prim res | Categ |

### Descriptive Statistics

| Variable | N     | Mean     | Std Dev   | Minimum | Maximum    |
|----------|-------|----------|-----------|---------|------------|
| H1AMORT  | 15644 | 3424.89  | 32322.20  | 0.00    | 1300000.00 |
| H2AMORT  | 14035 | 3851.03  | 34678.07  | 0.00    | 1500000.00 |
| H3AMORT  | 15723 | 9739.43  | 113558.00 | 0.00    | 4200000.00 |
| H4AMORT  | 14911 | 7599.42  | 52116.17  | 0.00    | 1000000.00 |
| H5AMORT  | 17306 | 16381.70 | 120578.84 | 0.00    | 6000000.00 |
| H1AFMORT | 15697 | 0.02     | 0.16      | -1.00   | 1.00       |
| H2AFMORT | 14064 | 0.01     | 0.14      | -1.00   | 1.00       |
| H3AFMORT | 15723 | 0.01     | 0.12      | 0.00    | 1.00       |
| H4AFMORT | 14945 | 0.01     | 0.11      | -1.00   | 1.00       |
| H5AFMORT | 17326 | 0.02     | 0.15      | -1.00   | 1.00       |

### Categorical Variable Codes

| Value-----                       | H1AFMORT | H2AFMORT | H3AFMORT | H4AFMORT | H5AFMORT |
|----------------------------------|----------|----------|----------|----------|----------|
| -1.No Imput:section not complete | 53       | 29       |          | 34       | 20       |
| 0.Not imputed                    | 15280    | 13801    | 15508    | 14755    | 16946    |
| 1.Imputed                        | 364      | 234      | 215      | 156      | 360      |

### How Constructed

HwAMORT captures the value of mortgages on the primary residence at the household level. HwAMORT includes the value still owed on the residence.

The informant for the subject or the couple is asked "This house/housing unit is rented, borrowed, your property or currently paying it off, or other?". If the respondent answers that the residence is borrowed, their property or currently paying it off, or other, they are then asked "Whose name appears on the property title?". If the respondent reported that either their, their spouse's names, or a relative's name (or any combination) is on the title of the residence or that there is no title, the respondent is then asked "This house is completely paid off, being paid to the bank, being paid to relatives or friends, being paid to the bank and to relatives and friends, "irregular", or being regularized". If the respondent gives any response other than "this house is completely paid off", they are then asked "Including all the mortgages and loans from the bank and/or family and friends, about how much do you pay for your house per month?" If the respondent answers any non-zero value, they are then asked "About how much money do you still owe on your house?". HwAMORT captures this reported value of how much money is still owed on the primary residence.

For the question eliciting a value used in HwAMORT, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study

website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

In the case that the respondent reported that the residence was rented, that the name on the property title was only the name of a non-relative, that the house was completely paid off, or that the respondent does not make any monthly payments on the residence, HwAMORT has a value of 0.

HwAMORT is derived at the household level. In MHAS this is a couple or a single person. Special missing .m is used if at least one component of HwAMORT was not imputed because the respondent did not complete the section. HwAMORT is set to blank missing (.) if the respondent did not participate in the current wave.

HwAFMORT is a flag variable indicating whether or not any component of HwAMORT was imputed. A code of 0 indicates that no component of HwAMORT was imputed. A code of 1 indicates that at least one component of HwAMORT was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

In the HRS, respondents are not asked about the names on the property title of the residence and every respondent who reported owning all or part of their residence are asked the value of the residence. In the MHAS, respondents who report that the name on the property title was only the name of a non-relative are not asked the value of the residence.

Also different, the HRS does not ask respondents whether their residence is completely paid off as does MHAS, instead the HRS asks whether they have a mortgage, land contract, second mortgage, or any other type of loan that uses the property as collateral.

Similarly different from MHAS, if the respondent in the HRS reports having a mortgage but not making any monthly payments, they are still asked the amount of the mortgage.

One more important difference between the MHAS and HRS is that the HRS asks separately about the 1st mortgage, 2nd mortgage and other loans. In MHAS there is one question eliciting the value of everything still owed on the residence.

Value of outstanding primary housing debt in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

MHAS Variables Used

|            |  |
|------------|--|
| Wave 1:    |  |
| IMAMJ20    | total debt houses/apartments (imputed)               |
| J20IMP     | if imputed value                                     |
| Wave 2:    |  |
| IMAMJ28    | total debt houses/apartments (imputed)               |
| J28IMP     | if imputed value                                     |
| Wave 3:    |  |
| IMAMJ28_12 |  |
| J28_IMP_12 |  |
| Wave 4:    |  |
| IMAMJ28_15 | Total debt houses/apartments (imputed)               |
| J28_IMP_15 | Total debt houses/apartments (Flag if imputed value) |
| Wave 5:    |  |
| IMAMJ28_18 | Total debt houses/apartments (imputed)               |
| J28_IMP_18 | Total debt houses/apartments (Flag if imputed value) |



Net Value of Primary Residence

| Wave | Variable | Label   | Type  |
|------|----------|---|-------|
| 1    | H1ATOTH  | h1atoth:w1 net value of house/prim res        | Cont  |
| 2    | H2ATOTH  | h2atoth:w2 net value of house/prim res        | Cont  |
| 3    | H3ATOTH  | h3atoth:w3 net value of house/prim res        | Cont  |
| 4    | H4ATOTH  | h4atoth:w4 net value of house/prim res        | Cont  |
| 5    | H5ATOTH  | h5atoth:w5 net value of house/prim res        | Cont  |
| 1    | H1AFTOTH | h1aftoth:w1 flag: net value of house/prim res | Categ |
| 2    | H2AFTOTH | h2aftoth:w2 flag: net value of house/prim res | Categ |
| 3    | H3AFTOTH | h3aftoth:w3 flag: net value of house/prim res | Categ |
| 4    | H4AFTOTH | h4aftoth:w4 flag: net value of house/prim res | Categ |
| 5    | H5AFTOTH | h5aftoth:w5 flag: net value of house/prim res | Categ |

Descriptive Statistics

| Variable | N     | Mean      | Std Dev    | Minimum     | Maximum     |
|----------|-------|-----------|------------|-------------|-------------|
| H1ATOTH  | 15644 | 201623.85 | 327254.71  | -600000.00  | 7777776.00  |
| H2ATOTH  | 14035 | 251763.18 | 376271.31  | -709489.19  | 7777776.00  |
| H3ATOTH  | 15723 | 536875.90 | 757008.92  | -4100000.00 | 9000000.00  |
| H4ATOTH  | 14911 | 914268.68 | 1869773.82 | -313673.56  | 40000000.00 |
| H5ATOTH  | 17306 | 630834.41 | 811619.82  | -4800000.00 | 9800000.00  |
| H1AFTOTH | 15697 | 0.29      | 0.46       | -1.00       | 1.00        |
| H2AFTOTH | 14064 | 0.32      | 0.47       | -1.00       | 1.00        |
| H3AFTOTH | 15723 | 0.42      | 0.49       | 0.00        | 1.00        |
| H4AFTOTH | 14945 | 0.30      | 0.46       | -1.00       | 1.00        |
| H5AFTOTH | 17326 | 0.37      | 0.49       | -1.00       | 1.00        |

Categorical Variable Codes

| Value-----                       | H1AFTOTH | H2AFTOTH | H3AFTOTH | H4AFTOTH | H5AFTOTH |
|----------------------------------|----------|----------|----------|----------|----------|
| -1.No Imput:section not complete | 53       | 29       |          | 34       | 20       |
| 0.Not imputed                    | 10977    | 9523     | 9123     | 10340    | 10820    |
| 1.Imputed                        | 4667     | 4512     | 6600     | 4571     | 6486     |

How Constructed

HwATOTH captures the household's net value of the primary residence and is based on information from:

Value of the primary residence, as previously described

Value of mortgages on the primary residence, as previously described

HwATOTH is constructed as the sum of the value of the primary residence minus the value of the mortgage on the primary residence: (Value of the primary residence - Value of mortgages on the primary residence). Both components of this variable are constructed at the household level and include imputed values. In MHAS, the household is a couple or a single person. Special missing .m is used if at least one component of HwATOTH was not imputed because the respondent did not complete the section. HwATOTH is set to blank missing (.) if the respondent did not participate in the current wave.

HwAFTOTH is a flag variable based on the original flag variables (previously defined as HwAFHOUS and HwAFMORT), indicating whether or not any component of HwATOTH was imputed. A code of 0 indicates that no component of HwATOTH was imputed. A code of 1 indicates that at least one component of HwATOTH was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

Net value of primary residence in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

MHAS Variables Used

|            |   |
|------------|---|
| Wave 1:    |   |
| IMAMJ14    | gross value houses/apartments (imputed)               |
| IMAMJ20    | total debt houses/apartments (imputed)                |
| J14IMP     | if imputed value                                      |
| J20IMP     | if imputed value                                      |
| Wave 2:    |   |
| IMAMJ28    | total debt houses/apartments (imputed)                |
| IMAMJ31    | gross value houses/apartments (imputed)               |
| J28IMP     | if imputed value                                      |
| J31IMP     | if imputed value                                      |
| Wave 3:    |   |
| IMAMJ28_12 |   |
| IMAMJ31_12 |   |
| J28_IMP_12 |   |
| J31_IMP_12 |   |
| Wave 4:    |   |
| IMAMJ28_15 | Total debt houses/apartments (imputed)                |
| IMAMJ31_15 | Gross value houses/apartments (imputed)               |
| J28_IMP_15 | Total debt houses/apartments (Flag if imputed value)  |
| J31_IMP_15 | Gross value houses/apartments (Flag if imputed value) |
| Wave 5:    |   |
| IMAMJ28_18 | Total debt houses/apartments (imputed)                |
| IMAMJ31_18 | Gross value houses/apartments (imputed)               |
| J28_IMP_18 | Total debt houses/apartments (Flag if imputed value)  |
| J31_IMP_18 | Gross value houses/apartments (Flag if imputed value) |

Home ownership

| Wave | Variable  | Label                       | Type  |
|------|-----------|-----------------------------|-------|
| 1    | H1HOWNRNT | h1hownrnt:w1 home ownership | Categ |
| 2    | H2HOWNRNT | h2hownrnt:w2 home ownership | Categ |
| 3    | H3HOWNRNT | h3hownrnt:w3 home ownership | Categ |
| 4    | H4HOWNRNT | h4hownrnt:w4 home ownership | Categ |
| 5    | H5HOWNRNT | h5hownrnt:w5 home ownership | Categ |

Descriptive Statistics

| Variable  | N     | Mean | Std Dev | Minimum | Maximum |
|-----------|-------|------|---------|---------|---------|
| H1HOWNRNT | 15631 | 1.25 | 0.61    | 1.00    | 3.00    |
| H2HOWNRNT | 14023 | 1.22 | 0.59    | 1.00    | 3.00    |
| H3HOWNRNT | 15582 | 1.22 | 0.59    | 1.00    | 3.00    |
| H4HOWNRNT | 14878 | 1.18 | 0.54    | 1.00    | 3.00    |
| H5HOWNRNT | 17286 | 1.29 | 0.67    | 1.00    | 3.00    |

Categorical Variable Codes

| Value-----          | H1HOWNRNT | H2HOWNRNT | H3HOWNRNT | H4HOWNRNT | H5HOWNRNT |
|---------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK               | 6         | 10        | 120       | 26        | 8         |
| .m:Missing          | 53        | 29        |           | 34        | 20        |
| .r:Refuse           | 7         | 2         | 21        | 7         | 12        |
| 1.Owned             | 13250     | 12154     | 13574     | 13237     | 14432     |
| 2.Rented            | 924       | 627       | 658       | 590       | 758       |
| 3.Other arrangement | 1457      | 1242      | 1350      | 1051      | 2096      |

How Constructed

HwHOWNRNT captures home ownership. It indicates if the residence is (1) owned, (2) rented, or (3) other arrangement. The informant for the subject or the couple is asked "This house/housing unit is...Rented? Borrowed or transferred without payment? Private property or currently paying it off? Other". If the respondent answers that the residence is borrowed, they are currently paying it off, or other, they are then asked "Whose name appears on the property title?". HwHOWNRNT is assigned a code of 1 if the respondent reported that the home is private property or currently being paid off or the respondent, their spouse, the respondent and their spouse, or the respondent and/or spouse and other family members are on the property title. HwHOWNRNT is assigned a code of 2 if the house is rented. HwHOWNRNT is assigned a code of 3 if the house is borrowed or transferred without payment or there is another arrangement. Don't know, refused, or other missing values are assigned special missing values .d, .r, .m, respectively. HwHOWNRNT is assigned blank missing (.) if the respondent did not participate in the current wave.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

Different from the HRS, in the MHAS, HwHOWNRNT also considers if the title of the property is under the name of the subject, the spouse, or the couple.

MHAS Variables Used

|         |                                      |
|---------|--------------------------------------|
| Wave 1: |                                      |
| J11     | housing tenure                       |
| J14     | property title                       |
| Wave 2: |                                      |
| J19     | residence is rented, owned, or other |

|         |                               |
|---------|-------------------------------|
| J22     | names included on house deeds |
| Wave 3: |                               |
| J19_12  | Ownership of residence        |
| J22_12  | Name on property title        |
| Wave 4: |                               |
| J19_15  | Ownership of residence        |
| J22_15  | Name on property title        |
| Wave 5: |                               |
| J19_18  | Ownership of residence        |
| J22_18  | Name on property title        |

|                            |
|----------------------------|
| <b>Value of Other Debt</b> |
|----------------------------|

| Wave | Variable | Label                        | Type  |
|------|----------|------------------------------|-------|
| 1    | H1ADEBT  | h1adebt:w1 assets: debts     | Cont  |
| 2    | H2ADEBT  | h2adebt:w2 assets: debts     | Cont  |
| 3    | H3ADEBT  | h3adebt:w3 assets: debts     | Cont  |
| 4    | H4ADEBT  | h4adebt:w4 assets: debts     | Cont  |
| 5    | H5ADEBT  | h5adebt:w5 assets: debts     | Cont  |
| 1    | H1AFDEBT | h1afdebt:w1 asst flag: debts | Categ |
| 2    | H2AFDEBT | h2afdebt:w2 asst flag: debts | Categ |
| 3    | H3AFDEBT | h3afdebt:w3 asst flag: debts | Categ |
| 4    | H4AFDEBT | h4afdebt:w4 asst flag: debts | Categ |
| 5    | H5AFDEBT | h5afdebt:w5 asst flag: debts | Categ |

### Descriptive Statistics

| Variable | N     | Mean     | Std Dev  | Minimum | Maximum    |
|----------|-------|----------|----------|---------|------------|
| H1ADEBT  | 15636 | 1614.87  | 13074.55 | 0.00    | 500000.00  |
| H2ADEBT  | 14032 | 2147.39  | 22600.44 | 0.00    | 1600000.00 |
| H3ADEBT  | 15723 | 4547.94  | 39211.32 | 0.00    | 2000000.00 |
| H4ADEBT  | 14911 | 6068.11  | 50835.15 | 0.00    | 3500000.00 |
| H5ADEBT  | 17306 | 10759.82 | 87189.89 | 0.00    | 5000000.00 |
| H1AFDEBT | 15695 | 0.00     | 0.11     | -1.00   | 1.00       |
| H2AFDEBT | 14063 | 0.01     | 0.10     | -1.00   | 1.00       |
| H3AFDEBT | 15723 | 0.01     | 0.11     | 0.00    | 1.00       |
| H4AFDEBT | 14945 | 0.01     | 0.12     | -1.00   | 1.00       |
| H5AFDEBT | 17326 | 0.02     | 0.14     | -1.00   | 1.00       |

### Categorical Variable Codes

| Value-----                       | H1AFDEBT | H2AFDEBT | H3AFDEBT | H4AFDEBT | H5AFDEBT |
|----------------------------------|----------|----------|----------|----------|----------|
| -1.No Imput:section not complete | 59       | 31       |          | 34       | 20       |
| 0.Not imputed                    | 15502    | 13915    | 15535    | 14733    | 16980    |
| 1.Imputed                        | 134      | 117      | 188      | 178      | 326      |

### How Constructed

HwADEBT captures the value of other debt at the household level. HwADEBT includes the value of any others debts, such as credit cards, medical debts, loans on life insurance, family loans or others.

The informant for the subject or the couple is asked "Do you (or your spouse) have any debts which we have not asked about, such as credit cards, medical debts, loans on life insurance, family loans or others?". If the respondent answers yes, they are then asked if "Taking all these into account, about how much do you owe?". HwADEBT captures this reported value of amount owed.

For the question eliciting a value used in HwADEBT, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

In the case that the respondent reported not having any other debt, HwADEBT has a value of 0.

HwADEBT is derived at the household level. In MHAS this is a couple or a single person. Special missing .m is used if at least one component of HwADEBT was not imputed because the respondent did not complete

the section. HwADEBT is set to blank missing (.) if the respondent did not participate in the current wave.

HwAFDEBT is a flag variable indicating whether or not any component of HwADEBT was imputed. A code of 0 indicates that no component of HwADEBT was imputed. A code of 1 indicates that at least one component of HwADEBT was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

Value of other debt in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

MHAS Variables Used

|            |                                     |  |
|------------|-------------------------------------|--|
| Wave 1:    |                                     |  |
| IMAM82     | other debts (imputed)               |  |
| K82IMP     | if imputed value                    |  |
| Wave 2:    |                                     |  |
| IMAMK85    | other debts (imputed)               |  |
| K85IMP     | if imputed value                    |  |
| Wave 3:    |                                     |  |
| IMAMK86_12 | Other debts (imputed)               |  |
| K86_IMP_12 | Other debts (Flag if imputed value) |  |
| Wave 4:    |                                     |  |
| IMAMK86_15 | Other debts (imputed)               |  |
| K86_IMP_15 | Other debts (Flag if imputed value) |  |
| Wave 5:    |                                     |  |
| IMAMK86_18 | Other debts (imputed)               |  |
| K86_IMP_18 | Other debts (Flag if imputed value) |  |

|                            |
|----------------------------|
| <b>Value of Loans Lent</b> |
|----------------------------|

| Wave | Variable | Label                             | Type  |
|------|----------|-----------------------------------|-------|
| 1    | H1ALEND  | h1alend:w1 assets: loans lent     | Cont  |
| 2    | H2ALEND  | h2alend:w2 assets: loans lent     | Cont  |
| 3    | H3ALEND  | h3alend:w3 assets: loans lent     | Cont  |
| 4    | H4ALEND  | h4alend:w4 assets: loans lent     | Cont  |
| 5    | H5ALEND  | h5alend:w5 assets: loans lent     | Cont  |
| 1    | H1AFLEND | h1aflend:w1 asst flag: loans lent | Categ |
| 2    | H2AFLEND | h2aflend:w2 asst flag: loans lent | Categ |
| 3    | H3AFLEND | h3aflend:w3 asst flag: loans lent | Categ |
| 4    | H4AFLEND | h4aflend:w4 asst flag: loans lent | Categ |
| 5    | H5AFLEND | h5aflend:w5 asst flag: loans lent | Categ |

### Descriptive Statistics

| Variable | N     | Mean    | Std Dev   | Minimum | Maximum     |
|----------|-------|---------|-----------|---------|-------------|
| H1ALEND  | 15636 | 161.15  | 6519.57   | 0.00    | 400000.00   |
| H2ALEND  | 14032 | 700.11  | 27656.30  | 0.00    | 2000000.00  |
| H3ALEND  | 15723 | 558.43  | 13812.79  | 0.00    | 900000.00   |
| H4ALEND  | 14911 | 1666.94 | 115962.71 | 0.00    | 10000000.00 |
| H5ALEND  | 17306 | 288.91  | 8622.77   | 0.00    | 600000.00   |
| H1AFLEND | 15695 | -0.00   | 0.06      | -1.00   | 1.00        |
| H2AFLEND | 14063 | -0.00   | 0.05      | -1.00   | 1.00        |
| H3AFLEND | 15723 | 0.01    | 0.08      | 0.00    | 1.00        |
| H4AFLEND | 14945 | 0.00    | 0.09      | -1.00   | 1.00        |
| H5AFLEND | 17326 | 0.00    | 0.06      | -1.00   | 1.00        |

### Categorical Variable Codes

| Value-----                       | H1AFLEND | H2AFLEND | H3AFLEND | H4AFLEND | H5AFLEND |
|----------------------------------|----------|----------|----------|----------|----------|
| -1.No Imput:section not complete | 59       | 31       |          | 34       | 20       |
| 0.Not imputed                    | 15631    | 14026    | 15619    | 14834    | 17258    |
| 1.Imputed                        | 5        | 6        | 104      | 77       | 48       |

### How Constructed

HwALEND captures the value of other debt at the household level. HwALEND includes the value of loans made out to others.

The informant for the subject or the couple is asked "Do you (and/or your spouse) have loans made out to others?". If the respondent answers yes, they are then asked if "Adding up all these accounts, what is the approximate total value?". HwALEND captures this reported value of loans made out to others.

For the question eliciting a value used in HwALEND, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.mhasweb.org](http://www.mhasweb.org) for more details on the imputation method used, variables imputed, and covariates included.

In the case that the respondent reported not having any loans made out to others, HwALEND has a value of 0.

HwALEND is derived at the household level. In MHAS this is a couple or a single person. Special missing .m is used if at least one component of HwALEND was not imputed because the respondent did not complete

the section. HwALEND is set to blank missing (.) if the respondent did not participate in the current wave.

HwAFLEND is a flag variable indicating whether or not any component of HwALEND was imputed. A code of 0 indicates that no component of HwALEND was imputed. A code of 1 indicates that at least one component of HwALEND was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

This variable is not included in RAND HRS.

MHAS Variables Used

|              |  |
|--------------|--|
| Wave 1:      |  |
| IMAMK29B     | net capital assets_2 (imputed)                     |
| K29BIMP      | if imputed value                                   |
| Wave 2:      |  |
| IMAMK31_2    | net capital assets_2 (imputed)                     |
| K31_2IMP     | if imputed value                                   |
| Wave 3:      |  |
| IMAMK33_2_12 | Net value capital assets_2 (imputed)               |
| K33_2_IMP_12 | Net value capital assets_2 (Flag if imputed value) |
| Wave 4:      |  |
| IMAMK33_2_15 | Net value capital assets_2 (imputed)               |
| K33_2_IMP_15 | Net value capital assets_2 (Flag if imputed value) |
| Wave 5:      |  |
| IMAMK33_2_18 | Net value capital assets_2 (imputed)               |
| K33_2_IMP_18 | Net value capital assets_2 (Flag if imputed value) |



Net Value of Non-Housing Financial Wealth (Excluding IRAs)

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | H1ATOTF  | h1atotf:w1 non-housing financial wealth        | Cont  |
| 2    | H2ATOTF  | h2atotf:w2 non-housing financial wealth        | Cont  |
| 3    | H3ATOTF  | h3atotf:w3 non-housing financial wealth        | Cont  |
| 4    | H4ATOTF  | h4atotf:w4 non-housing financial wealth        | Cont  |
| 5    | H5ATOTF  | h5atotf:w5 non-housing financial wealth        | Cont  |
| 1    | H1AFTOTF | h1aftotf:w1 flag: non-housing financial wealth | Categ |
| 2    | H2AFTOTF | h2aftotf:w2 flag: non-housing financial wealth | Categ |
| 3    | H3AFTOTF | h3aftotf:w3 flag: non-housing financial wealth | Categ |
| 4    | H4AFTOTF | h4aftotf:w4 flag: non-housing financial wealth | Categ |
| 5    | H5AFTOTF | h5aftotf:w5 flag: non-housing financial wealth | Categ |

Descriptive Statistics

| Variable | N     | Mean      | Std Dev   | Minimum     | Maximum     |
|----------|-------|-----------|-----------|-------------|-------------|
| H1ATOTF  | 15636 | 54159.22  | 166419.37 | -312375.28  | 7000000.00  |
| H2ATOTF  | 14032 | 67343.94  | 282598.13 | -1560000.00 | 9777776.00  |
| H3ATOTF  | 15723 | 123767.21 | 410467.39 | -1734339.25 | 9000000.00  |
| H4ATOTF  | 14911 | 121280.08 | 618240.80 | -2921027.50 | 37117728.00 |
| H5ATOTF  | 17306 | 142770.01 | 461210.76 | -3000000.00 | 9000000.00  |
| H1AFTOTF | 15695 | 0.27      | 0.45      | -1.00       | 1.00        |
| H2AFTOTF | 14063 | 0.25      | 0.44      | -1.00       | 1.00        |
| H3AFTOTF | 15723 | 0.32      | 0.47      | 0.00        | 1.00        |
| H4AFTOTF | 14945 | 0.25      | 0.44      | -1.00       | 1.00        |
| H5AFTOTF | 17326 | 0.26      | 0.44      | -1.00       | 1.00        |

Categorical Variable Codes

| Value-----                       | H1AFTOTF | H2AFTOTF | H3AFTOTF | H4AFTOTF | H5AFTOTF |
|----------------------------------|----------|----------|----------|----------|----------|
| -1.No Imput:section not complete | 59       | 31       |          | 34       | 20       |
| 0.Not imputed                    | 11363    | 10468    | 10711    | 11191    | 12735    |
| 1.Imputed                        | 4273     | 3564     | 5012     | 3720     | 4571     |

How Constructed

HwATOTF captures the household's net value of non-housing financial wealth and is based on information from:

Value of bonds, shares, and stocks, as previously described

Value of checking, savings accounts, as previously described

Value of other assets, as previously described

Value of loans lent, as previously described

Value of other debts, as previously described

HwATOTF is constructed as the sum of the different wealth components minus the debt component: (Value of bonds, shares, and stocks + Value of checking, savings accounts + Value of other assets + Value of loans lent - Value of other debts). All the components of this variable are constructed at the household level and include imputed values. In MHAS, the household is a couple or a single person. Special missing .m is used if at least one component of HwATOTF was not imputed because the respondent did not complete the section. HwATOTF is set to blank missing (.) if the respondent did not participate in the current wave.

HwAFTOTF is a flag variable based on the original flag variables (previously defined as HwABFDSTK, HwAFCHCK, HwAFOTHR, HwAFLEND, HwAFDEBT), indicating whether or not any component of HwATOTF was imputed. A code of 0 indicates that no component of HwATOTF was imputed. A code of 1 indicates that at least one component of HwATOTF was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

Note: This total does NOT include the value of any real estate, vehicles, or businesses.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

See individual components.

Net value of non-housing financial wealth in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

## MHAS Variables Used

### Wave 1:

|          |                                  |
|----------|----------------------------------|
| IMAM82   | other debts (imputed)            |
| IMAMK29A | net capital assets_1 (imputed)   |
| IMAMK29B | net capital assets_2 (imputed)   |
| IMAMK3_1 | total debt business_1 (imputed)  |
| IMAMK3_2 | total debt business_2 (imputed)  |
| IMAMK42  | net value other assets (imputed) |
| IMAMK8_1 | gross value business_1 (imputed) |
| IMAMK8_2 | gross value business_2 (imputed) |
| K29AIMP  | if imputed value                 |
| K29BIMP  | if imputed value                 |
| K3_1IMP  | if imputed value                 |
| K3_2IMP  | if imputed value                 |
| K42IMP   | if imputed value                 |
| K82IMP   | if imputed value                 |
| K8_1IMP  | if imputed value                 |
| K8_2IMP  | if imputed value                 |

### Wave 2:

|           |                                  |
|-----------|----------------------------------|
| IMAMK31_1 | net capital assets_1 (imputed)   |
| IMAMK31_2 | net capital assets_2 (imputed)   |
| IMAMK3_1  | total debt business_1 (imputed)  |
| IMAMK3_2  | total debt business_2 (imputed)  |
| IMAMK44   | net value other assets (imputed) |
| IMAMK85   | other debts (imputed)            |
| IMAMK8_1  | gross value business_1 (imputed) |
| IMAMK8_2  | gross value business_2 (imputed) |
| K31_1IMP  | if imputed value                 |
| K31_2IMP  | if imputed value                 |
| K3_1IMP   | if imputed value                 |
| K3_2IMP   | if imputed value                 |
| K44IMP    | if imputed value                 |
| K85IMP    | if imputed value                 |
| K8_1IMP   | if imputed value                 |
| K8_2IMP   | if imputed value                 |

### Wave 3:

|              |                                      |
|--------------|--------------------------------------|
| IMAMK33_1_12 | Net value capital assets_1 (imputed) |
| IMAMK33_2_12 | Net value capital assets_2 (imputed) |
| IMAMK44_12   | Net value other assets (imputed)     |
| IMAMK4_1_12  | Total debt business_1 (imputed)      |
| IMAMK4_2_12  | Total debt business_2 (imputed)      |
| IMAMK86_12   | Other debts (imputed)                |

|              |  |
|--------------|--|
| IMAMK8_1_12  | Gross value business_1 (imputed)                   |
| IMAMK8_2_12  | Gross value business_2 (imputed)                   |
| K33_1_IMP_12 | Net value capital assets_1 (Flag if imputed value) |
| K33_2_IMP_12 | Net value capital assets_2 (Flag if imputed value) |
| K44_IMP_12   | Net value other assets (Flag if imputed value)     |
| K4_1_IMP_12  | Total debt business_1 (Flag if imputed value)      |
| K4_2_IMP_12  | Total debt business_2 (Flag if imputed value)      |
| K86_IMP_12   | Other debts (Flag if imputed value)                |
| K8_1_IMP_12  | Gross value business_1 (Flag if imputed value)     |
| K8_2_IMP_12  | Gross value business_2 (Flag if imputed value)     |

## Wave 4:

|              |  |
|--------------|--|
| IMAMK33_1_15 | Net value capital assets_1 (imputed)               |
| IMAMK33_2_15 | Net value capital assets_2 (imputed)               |
| IMAMK44_15   | Net value other assets (imputed)                   |
| IMAMK4_1_15  | Total debt business_1 (imputed)                    |
| IMAMK4_2_15  | Total debt business_2 (imputed)                    |
| IMAMK86_15   | Other debts (imputed)                              |
| IMAMK8_1_15  | Gross value business_1 (imputed)                   |
| IMAMK8_2_15  | Gross value business_2 (imputed)                   |
| K33_1_IMP_15 | Net value capital assets_1 (Flag if imputed value) |
| K33_2_IMP_15 | Net value capital assets_2 (Flag if imputed value) |
| K44_IMP_15   | Net value other assets (Flag if imputed value)     |
| K4_1_IMP_15  | Total debt business_1 (Flag if imputed value)      |
| K4_2_IMP_15  | Total debt business_2 (Flag if imputed value)      |
| K86_IMP_15   | Other debts (Flag if imputed value)                |
| K8_1_IMP_15  | Gross value business_1 (Flag if imputed value)     |
| K8_2_IMP_15  | Gross value business_2 (Flag if imputed value)     |

## Wave 5:

|              |  |
|--------------|--|
| IMAMK33_1_18 | Net value capital assets_1 (imputed)               |
| IMAMK33_2_18 | Net value capital assets_2 (imputed)               |
| IMAMK44_18   | Net value other assets (imputed)                   |
| IMAMK4_1_18  | Total debt business_1 (imputed)                    |
| IMAMK4_2_18  | Total debt business_2 (imputed)                    |
| IMAMK86_18   | Other debts (imputed)                              |
| IMAMK8_1_18  | Gross value business_1 (imputed)                   |
| IMAMK8_2_18  | Gross value business_2 (imputed)                   |
| K33_1_IMP_18 | Net value capital assets_1 (Flag if imputed value) |
| K33_2_IMP_18 | Net value capital assets_2 (Flag if imputed value) |
| K44_IMP_18   | Net value other assets (Flag if imputed value)     |
| K4_1_IMP_18  | Total debt business_1 (Flag if imputed value)      |
| K4_2_IMP_18  | Total debt business_2 (Flag if imputed value)      |
| K86_IMP_18   | Other debts (Flag if imputed value)                |
| K8_1_IMP_18  | Gross value business_1 (Flag if imputed value)     |
| K8_2_IMP_18  | Gross value business_2 (Flag if imputed value)     |

Total Wealth

| Wave | Variable | Label   | Type  |
|------|----------|---|-------|
| 1    | H1ATOTB  | h1atotb:w1 total all assets inc. 2nd hm       | Cont  |
| 2    | H2ATOTB  | h2atotb:w2 total all assets inc. 2nd hm       | Cont  |
| 3    | H3ATOTB  | h3atotb:w3 total all assets inc. 2nd hm       | Cont  |
| 4    | H4ATOTB  | h4atotb:w4 total all assets inc. 2nd hm       | Cont  |
| 5    | H5ATOTB  | h5atotb:w5 total all assets inc. 2nd hm       | Cont  |
| 1    | H1AFTOTB | h1aftotb:w1 flag total all assets inc. 2nd hm | Categ |
| 2    | H2AFTOTB | h2aftotb:w2 flag total all assets inc. 2nd hm | Categ |
| 3    | H3AFTOTB | h3aftotb:w3 flag total all assets inc. 2nd hm | Categ |
| 4    | H4AFTOTB | h4aftotb:w4 flag total all assets inc. 2nd hm | Categ |
| 5    | H5AFTOTB | h5aftotb:w5 flag total all assets inc. 2nd hm | Categ |

Descriptive Statistics

| Variable | N     | Mean       | Std Dev    | Minimum     | Maximum      |
|----------|-------|------------|------------|-------------|--------------|
| H1ATOTB  | 15636 | 395163.75  | 810017.64  | -585000.00  | 26127040.00  |
| H2ATOTB  | 14030 | 471755.19  | 893168.31  | -1655000.00 | 20478304.00  |
| H3ATOTB  | 15723 | 874499.38  | 1328057.53 | -3995500.00 | 24049140.00  |
| H4ATOTB  | 14911 | 1533868.87 | 3683096.90 | -499247.13  | 110255000.00 |
| H5ATOTB  | 17306 | 1023929.33 | 1413916.38 | -3008000.00 | 21650000.00  |
| H1AFTOTB | 15697 | 0.50       | 0.51       | -1.00       | 1.00         |
| H2AFTOTB | 14064 | 0.50       | 0.50       | -1.00       | 1.00         |
| H3AFTOTB | 15723 | 0.57       | 0.49       | 0.00        | 1.00         |
| H4AFTOTB | 14945 | 0.45       | 0.50       | -1.00       | 1.00         |
| H5AFTOTB | 17326 | 0.53       | 0.50       | -1.00       | 1.00         |

Categorical Variable Codes

| Value-----                       | H1AFTOTB | H2AFTOTB | H3AFTOTB | H4AFTOTB | H5AFTOTB |
|----------------------------------|----------|----------|----------|----------|----------|
| -1.No Imput:section not complete | 59       | 33       |          | 34       | 20       |
| 0.Not imputed                    | 7704     | 6930     | 6708     | 8116     | 8186     |
| 1.Imputed                        | 7934     | 7101     | 9015     | 6795     | 9120     |

How Constructed

HwATOTB captures the household's total wealth and is based on information from:

Net value of primary residence, as described previously.

Net value of other real estate, as described previously.

Net value of transportation, as described previously.

Net value of business, as described previously.

Net value of non-housing financial wealth, as described previously.

HwATOTB is constructed as the sum of the different wealth components: (Net value of primary residence + Net value of other real estate + Net value of transportation + Net value of business + Net value of non-housing financial wealth). All the components of this variable are constructed at the household level and include imputed values. In MHAS, the household is a couple or a single person. Special missing .m is used if at least one component of HwATOTB was not imputed because the respondent did not complete the section. HwATOTB is set to blank missing (.) if the respondent did not participate in the current wave.

HwAFTOTB is a flag variable based on the original flag variables (previously defined as HwAFTOTF, HwAFRLES, HwAFTRAN, HwAFBSNS, HwAFTOTF), indicating whether or not any component of HwATOTB was imputed.

A code of 0 indicates that no component of HwATOTB was imputed. A code of 1 indicates that at least one component of HwATOTB was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

## Cross Wave Differences in MHAS

See cross wave differences with the Net Value of Real Estate (HwARLES).

## Differences with the RAND HRS/Harmonized HRS

See individual components.

HwATOTB in the Harmonized MHAS does not include the value of individual retirement accounts, whereas HwATOTB in the RAND HRS does include the net value of individual retirement accounts. Whether the respondent is paying into an individual retirement account as part of their current job is asked in MHAS but the current amount of the account is not elicited.

Total family wealth in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

## MHAS Variables Used

### Wave 1:

|          |                                  |
|----------|----------------------------------|
| IMAM82   | other debts (imputed)            |
| IMAMK29A | net capital assets_1 (imputed)   |
| IMAMK29B | net capital assets_2 (imputed)   |
| IMAMK3_1 | total debt business_1 (imputed)  |
| IMAMK3_2 | total debt business_2 (imputed)  |
| IMAMK42  | net value other assets (imputed) |
| IMAMK8_1 | gross value business_1 (imputed) |
| IMAMK8_2 | gross value business_2 (imputed) |
| K29AIMP  | if imputed value                 |
| K29BIMP  | if imputed value                 |
| K3_1IMP  | if imputed value                 |
| K3_2IMP  | if imputed value                 |
| K42IMP   | if imputed value                 |
| K82IMP   | if imputed value                 |
| K8_1IMP  | if imputed value                 |
| K8_2IMP  | if imputed value                 |

### Wave 2:

|           |                                  |
|-----------|----------------------------------|
| IMAMK31_1 | net capital assets_1 (imputed)   |
| IMAMK31_2 | net capital assets_2 (imputed)   |
| IMAMK3_1  | total debt business_1 (imputed)  |
| IMAMK3_2  | total debt business_2 (imputed)  |
| IMAMK44   | net value other assets (imputed) |
| IMAMK85   | other debts (imputed)            |
| IMAMK8_1  | gross value business_1 (imputed) |
| IMAMK8_2  | gross value business_2 (imputed) |
| K31_1IMP  | if imputed value                 |
| K31_2IMP  | if imputed value                 |
| K3_1IMP   | if imputed value                 |
| K3_2IMP   | if imputed value                 |
| K44IMP    | if imputed value                 |
| K85IMP    | if imputed value                 |
| K8_1IMP   | if imputed value                 |
| K8_2IMP   | if imputed value                 |

### Wave 3:

|              |                                      |
|--------------|--------------------------------------|
| IMAMK33_1_12 | Net value capital assets_1 (imputed) |
| IMAMK33_2_12 | Net value capital assets_2 (imputed) |
| IMAMK44_12   | Net value other assets (imputed)     |
| IMAMK4_1_12  | Total debt business_1 (imputed)      |
| IMAMK4_2_12  | Total debt business_2 (imputed)      |

|              |  |
|--------------|--|
| IMAMK86_12   | Other debts (imputed)                              |
| IMAMK8_1_12  | Gross value business_1 (imputed)                   |
| IMAMK8_2_12  | Gross value business_2 (imputed)                   |
| K33_1_IMP_12 | Net value capital assets_1 (Flag if imputed value) |
| K33_2_IMP_12 | Net value capital assets_2 (Flag if imputed value) |
| K44_IMP_12   | Net value other assets (Flag if imputed value)     |
| K4_1_IMP_12  | Total debt business_1 (Flag if imputed value)      |
| K4_2_IMP_12  | Total debt business_2 (Flag if imputed value)      |
| K86_IMP_12   | Other debts (Flag if imputed value)                |
| K8_1_IMP_12  | Gross value business_1 (Flag if imputed value)     |
| K8_2_IMP_12  | Gross value business_2 (Flag if imputed value)     |

## Wave 4:

|              |  |
|--------------|--|
| IMAMK33_1_15 | Net value capital assets_1 (imputed)               |
| IMAMK33_2_15 | Net value capital assets_2 (imputed)               |
| IMAMK44_15   | Net value other assets (imputed)                   |
| IMAMK4_1_15  | Total debt business_1 (imputed)                    |
| IMAMK4_2_15  | Total debt business_2 (imputed)                    |
| IMAMK86_15   | Other debts (imputed)                              |
| IMAMK8_1_15  | Gross value business_1 (imputed)                   |
| IMAMK8_2_15  | Gross value business_2 (imputed)                   |
| K33_1_IMP_15 | Net value capital assets_1 (Flag if imputed value) |
| K33_2_IMP_15 | Net value capital assets_2 (Flag if imputed value) |
| K44_IMP_15   | Net value other assets (Flag if imputed value)     |
| K4_1_IMP_15  | Total debt business_1 (Flag if imputed value)      |
| K4_2_IMP_15  | Total debt business_2 (Flag if imputed value)      |
| K86_IMP_15   | Other debts (Flag if imputed value)                |
| K8_1_IMP_15  | Gross value business_1 (Flag if imputed value)     |
| K8_2_IMP_15  | Gross value business_2 (Flag if imputed value)     |

## Wave 5:

|              |  |
|--------------|--|
| IMAMK33_1_18 | Net value capital assets_1 (imputed)               |
| IMAMK33_2_18 | Net value capital assets_2 (imputed)               |
| IMAMK44_18   | Net value other assets (imputed)                   |
| IMAMK4_1_18  | Total debt business_1 (imputed)                    |
| IMAMK4_2_18  | Total debt business_2 (imputed)                    |
| IMAMK86_18   | Other debts (imputed)                              |
| IMAMK8_1_18  | Gross value business_1 (imputed)                   |
| IMAMK8_2_18  | Gross value business_2 (imputed)                   |
| K33_1_IMP_18 | Net value capital assets_1 (Flag if imputed value) |
| K33_2_IMP_18 | Net value capital assets_2 (Flag if imputed value) |
| K44_IMP_18   | Net value other assets (Flag if imputed value)     |
| K4_1_IMP_18  | Total debt business_1 (Flag if imputed value)      |
| K4_2_IMP_18  | Total debt business_2 (Flag if imputed value)      |
| K86_IMP_18   | Other debts (Flag if imputed value)                |
| K8_1_IMP_18  | Gross value business_1 (Flag if imputed value)     |
| K8_2_IMP_18  | Gross value business_2 (Flag if imputed value)     |

**Section F: Income**

Individual Earnings

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1IEARN  | r1iearn:w1 Income:R Earnings from employment   | Cont  |
| 2    | R2IEARN  | r2iearn:w2 Income:R Earnings from employment   | Cont  |
| 3    | R3IEARN  | r3iearn:w3 Income:R Earnings from employment   | Cont  |
| 4    | R4IEARN  | r4iearn:w4 Income:R Earnings from employment   | Cont  |
| 5    | R5IEARN  | r5iearn:w5 Income:R Earnings from employment   | Cont  |
| 1    | S1IEARN  | s1iearn:w1 Income:S Earnings from employment   | Cont  |
| 2    | S2IEARN  | s2iearn:w2 Income:S Earnings from employment   | Cont  |
| 3    | S3IEARN  | s3iearn:w3 Income:S Earnings from employment   | Cont  |
| 4    | S4IEARN  | s4iearn:w4 Income:S Earnings from employment   | Cont  |
| 5    | S5IEARN  | s5iearn:w5 Income:S Earnings from employment   | Cont  |
| 1    | R1IFEARN | r1ifearn:w1 IncFlag:R Earnings from employment | Categ |
| 2    | R2IFEARN | r2ifearn:w2 IncFlag:R Earnings from employment | Categ |
| 3    | R3IFEARN | r3ifearn:w3 IncFlag:R Earnings from employment | Categ |
| 4    | R4IFEARN | r4ifearn:w4 IncFlag:R Earnings from employment | Categ |
| 5    | R5IFEARN | r5ifearn:w5 IncFlag:R Earnings from employment | Categ |
| 1    | S1IFEARN | s1ifearn:w1 IncFlag:S Earnings from employment | Categ |
| 2    | S2IFEARN | s2ifearn:w2 IncFlag:S Earnings from employment | Categ |
| 3    | S3IFEARN | s3ifearn:w3 IncFlag:S Earnings from employment | Categ |
| 4    | S4IFEARN | s4ifearn:w4 IncFlag:S Earnings from employment | Categ |
| 5    | S5IFEARN | s5ifearn:w5 IncFlag:S Earnings from employment | Categ |

Descriptive Statistics

| Variable | N     | Mean     | Std Dev   | Minimum | Maximum    |
|----------|-------|----------|-----------|---------|------------|
| R1IEARN  | 15126 | 17183.59 | 73539.49  | 0.00    | 4723420.00 |
| R2IEARN  | 13662 | 12421.54 | 46357.16  | 0.00    | 2118000.00 |
| R3IEARN  | 15721 | 16487.13 | 112209.83 | 0.00    | 6500000.00 |
| R4IEARN  | 14745 | 16789.37 | 90379.57  | 0.00    | 6103403.00 |
| R5IEARN  | 17094 | 21669.28 | 125743.12 | 0.00    | 9604000.00 |
| S1IEARN  | 10632 | 20164.56 | 84570.50  | 0.00    | 4723420.00 |
| S2IEARN  | 9547  | 14399.34 | 51584.09  | 0.00    | 2118000.00 |
| S3IEARN  | 10590 | 19241.24 | 113510.10 | 0.00    | 6500000.00 |
| S4IEARN  | 10343 | 19300.83 | 102511.76 | 0.00    | 6103403.00 |
| S5IEARN  | 11969 | 24855.39 | 143942.00 | 0.00    | 9604000.00 |
| R1IFEARN | 15126 | 0.03     | 0.18      | 0.00    | 1.00       |
| R2IFEARN | 13673 | 0.02     | 0.15      | -1.00   | 1.00       |
| R3IFEARN | 15723 | 0.03     | 0.16      | -1.00   | 1.00       |
| R4IFEARN | 14745 | 0.02     | 0.14      | 0.00    | 1.00       |
| R5IFEARN | 17094 | 0.03     | 0.16      | 0.00    | 1.00       |
| S1IFEARN | 10932 | 0.01     | 0.25      | -1.00   | 1.00       |
| S2IFEARN | 9673  | 0.01     | 0.20      | -1.00   | 1.00       |
| S3IFEARN | 10941 | 0.00     | 0.26      | -1.00   | 1.00       |
| S4IFEARN | 10414 | 0.02     | 0.18      | -1.00   | 1.00       |
| S5IFEARN | 12059 | 0.03     | 0.21      | -1.00   | 1.00       |

Categorical Variable Codes

| Value-----                       | R1IFEARN | R2IFEARN | R3IFEARN | R4IFEARN | R5IFEARN |
|----------------------------------|----------|----------|----------|----------|----------|
| .m:Missing                       | 60       | 31       |          | 34       | 20       |
| -1.No Imput:section not complete |          | 11       | 2        |          |          |
| 0.Not imputed                    | 14623    | 13377    | 15286    | 14443    | 16619    |



|                                  |  |         |         |         |         |         |
|----------------------------------|--|---------|---------|---------|---------|---------|
| 1.Imputed                        |  | 503     | 285     | 435     | 302     | 475     |
| Value-----                       |  | S1FEARN | S2FEARN | S3FEARN | S4FEARN | S5FEARN |
| .m:Missing                       |  | 51      | 22      |         | 22      | 9       |
| .u:Unmar                         |  | 4203    | 4009    | 4782    | 4343    | 5223    |
| -1.No Imput:section not complete |  | 300     | 126     | 351     | 71      | 90      |
| 0.Not imputed                    |  | 10231   | 9293    | 10226   | 10063   | 11516   |
| 1.Imputed                        |  | 401     | 254     | 364     | 280     | 453     |

## How Constructed

RwIEARN and SwIEARN capture the respondent's and spouse's employment individual earnings at an annual-level, respectively. RwIEARN and SwIEARN include income from salary, commission, overtime, bonus and profit share for both the primary and secondary job. Employment earnings questions are asked without instruction as to whether these amounts should be reported before or after tax.

Income questions about the respondent and the respondent's spouse (if applicable) are asked separately, but both are answered by the financial respondent. If the financial respondent is the respondent, then questions the financial respondent answers about him/herself are assigned to the respondent and those about their spouse are assigned to the spouse. However, if the financial respondent is the respondent's spouse, then questions the financial respondent answers about him/herself are assigned to the spouse and those concerning their spouse are assigned to the respondent. Proxy respondents can also answer these income questions in the place of the respondent or their spouse and, in the case that they do, they are asked to answer about the respondent and their spouse (if applicable), and financial information is then assigned respectively.

The financial respondent is first asked "During last year, did you have a principal job?" If they answer yes, they are then asked "Excluding income you already mentioned, last year did you receive income from salary, commission, and overtime from your principal job?" If they answer yes, they are asked how much they earned per month. They are then asked "Excluding income you already mentioned, last year did you receive income from bonus and/or profit share from your principal job?" If they answer yes, they are asked about how much they earned yearly. For all respondents who are reported to have had a principal job during the last year, they are asked "During last year, did you have a secondary job?" If they answer yes, they are then asked "Excluding income you already mentioned, last year did you receive income from salary, commission, and overtime from your secondary job?". If they answer yes, they are asked how much they earned per month. They are then asked "Excluding income you already mentioned, last year did you receive income from bonus and/or profit share from your secondary job?". If they answer yes, they are asked about how much they earned yearly. At Wave 1 and 2, RwIEARN is derived as yearly income from employment earnings by multiplying the reported monthly amounts of salary, commission, and overtime by 12 and by adding the reported yearly amounts of bonus and profit share from both the primary and secondary job. Starting at Wave 3, RwIEARN is derived as yearly income from employment earnings by adding the reported monthly amounts of salary, commission, and overtime and the reported monthly amounts of bonus and profit share from both the primary and secondary job, and multiplying that amount by 12 to express a yearly value. In the case that the respondent did not have a primary job or that they did not receive any salary, commission, overtime, bonus and profit share for the primary or secondary job, RwIEARN has a value of 0. Special missing .m is used if at least one component of RwIEARN was not imputed because the section was not completed. RwIEARN is set to blank missing (.) if the respondent did not participate in the current wave.

If the respondent has a spouse, the financial respondent is asked "During last year, did your spouse have a principal job?" If they answer yes, they are then asked "Excluding income you already mentioned, last year did your spouse receive income from salary, commission, and overtime from his/her principal job?" If they answer yes, they are asked how much he/she earned per month. They are then asked "Excluding income you already mentioned, last year did your spouse receive income from bonus and/or profit share from his/her principal job?" If they answer yes, they are asked about how much he/she earned yearly. For all spouses who are reported to have had a principal job during the last year, the informant is asked "During last year, did your spouse have a secondary job?" If they answer yes, they are then asked "Excluding income you already mentioned, last year did your spouse receive income from salary, commission, and overtime from his/her secondary job?". If they answer yes, they are asked how much he/she earned per month. They are then asked "Excluding income you already mentioned, last year did your spouse receive income from bonus and/or profit share from his/her secondary job?". If they answer yes, they are asked about how much he/she earned yearly. At Wave 1 and 2, SwIEARN is derived as yearly income from employment earnings by multiplying the reported monthly amounts of salary, commission, and overtime by 12 and by adding the reported yearly amounts of bonus and profit share from both the primary and secondary job. Starting at Wave 3, SwIEARN is derived as yearly income from employment earnings by adding the reported

monthly amounts of salary, commission, and overtime and the reported monthly amounts of bonus and profit share from both the primary and secondary job, and multiplying that amount by 12 to express a yearly value. In the case that the spouse did not have a primary job or that they did not receive any salary, commission, overtime, bonus and profit share for the primary or secondary job, SwIEARN has a value of 0. Special missing .m is used if at least one component of SwIEARN was not imputed because the section was not completed. Special missing value .u is used when the respondent does not have a spouse at this wave. SwIEARN is set to blank missing (.) if the respondent did not participate in the current wave.

For questions eliciting a value included in Rwiearn and Swiearn, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

Rwiearn and Swiearn are flag variables indicating whether or not any component of Rwiearn or Swiearn was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

## Cross Wave Differences in MHAS

As part of MHAS imputation process at Wave 1 and 2, the imputed values of bonus and profit share from both the primary and secondary job were left as yearly amounts. Starting at Wave 3 imputation process, the imputed values of bonus and profit share from both the primary and secondary job were transformed to monthly amounts. Rwiearn and Swiearn account for this change and include the values of bonus and profit share from both the primary and secondary job at the annual level in all waves.

## Differences with the RAND HRS/Harmonized HRS

In the HRS respondents are asked to report employment earnings aside from self-employment income. The HRS then later specifically asks respondents about self-employment income. In the MHAS respondents are asked about all earnings from the principal and secondary job (regardless of whether the earnings are from self-employment). Therefore earnings from self-employment are captured in Rwiearn in the Harmonized MHAS while these earnings would not be captured in Rwiearn in the RAND HRS but instead are included as part of Hwicap in the RAND HRS.

In the HRS, respondents are instructed to report employment earnings before taxes and deductions. In the MHAS, employment earnings questions are asked without instruction as to whether these amounts should be reported before or after tax.

The individual earnings variable in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

## MHAS Variables Used

### Wave 1:

|        |                                    |
|--------|------------------------------------|
| IMAM44 | own earned income-1 (imputed)      |
| IMAM45 | own earned income-2 (imputed)      |
| IMAM47 | own earned income-3 (imputed)      |
| IMAM48 | own earned income-4 (imputed)      |
| IMAM50 | spouse's earned income-1 (imputed) |
| IMAM51 | spouse's earned income-2 (imputed) |
| IMAM53 | spouse's earned income-3 (imputed) |
| IMAM54 | spouse's earned income-4 (imputed) |
| K44IMP | if imputed value                   |
| K45IMP | if imputed value                   |
| K47IMP | if imputed value                   |
| K48IMP | if imputed value                   |
| K50IMP | if imputed value                   |
| K51IMP | if imputed value                   |

|             |  |
|-------------|--|
| K53IMP      | if imputed value                                 |
| K54IMP      | if imputed value                                 |
| Wave 2:     |  |
| IMAM47      | own earned income-1 (imputed)                    |
| IMAM48      | own earned income-2 (imputed)                    |
| IMAM50      | own earned income-3 (imputed)                    |
| IMAM51      | own earned income-4 (imputed)                    |
| IMAM53      | spouse's earned income-1 (imputed)               |
| IMAM54      | spouse's earned income-2 (imputed)               |
| IMAM56      | spouse's earned income-3 (imputed)               |
| IMAM57      | spouse's earned income-4 (imputed)               |
| K47IMP      | if imputed value                                 |
| K48IMP      | if imputed value                                 |
| K50IMP      | if imputed value                                 |
| K51IMP      | if imputed value                                 |
| K53IMP      | if imputed value                                 |
| K54IMP      | if imputed value                                 |
| K56IMP      | if imputed value                                 |
| K57IMP      | if imputed value                                 |
| Wave 3:     |  |
| IMAMK47A_12 | Own earned income-1 (imputed)                    |
| IMAMK48A_12 | Own earned income-2 (imputed)                    |
| IMAMK50A_12 | Own earned income-3 (imputed)                    |
| IMAMK51A_12 | Own earned income-4 (imputed)                    |
| IMAMK53A_12 | Spouse's earned income-1 (imputed)               |
| IMAMK54A_12 | Spouse's earned income-2 (imputed)               |
| IMAMK56A_12 | Spouse's earned income-3 (imputed)               |
| IMAMK57A_12 | Spouse's earned income-4 (imputed)               |
| K47A_IMP_12 | Own earned income-1 (Flag if imputed value)      |
| K48A_IMP_12 | Own earned income-2 (Flag if imputed value)      |
| K50A_IMP_12 | Own earned income-3 (Flag if imputed value)      |
| K51A_IMP_12 | Own earned income-4 (Flag if imputed value)      |
| K53A_IMP_12 | Spouse's earned income-1 (Flag if imputed value) |
| K53A_IMP_12 | Spouse's earned income-1 (Flag if imputed value) |
| K53A_IMP_12 | Spouse's earned income-1 (Flag if imputed value) |
| K54A_IMP_12 | Spouse's earned income-2 (Flag if imputed value) |
| K54A_IMP_12 | Spouse's earned income-2 (Flag if imputed value) |
| K54A_IMP_12 | Spouse's earned income-2 (Flag if imputed value) |
| K56A_IMP_12 | Spouse's earned income-3 (Flag if imputed value) |
| K56A_IMP_12 | Spouse's earned income-3 (Flag if imputed value) |
| K56A_IMP_12 | Spouse's earned income-3 (Flag if imputed value) |
| K57A_IMP_12 | Spouse's earned income-4 (Flag if imputed value) |
| K57A_IMP_12 | Spouse's earned income-4 (Flag if imputed value) |
| K57A_IMP_12 | Spouse's earned income-4 (Flag if imputed value) |
| Wave 4:     |  |
| IMAMK47A_15 | Own earned income-1 (imputed)                    |
| IMAMK48A_15 | Own earned income-2 (imputed)                    |
| IMAMK50A_15 | Own earned income-3 (imputed)                    |
| IMAMK51A_15 | Own earned income-4 (imputed)                    |
| IMAMK53A_15 | Spouse's earned income-1 (imputed)               |
| IMAMK54A_15 | Spouse's earned income-2 (imputed)               |
| IMAMK56A_15 | Spouse's earned income-3 (imputed)               |
| IMAMK57A_15 | Spouse's earned income-4 (imputed)               |
| K47A_IMP_15 | Own earned income-1 (Flag if imputed value)      |
| K48A_IMP_15 | Own earned income-2 (Flag if imputed value)      |
| K50A_IMP_15 | Own earned income-3 (Flag if imputed value)      |
| K51A_IMP_15 | Own earned income-4 (Flag if imputed value)      |
| K53A_IMP_15 | Spouse's earned income-1 (Flag if imputed value) |
| K53A_IMP_15 | Spouse's earned income-1 (Flag if imputed value) |
| K53A_IMP_15 | Spouse's earned income-1 (Flag if imputed value) |
| K54A_IMP_15 | Spouse's earned income-2 (Flag if imputed value) |
| K54A_IMP_15 | Spouse's earned income-2 (Flag if imputed value) |
| K54A_IMP_15 | Spouse's earned income-2 (Flag if imputed value) |
| K56A_IMP_15 | Spouse's earned income-3 (Flag if imputed value) |

|             |  |
|-------------|--|
| K56A_IMP_15 | Spouse's earned income-3 (Flag if imputed value) |
| K56A_IMP_15 | Spouse's earned income-3 (Flag if imputed value) |
| K57A_IMP_15 | Spouse's earned income-4 (Flag if imputed value) |
| K57A_IMP_15 | Spouse's earned income-4 (Flag if imputed value) |
| K57A_IMP_15 | Spouse's earned income-4 (Flag if imputed value) |
| Wave 5:     |  |
| IMAMK47A_18 | Own earned income-1 (imputed)                    |
| IMAMK48A_18 | Own earned income-2 (imputed)                    |
| IMAMK50A_18 | Own earned income-3 (imputed)                    |
| IMAMK51A_18 | Own earned income-4 (imputed)                    |
| IMAMK53A_18 | Spouse's earned income-1 (imputed)               |
| IMAMK54A_18 | Spouse's earned income-2 (imputed)               |
| IMAMK56A_18 | Spouse's earned income-3 (imputed)               |
| IMAMK57A_18 | Spouse's earned income-4 (imputed)               |
| K47A_IMP_18 | Own earned income-1 (Flag if imputed value)      |
| K48A_IMP_18 | Own earned income-2 (Flag if imputed value)      |
| K50A_IMP_18 | Own earned income-3 (Flag if imputed value)      |
| K51A_IMP_18 | Own earned income-4 (Flag if imputed value)      |
| K53A_IMP_18 | Spouse's earned income-1 (Flag if imputed value) |
| K53A_IMP_18 | Spouse's earned income-1 (Flag if imputed value) |
| K53A_IMP_18 | Spouse's earned income-1 (Flag if imputed value) |
| K54A_IMP_18 | Spouse's earned income-2 (Flag if imputed value) |
| K54A_IMP_18 | Spouse's earned income-2 (Flag if imputed value) |
| K54A_IMP_18 | Spouse's earned income-2 (Flag if imputed value) |
| K56A_IMP_18 | Spouse's earned income-3 (Flag if imputed value) |
| K56A_IMP_18 | Spouse's earned income-3 (Flag if imputed value) |
| K56A_IMP_18 | Spouse's earned income-3 (Flag if imputed value) |
| K57A_IMP_18 | Spouse's earned income-4 (Flag if imputed value) |
| K57A_IMP_18 | Spouse's earned income-4 (Flag if imputed value) |
| K57A_IMP_18 | Spouse's earned income-4 (Flag if imputed value) |

|                                 |
|---------------------------------|
| <b>Household Capital Income</b> |
|---------------------------------|

| Wave | Variable  | Label  | Type  |
|------|-----------|--|-------|
| 1    | H1ISEMP   | hlisemp:w1 Income:H Earnings from business                   | Cont  |
| 2    | H2ISEMP   | h2isemp:w2 Income:H Earnings from business                   | Cont  |
| 3    | H3ISEMP   | h3isemp:w3 Income:H Earnings from business                   | Cont  |
| 4    | H4ISEMP   | h4isemp:w4 Income:H Earnings from business                   | Cont  |
| 5    | H5ISEMP   | h5isemp:w5 Income:H Earnings from business                   | Cont  |
| 1    | H1IFSEMP  | hlifsemp:w1 IncFlag:H Earnings from business                 | Categ |
| 2    | H2IFSEMP  | h2ifsemp:w2 IncFlag:H Earnings from business                 | Categ |
| 3    | H3IFSEMP  | h3ifsemp:w3 IncFlag:H Earnings from business                 | Categ |
| 4    | H4IFSEMP  | h4ifsemp:w4 IncFlag:H Earnings from business                 | Categ |
| 5    | H5IFSEMP  | h5ifsemp:w5 IncFlag:H Earnings from business                 | Categ |
| 1    | H1IRENT   | hlirent:w1 Income:H Rental income                            | Cont  |
| 2    | H2IRENT   | h2irent:w2 Income:H Rental income                            | Cont  |
| 3    | H3IRENT   | h3irent:w3 Income:H Rental income                            | Cont  |
| 4    | H4IRENT   | h4irent:w4 Income:H Rental income                            | Cont  |
| 5    | H5IRENT   | h5irent:w5 Income:H Rental income                            | Cont  |
| 1    | H1IFRENT  | hlifrent:w1 IncFlag:H Rental income                          | Categ |
| 2    | H2IFRENT  | h2ifrent:w2 IncFlag:H Rental income                          | Categ |
| 3    | H3IFRENT  | h3ifrent:w3 IncFlag:H Rental income                          | Categ |
| 4    | H4IFRENT  | h4ifrent:w4 IncFlag:H Rental income                          | Categ |
| 5    | H5IFRENT  | h5ifrent:w5 IncFlag:H Rental income                          | Categ |
| 1    | H1ITREST  | hlitrest:w1 Income:H Interest income from financial assets   | Cont  |
| 2    | H2ITREST  | h2itrest:w2 Income:H Interest income from financial assets   | Cont  |
| 3    | H3ITREST  | h3itrest:w3 Income:H Interest income from financial assets   | Cont  |
| 4    | H4ITREST  | h4itrest:w4 Income:H Interest income from financial assets   | Cont  |
| 5    | H5ITREST  | h5itrest:w5 Income:H Interest income from financial assets   | Cont  |
| 1    | H1IFTREST | hliftrest:w1 Impflag:H Interest income from financial assets | Categ |
| 2    | H2IFTREST | h2iftrest:w2 Impflag:H Interest income from financial assets | Categ |
| 3    | H3IFTREST | h3iftrest:w3 Impflag:H Interest income from financial assets | Categ |
| 4    | H4IFTREST | h4iftrest:w4 Impflag:H Interest income from financial assets | Categ |
| 5    | H5IFTREST | h5iftrest:w5 Impflag:H Interest income from financial assets | Categ |
| 1    | H1ICAP    | hlicap:w1 Income:H Capital Income                            | Cont  |
| 2    | H2ICAP    | h2icap:w2 Income:H Capital Income                            | Cont  |
| 3    | H3ICAP    | h3icap:w3 Income:H Capital Income                            | Cont  |
| 4    | H4ICAP    | h4icap:w4 Income:H Capital Income                            | Cont  |
| 5    | H5ICAP    | h5icap:w5 Income:H Capital Income                            | Cont  |
| 1    | H1IFCAP   | hlifcap:w1 IncFlag:H Capital Inc                             | Categ |
| 2    | H2IFCAP   | h2ifcap:w2 IncFlag:H Capital Inc                             | Categ |
| 3    | H3IFCAP   | h3ifcap:w3 IncFlag:H Capital Inc                             | Categ |
| 4    | H4IFCAP   | h4ifcap:w4 IncFlag:H Capital Inc                             | Categ |
| 5    | H5IFCAP   | h5ifcap:w5 IncFlag:H Capital Inc                             | Categ |

## Descriptive Statistics

| Variable | N     | Mean     | Std Dev   | Minimum     | Maximum     |
|----------|-------|----------|-----------|-------------|-------------|
| H1ISEMP  | 15636 | 25154.95 | 469626.52 | -6000000.00 | 27506664.00 |
| H2ISEMP  | 14032 | 32822.81 | 525179.42 | 0.00        | 30000000.00 |
| H3ISEMP  | 15723 | 25077.79 | 437181.01 | 0.00        | 36000000.00 |
| H4ISEMP  | 14745 | 17888.44 | 134710.11 | 0.00        | 4800000.00  |
| H5ISEMP  | 17094 | 39054.66 | 770823.51 | 0.00        | 60000000.00 |

|           |       |          |            |             |             |
|-----------|-------|----------|------------|-------------|-------------|
| H1IFSEMP  | 15186 | 0.06     | 0.25       | -1.00       | 1.00        |
| H2IFSEMP  | 13704 | 0.05     | 0.23       | -1.00       | 1.00        |
| H3IFSEMP  | 15723 | 0.03     | 0.17       | 0.00        | 1.00        |
| H4IFSEMP  | 14779 | 0.02     | 0.16       | -1.00       | 1.00        |
| H5IFSEMP  | 17114 | 0.03     | 0.17       | -1.00       | 1.00        |
|           |       |          |            |             |             |
| H1IRENT   | 15636 | 21201.53 | 1098904.32 | -6000000.00 | 90000000.00 |
| H2IRENT   | 14032 | 2434.64  | 29388.49   | -300000.00  | 960000.00   |
| H3IRENT   | 15723 | 4906.16  | 168221.64  | -1200000.00 | 8430600.00  |
| H4IRENT   | 14745 | 5649.63  | 173288.62  | -1200000.00 | 11940000.00 |
| H5IRENT   | 17094 | 878.52   | 61420.95   | -4800000.00 | 900000.00   |
|           |       |          |            |             |             |
| H1IFRENT  | 15186 | 0.00     | 0.11       | -1.00       | 1.00        |
| H2IFRENT  | 13704 | 0.01     | 0.11       | -1.00       | 1.00        |
| H3IFRENT  | 15723 | 0.01     | 0.12       | 0.00        | 1.00        |
| H4IFRENT  | 14779 | 0.01     | 0.12       | -1.00       | 1.00        |
| H5IFRENT  | 17114 | 0.01     | 0.12       | -1.00       | 1.00        |
|           |       |          |            |             |             |
| H1ITREST  | 15636 | 927.84   | 6500.70    | 0.00        | 165300.00   |
| H2ITREST  | 14032 | 460.72   | 4126.64    | 0.00        | 106923.75   |
| H3ITREST  | 15723 | 1327.33  | 30831.86   | 0.00        | 2400000.00  |
| H4ITREST  | 14745 | 7690.25  | 559878.52  | 0.00        | 48032464.00 |
| H5ITREST  | 17094 | 11349.16 | 258447.92  | 0.00        | 10466244.00 |
|           |       |          |            |             |             |
| H1IFTREST | 15186 | 0.03     | 0.19       | -1.00       | 1.00        |
| H2IFTREST | 13704 | 0.02     | 0.17       | -1.00       | 1.00        |
| H3IFTREST | 15723 | 0.02     | 0.14       | 0.00        | 1.00        |
| H4IFTREST | 14779 | 0.01     | 0.14       | -1.00       | 1.00        |
| H5IFTREST | 17114 | 0.01     | 0.13       | -1.00       | 1.00        |
|           |       |          |            |             |             |
| H1ICAP    | 15636 | 47284.32 | 1264500.12 | -6000000.00 | 90000000.00 |
| H2ICAP    | 14032 | 35718.17 | 530366.33  | -300000.00  | 30474000.00 |
| H3ICAP    | 15723 | 31311.28 | 469786.94  | -1200000.00 | 36000000.00 |
| H4ICAP    | 14745 | 31228.32 | 644602.58  | -1200000.00 | 51558275.25 |
| H5ICAP    | 17094 | 51282.33 | 827681.05  | -4800000.00 | 60000000.00 |
|           |       |          |            |             |             |
| H1IFCAP   | 15186 | 0.09     | 0.30       | -1.00       | 1.00        |
| H2IFCAP   | 13704 | 0.08     | 0.28       | -1.00       | 1.00        |
| H3IFCAP   | 15723 | 0.06     | 0.23       | 0.00        | 1.00        |
| H4IFCAP   | 14779 | 0.04     | 0.21       | -1.00       | 1.00        |
| H5IFCAP   | 17114 | 0.05     | 0.23       | -1.00       | 1.00        |

Categorical Variable Codes

|                                  |           |           |           |           |           |
|----------------------------------|-----------|-----------|-----------|-----------|-----------|
| Value-----                       | H1IFSEMP  | H2IFSEMP  | H3IFSEMP  | H4IFSEMP  | H5IFSEMP  |
| -1.No Imput:section not complete | 59        | 31        |           | 34        | 20        |
| 0.Not imputed                    | 14194     | 12960     | 15237     | 14389     | 16616     |
| 1.Imputed                        | 933       | 713       | 486       | 356       | 478       |
|                                  |           |           |           |           |           |
| Value-----                       | H1IFRENT  | H2IFRENT  | H3IFRENT  | H4IFRENT  | H5IFRENT  |
| -1.No Imput:section not complete | 59        | 31        |           | 34        | 20        |
| 0.Not imputed                    | 14993     | 13529     | 15501     | 14570     | 16851     |
| 1.Imputed                        | 134       | 144       | 222       | 175       | 243       |
|                                  |           |           |           |           |           |
| Value-----                       | H1IFTREST | H2IFTREST | H3IFTREST | H4IFTREST | H5IFTREST |
| -1.No Imput:section not complete | 59        | 31        |           | 34        | 20        |
| 0.Not imputed                    | 14598     | 13314     | 15391     | 14504     | 16836     |
| 1.Imputed                        | 529       | 359       | 332       | 241       | 258       |
|                                  |           |           |           |           |           |
| Value-----                       | H1IFCAP   | H2IFCAP   | H3IFCAP   | H4IFCAP   | H5IFCAP   |
| -1.No Imput:section not complete | 59        | 31        |           | 34        | 20        |
| 0.Not imputed                    | 13648     | 12538     | 14833     | 14079     | 16199     |
| 1.Imputed                        | 1479      | 1135      | 890       | 666       | 895       |

## How Constructed

HwISEMP captures the household's business income at an annual-level. At Wave 1, HwISEMP is derived using questions about income and expenses from a business or farm. Starting in Wave 2, HwISEMP is derived using questions about profits from a business or farm. Business income questions are asked without instruction as to whether these amounts should be reported before or after tax.

The informant for the subject or the couple is asked "do you (and/or spouse) own a business or farm?". If the respondent answers yes, they are then asked "during the last year, did this business generate income for you (and/or your spouse)?" If the business did generate income they are asked "about how much income did this business generate in a typical month? Consider income before expenses." All respondents who report owning a business/farm are also asked "about how much did you spend on this business in a typical month?". Starting in Wave 2, all respondents who report owning a business/farm are also asked "how much profit does this business give you (and/or your spouse) in a typical month?" At Wave 1, HwISEMP is derived as the gross monthly income minus the monthly expenses of the business, multiplied by 12. Starting in Wave 2, HwISEMP is derived as the profit of the business, multiplied by 12. In the case that neither the respondent nor the spouse owns a business, HwISEMP has a value of 0.

HwIRENT captures the household's rental income at an annual-level. At Wave 1, 2, and 3 HwIRENT includes gross income minus expenses from real estate property (other than the main and primary house), land, vacant lots, and properties for rent. In Wave 4 HwIRENT includes income generated from the current or secondary residence and gross income minus expenses from real estate property (other than the main and primary house), land, vacant lots, and properties for rent. Starting in Wave 5, respondents were asked to report both the gross income and the expenses on only one property, the most important one. Rental income questions are asked without instruction as to whether these amounts should be reported before or after tax.

The informant for the subject or the couple is asked "excluding your main house or second residence, do you (or your spouse) own any real estate property, such as land, vacant lots and/or properties for rent?". If the respondent answers yes, they are then asked "during the last year, did this property generate income for you (and/or your spouse)?" If the property did generate income they are asked "about how much income did this property generate in a typical month? Consider income before expenses." All respondents who report owning real estate are also asked "about how much did you spend on this property in a typical month?". Starting in Wave 4, MHAS added a question to all household respondents asking "Does the house you live in (or the second residence) generate you income?" If the respondent answers yes, they are then asked "About how much per month?" At Waves 1, 2, and 3 HwIRENT is derived as the gross monthly income minus the monthly expenses of the property, multiplied by 12. In the case that neither the respondent nor spouse owns real estate, HwIRENT has a value of 0. In the case that neither the respondent nor spouse owns real estate, HwIRENT has a value of 0. Starting at Wave 4 HwIRENT is derived as the rental income from the current or secondary residence plus the gross monthly income minus the monthly expenses of the property, all multiplied by 12. In the case that the current or secondary residence does not generate income and neither the respondent nor spouse owns real estate, HwIRENT has a value of 0.

HwITREST captures the household's income from financial assets at an annual-level. HwITREST includes income generated from checking, saving accounts, fixed investments, loans made to others, stocks, company shares, and bonds. Questions about income from financial assets are asked without instruction as to whether these amounts should be reported before or after tax.

The informant for the subject or the couple is asked "Do you (and/or your spouse) have checking or saving account, or fixed investment?". If the respondent answers yes, they are then asked "During the previous year, did these [assets] generate income for you (and/or your spouse)?" If the asset did generate income they are asked "about how much per month?" Next the informant for the subject or the couple is asked "Do you (and/or your spouse) have loans made out to others?". If the respondent answers yes, they are then asked "During the previous year, did these [assets] generate income for you (and/or your spouse)?" If the asset did generate income they are asked "about how much per month?" Next the informant for the subject or the couple is asked "Do you (and/or your spouse) have stocks, company shares or bonds?". If the respondent answers yes, they are then asked "During the previous year, did these [assets] generate income for you (and/or your spouse)?" If the asset did generate income they are asked "about how much per month?" HwITREST is derived as the sum of the monthly income generated from checking or saving account, or fixed investment, loans made out to others, and stocks, company shares, or bonds, multiplied by 12. In the case that neither the respondent nor spouse has checking or saving account, fixed investment, loans made out to others, stocks, company shares, or bonds, or that the respondent or spouse have these assets but they did not generate any income from them in the last year, HwITREST has a value of 0.

For all questions eliciting a value included in HwISEMP, HwIRENT, or HwITREST the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

HwISEMP, HwIRENT, and HwITREST are derived at the household level. In MHAS this is a couple or a single person. Special missing .m is used if at least one component of HwISEMP, HwIRENT, and HwITREST was not imputed because the respondent did not complete the section. HwISEMP, HwIRENT, and HwITREST are set to blank missing (.) if the respondent did not participate in the current wave.

HwIFSEMP, HwIFRENT, and HwIFTREST are flag variables indicating whether or not any component of HwISEMP, HwIRENT, and HwITREST was imputed, respectively. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

HwICAP captures the household's total capital income at an annual-level and is based on information from:

Income from business earnings, as previously described

Income from rental income, as previously described

Income from financial assets, as previously described

HwICAP is constructed as the sum of the income from business earnings, rental income, and interest income from financial assets. All components of this variable are constructed at the household level and include imputed values. In MHAS, the household is a couple or a single person. Special missing .m is used if at least one component of HwICAP was not imputed because the respondent did not complete the section. HwICAP is set to blank missing (.) if the respondent did not participate in the current wave.

HwIFCAP is a flag variable based on the original flag variables (previously defined as HwIFSEMP, HwIFRENT, and HwIFTREST), indicating whether or not any component of HwICAP was imputed. A code of 0 indicates that no component of HwICAP was imputed. A code of 1 indicates that at least one component of HwICAP was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

## Cross Wave Differences in MHAS

Starting in Wave 2, the MHAS added a question which asked "How much profit does this business give you (and/or your spouse) in a typical month?" With this change the derivation of HwISEMP also changed so that starting in Wave 2 HwISEMP is derived using the monthly profit of the business multiplied by 12 instead of the gross monthly income minus the monthly expenses of the business, multiplied by 12 as was used at Wave 1. Due to this change, it is possible that HwISEMP takes negative values in Wave 2. However, the question regarding the business profit only allows positive values (thus the minimum possible value for HwISEMP is 0).

In Wave 4, MHAS added a question to all household respondents asking "Does the house you live in (or the second residence) generate you income?" If the respondent answers yes, they are then asked "About how much per month?" With this change the derivation of HwIRENT also changed so that starting in Wave 4 HwIRENT is derived by adding the income generated from the current or secondary residence to the gross monthly income minus the monthly expenses of the property, all multiplied by 12 instead of just the the gross monthly income minus the monthly expenses of the property multiplied by 12 as was used before Wave 4. Starting in Wave 5, respondents were asked to report both the gross income and the expenses on only one property, the most important one.

## Differences with the RAND HRS/Harmonized HRS

In the HRS respondents are asked about income from household business or farm income, self-employment earnings, business income, gross rent, dividend and interest income, trust funds or royalties, and other asset income. In the MHAS, respondents are not specifically asked about self-employment earnings but are



asked about all earnings from the principal and secondary job. These values of all earnings are captured in RwieARN. Also different, the MHAS does not ask about income from "other" assets.

In the HRS, respondents are instructed to report capital income before taxes and deductions. In the MHAS, capital income questions are asked without instruction as to whether these amounts should be reported before or after tax.

Capital income in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

## MHAS Variables Used

### Wave 1:

|          |                                   |
|----------|-----------------------------------|
| IMAM10_1 | business income-1 (imputed)       |
| IMAM10_2 | business income-2 (imputed)       |
| IMAM13_1 | business expenditures-1 (imputed) |
| IMAM13_2 | business expenditures-2 (imputed) |
| IMAM24_1 | property rent income-1 (imputed)  |
| IMAM24_2 | property rent income-2 (imputed)  |
| IMAM27_1 | property expenditures-1 (imputed) |
| IMAM27_2 | property expenditures-2 (imputed) |
| IMAM33_1 | capital assets income-1 (imputed) |
| IMAM33_2 | capital assets income-2 (imputed) |
| IMAM33_3 | capital assets income-3 (imputed) |
| K10_1IMP | if imputed value                  |
| K10_2IMP | if imputed value                  |
| K13_1IMP | if imputed value                  |
| K13_2IMP | if imputed value                  |
| K24_1IMP | if imputed value                  |
| K24_2IMP | if imputed value                  |
| K27_1IMP | if imputed value                  |
| K27_2IMP | if imputed value                  |
| K33_1IMP | if imputed value                  |
| K33_2IMP | if imputed value                  |
| K33_3IMP | if imputed value                  |

### Wave 2:

|          |                                   |
|----------|-----------------------------------|
| IMAM15_1 | business profits-1 (imputed)      |
| IMAM15_2 | business profits-2 (imputed)      |
| IMAM26_1 | property rent income-1 (imputed)  |
| IMAM26_2 | property rent income-2 (imputed)  |
| IMAM29_1 | property expenditures-1 (imputed) |
| IMAM29_2 | property expenditures-2 (imputed) |
| IMAM35_1 | capital assets income-1 (imputed) |
| IMAM35_2 | capital assets income-2 (imputed) |
| IMAM35_3 | capital assets income-3 (imputed) |
| K15_1IMP | if imputed value                  |
| K15_2IMP | if imputed value                  |
| K26_1IMP | if imputed value                  |
| K26_2IMP | if imputed value                  |
| K29_1IMP | if imputed value                  |
| K29_2IMP | if imputed value                  |
| K35_1IMP | if imputed value                  |
| K35_2IMP | if imputed value                  |
| K35_3IMP | if imputed value                  |

### Wave 3:

|              |                                   |
|--------------|-----------------------------------|
| IMAMK15_1_12 | Business profits-1 (imputed)      |
| IMAMK15_2_12 | Business profits-2 (imputed)      |
| IMAMK27_1_12 | Property rent income-1 (imputed)  |
| IMAMK27_2_12 | Property rent income-2 (imputed)  |
| IMAMK29_1_12 | Property expenditures-1 (imputed) |
| IMAMK29_2_12 | Property expenditures-2 (imputed) |
| IMAMK36_1_12 | Capital assets income-1 (imputed) |
| IMAMK36_2_12 | Capital assets income-2 (imputed) |

|              |   |
|--------------|---|
| IMAMK36_3_12 | Capital assets income-3 (imputed)               |
| K15_1_IMP_12 | Business profits-1 (Flag if imputed value)      |
| K15_2_IMP_12 | Business profits-2 (Flag if imputed value)      |
| K27_1_IMP_12 | Property rent income-1 (Flag if imputed value)  |
| K27_2_IMP_12 | Property rent income-2 (Flag if imputed value)  |
| K29_1_IMP_12 | Property expenditures-1 (Flag if imputed value) |
| K29_2_IMP_12 | Property expenditures-2 (Flag if imputed value) |
| K36_1_IMP_12 | Capital assets income-1 (Flag if imputed value) |
| K36_2_IMP_12 | Capital assets income-2 (Flag if imputed value) |
| K36_3_IMP_12 | Capital assets income-3 (Flag if imputed value) |

## Wave 4:

|              |   |
|--------------|---|
| IMAMJ36B_15  | Rent from residence (imputed)                   |
| IMAMK15_1_15 | Business profits-1 (imputed)                    |
| IMAMK15_2_15 | Business profits-2 (imputed)                    |
| IMAMK27_1_15 | Property rent income-1 (imputed)                |
| IMAMK27_2_15 | Property rent income-2 (imputed)                |
| IMAMK29_1_15 | Property expenditures-1 (imputed)               |
| IMAMK29_2_15 | Property expenditures-2 (imputed)               |
| IMAMK36_1_15 | Capital assets income-1 (imputed)               |
| IMAMK36_2_15 | Capital assets income-2 (imputed)               |
| IMAMK36_3_15 | Capital assets income-3 (imputed)               |
| J36B_IMP_15  | Rent from residence (Flag if imputed value)     |
| K15_1_IMP_15 | Business profits-1 (Flag if imputed value)      |
| K15_2_IMP_15 | Business profits-2 (Flag if imputed value)      |
| K27_1_IMP_15 | Property rent income-1 (Flag if imputed value)  |
| K27_2_IMP_15 | Property rent income-2 (Flag if imputed value)  |
| K29_1_IMP_15 | Property expenditures-1 (Flag if imputed value) |
| K29_2_IMP_15 | Property expenditures-2 (Flag if imputed value) |
| K36_1_IMP_15 | Capital assets income-1 (Flag if imputed value) |
| K36_2_IMP_15 | Capital assets income-2 (Flag if imputed value) |
| K36_3_IMP_15 | Capital assets income-3 (Flag if imputed value) |

## Wave 5:

|              |   |
|--------------|---|
| IMAMJ36B_18  | Rent from residence (imputed)                   |
| IMAMK15_1_18 | Business profits-1 (imputed)                    |
| IMAMK15_2_18 | Business profits-2 (imputed)                    |
| IMAMK27_1_18 | Property rent income (imputed)                  |
| IMAMK29_1_18 | Property expenditures (imputed)                 |
| IMAMK36_1_18 | Capital assets income-1 (imputed)               |
| IMAMK36_2_18 | Capital assets income-2 (imputed)               |
| IMAMK36_3_18 | Capital assets income-3 (imputed)               |
| J36B_IMP_18  | Rent from residence (Flag if imputed value)     |
| K15_1_IMP_18 | Business profits-1 (Flag if imputed value)      |
| K15_2_IMP_18 | Business profits-2 (Flag if imputed value)      |
| K27_1_IMP_18 | Property rent income (Flag if imputed value)    |
| K29_1_IMP_18 | Property expenditures (Flag if imputed value)   |
| K36_1_IMP_18 | Capital assets income-1 (Flag if imputed value) |
| K36_2_IMP_18 | Capital assets income-2 (Flag if imputed value) |
| K36_3_IMP_18 | Capital assets income-3 (Flag if imputed value) |

Individual Income from Private Pension

| Wave | Variable | Label                                   | Type  |
|------|----------|---|-------|
| 1    | R1IPENA  | rlipena:w1 Income:R Pension + Annuity   | Cont  |
| 2    | R2IPENA  | r2ipena:w2 Income:R Pension + Annuity   | Cont  |
| 5    | R5IPENA  | r5ipena:w5 Income:R Pension + Annuity   | Cont  |
| 1    | S1IPENA  | slipena:w1 Income:S Pension + Annuity   | Cont  |
| 2    | S2IPENA  | s2ipena:w2 Income:S Pension + Annuity   | Cont  |
| 5    | S5IPENA  | s5ipena:w5 Income:S Pension + Annuity   | Cont  |
| 1    | R1IFPENA | rlifpena:w1 ImpFlag:R Pension + Annuity | Categ |
| 2    | R2IFPENA | r2ifpena:w2 ImpFlag:R Pension + Annuity | Categ |
| 5    | S5IFPENA | s5ifpena:w5 ImpFlag:S Pension + Annuity | Categ |
| 1    | S1IFPENA | slifpena:w1 ImpFlag:S Pension + Annuity | Categ |
| 2    | S2IFPENA | s2ifpena:w2 ImpFlag:S Pension + Annuity | Categ |
| 5    | S5IFPENA | s5ifpena:w5 ImpFlag:S Pension + Annuity | Categ |

Descriptive Statistics

| Variable | N     | Mean   | Std Dev | Minimum | Maximum   |
|----------|-------|--------|---------|---------|-----------|
| R1IPENA  | 15114 | 122.56 | 3945.22 | 0.00    | 360000.00 |
| R2IPENA  | 13662 | 112.51 | 4207.83 | 0.00    | 324000.00 |
| R5IPENA  | 16783 | 296.06 | 8896.13 | 0.00    | 540000.00 |
| S1IPENA  | 10821 | 97.97  | 3968.60 | 0.00    | 360000.00 |
| S2IPENA  | 9665  | 101.37 | 3534.96 | 0.00    | 216000.00 |
| S5IPENA  | 11641 | 249.36 | 8805.09 | 0.00    | 540000.00 |
| R1IFPENA | 15114 | 0.00   | 0.01    | 0.00    | 1.00      |
| R2IFPENA | 13662 | 0.00   | 0.01    | 0.00    | 1.00      |
| S5IFPENA | 11641 | 0.00   | 0.01    | 0.00    | 1.00      |
| S1IFPENA | 10822 | 0.00   | 0.01    | -1.00   | 1.00      |
| S2IFPENA | 9666  | 0.00   | 0.01    | -1.00   | 1.00      |
| S5IFPENA | 11641 | 0.00   | 0.01    | 0.00    | 1.00      |

Categorical Variable Codes

| Value-----                       | R1IFPENA | R2IFPENA | S5IFPENA |
|----------------------------------|----------|----------|----------|
| .m:Missing                       | 72       | 42       | 427      |
| .u:Unmar                         |          |          | 5223     |
| 0.Not imputed                    | 15112    | 13661    | 11640    |
| 1.Imputed                        | 2        | 1        | 1        |
| Value-----                       | S1IFPENA | S2IFPENA | S5IFPENA |
| .m:Missing                       | 176      | 30       | 427      |
| .u:Unmar                         | 4188     | 4008     | 5223     |
| -1.No Imput:section not complete | 1        | 1        |          |
| 0.Not imputed                    | 10820    | 9664     | 11640    |
| 1.Imputed                        | 1        | 1        | 1        |

How Constructed

RwIPENA and SwIPENA capture the respondent's and spouse's individual income from private pensions at an annual-level, respectively. RwIPENA and SwIPENA include income from all pensions from a private provider, including retirement pensions, widowhood pensions, disability or work accident pensions, or other pensions. Private pension income questions are asked without instruction as to whether these amounts should be reported before or after tax.

Income questions about the respondent and the respondent's spouse (if applicable) are asked separately, but both are answered by the financial respondent. If the financial respondent is the respondent, then questions the financial respondent answers about him/herself are assigned to the respondent and those about their spouse are assigned to the spouse. However, if the financial respondent is the respondent's spouse, then questions the financial respondent answers about him/herself are assigned to the spouse and those concerning their spouse are assigned to the respondent. Proxy respondents can also answer these income questions in the place of the respondent or their spouse and, in the case that they do, they are asked to answer about the respondent and their spouse (if applicable), and financial information is then assigned respectively.

The financial respondent is first asked "Excluding income you have already mentioned, during the last year did you receive income from retirement pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "Private". If they answer "Private", they are asked "About how much was it in a typical month?" The financial respondent is next asked "Excluding income you have already mentioned, during the last year did you receive income from widowhood pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "Private". If they answer "Private", they are asked "About how much was it in a typical month?" The financial respondent is next asked "Excluding income you have already mentioned, during the last year did you receive income from disability or work accident pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "Private". If they answer "Private", they are asked "About how much was it in a typical month?" The financial respondent is finally asked "Excluding income you have already mentioned, during the last year did you receive income from other pensions." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "Private". If they answer "Private", they are asked "About how much was it in a typical month?" RwiPENa is derived as yearly income from private pensions by adding the reported monthly private pension income from retirement pensions, widowhood pensions, disability or work accident pensions, or other pensions, and then multiplying by 12. In the case that the respondent does not receive any pension income from a private provider, RwiPENa has a value of 0. Special missing .m is used if at least one component of RwiPENa was not imputed because the section was not completed. RwiPENa is set to blank missing (.) if the respondent did not participate in the current wave.

If the respondent has a spouse, the financial respondent is first asked "Excluding income you have already mentioned, during the last year did your spouse receive income from retirement pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "Private". If they answer "Private", they are asked "About how much was it in a typical month?" The financial respondent is next asked "Excluding income you have already mentioned, during the last year did your spouse receive income from widowhood pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "Private". If they answer "Private", they are asked "About how much was it in a typical month?" The financial respondent is next asked "Excluding income you have already mentioned, during the last year did your spouse receive income from disability or work accident pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "Private". If they answer "Private", they are asked "About how much was it in a typical month?" The financial respondent is finally asked "Excluding income you have already mentioned, during the last year did your spouse receive income from other pensions." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "Private". If they answer "Private", they are asked "About how much was it in a typical month?" SwIPENa is derived as yearly income from private pensions by adding the reported monthly private pension income from retirement pensions, widowhood pensions, disability or work accident pensions, or other pensions, and then multiplying by 12. In the case that the spouse does not receive any pension income from a private provider, SwIPENa has a value of 0. Special missing .m is used if at least one component of SwIPENa was not imputed because the section was not completed. Special missing value .u is used when the respondent does not have a spouse at this wave. SwIPENa is set to blank missing (.) if the respondent did not participate in the current wave.

For questions eliciting a value included in RwiPENa and SwIPENa, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

RwIFPENA and SwIPENA are flag variables indicating whether or not any component of RwIPENA or SwIPENA was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing. RwIFPENA and SwIFPENA are set to blank missing (.) if the respondent did not participate in the current wave.

## Cross Wave Differences in MHAS

In Waves 1 and 2 of MHAS, respondents were allowed to identify a single pension type for retirement pensions, widowhood pensions, disability or work accident pensions, or other pensions, and RwIPENA was able to be created. In Waves 3 and 4 of MHAS, respondents were allowed to identify multiple pension providers for each type of pension but were only asked one amount, regardless of how many different providers were identified. Given this, in Waves 3 and 4, it is not possible to identify private pension income exclusively from other pension providers and RwIPENA cannot be created. Starting in Wave 5, respondents were asked to report up to two pensions types for retirement pensions, widowhood pensions, disability or work accident pensions, or other pensions and for each of these they had to select only one provider. Thus, it was possible to create RwIPENA again in Wave 5.

A total measure of pension income is available for all waves in the variable RwIPENT.

## Differences with the RAND HRS/Harmonized HRS

In the HRS, respondents are instructed to report pension income before taxes and deductions. In the MHAS, pension income questions are asked without instruction as to whether these amounts should be reported before or after tax.

Individual income from private pensions in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

## MHAS Variables Used

### Wave 1:

|         |   |
|---------|---|
| IMAM55A | own pension income -retirement (imputed)      |
| IMAM55B | own pension income -widow (imputed)           |
| IMAM55C | own pension income -disability (imputed)      |
| IMAM55D | own other pension income                      |
| IMAM61A | spouse's pension income -retirement (imputed) |
| IMAM61B | spouse's pension income -widow (imputed)      |
| IMAM61C | spouse's pension income -disability (imputed) |
| IMAM61D | spouse's other pension income (imputed)       |
| K55AIMP | if imputed value                              |
| K55BIMP | if imputed value                              |
| K55CIMP | if imputed value                              |
| K55DIMP | if imputed value                              |
| K56_1   | source of retirement pension                  |
| K56_2   | source of widowhood pension                   |
| K56_3   | source of disability pension                  |
| K56_4   | source of other pension                       |
| K61AIMP | if imputed value                              |
| K61BIMP | if imputed value                              |
| K61CIMP | if imputed value                              |
| K61DIMP | if imputed value                              |
| K62_1   | source of retirement pension of spouse        |
| K62_2   | source of widowhood pension of spouse         |
| K62_3   | source of disability pension of spouse        |
| K62_4   | source of other pension of spouse             |

### Wave 2:

|         |   |
|---------|---|
| IMAM58A | own pension income -retirement (imputed)      |
| IMAM58B | own pension income -widow (imputed)           |
| IMAM58C | own pension income -disability (imputed)      |
| IMAM58D | own other pension income                      |
| IMAM64C | spouse's pension income -retirement (imputed) |

|         |   |
|---------|---|
| IMAM64D | spouse's pension income -widow (imputed)      |
| IMAM64E | spouse's pension income -disability (imputed) |
| IMAM64F | spouse's other pension income (imputed)       |
| K58AIMP | if imputed value                              |
| K58BIMP | if imputed value                              |
| K58DIMP | if imputed value                              |
| K59A    | source of retirement pension                  |
| K59B    | source of widowhood pension                   |
| K59C    | source of disability pension                  |
| K59D    | source of other pension                       |
| K64CIMP | if imputed value                              |
| K64DIMP | if imputed value                              |
| K64EIMP | if imputed value                              |
| K64FIMP | if imputed value                              |
| K65C    | source of retirement pension of spouse        |
| K65D    | source of widowhood pension of spouse         |
| K65E    | source of disability pension of spouse        |
| K65F    | source of other pension of spouse             |

## Wave 5:

|                |   |
|----------------|---|
| IMAMK61_1_1_18 | Own pension income -retirement 1 (imputed)              |
| IMAMK61_1_2_18 | Own pension income -retirement 2 (imputed)              |
| IMAMK61_2_1_18 | Own pension income -widow 1 (imputed)                   |
| IMAMK61_2_2_18 | Own pension income -widow 2 (imputed)                   |
| IMAMK61_3_1_18 | Own pension income -disability 1 (imputed)              |
| IMAMK61_3_2_18 | Own pension income -disability 2 (imputed)              |
| IMAMK61_4_1_18 | Own other pension income 1 (imputed)                    |
| IMAMK61_4_2_18 | Own other pension income 2 (imputed)                    |
| IMAMK67_1_1_18 | Spouse's pension income - retirement 1 (imputed)        |
| IMAMK67_1_2_18 | Spouse's pension income - retirement 2 (imputed)        |
| IMAMK67_2_1_18 | Spouse's pension income - widow 1 (imputed)             |
| IMAMK67_2_2_18 | Spouse's pension income - widow 2 (imputed)             |
| IMAMK67_3_1_18 | Spouse's pension income - disability 1 (imputed)        |
| IMAMK67_3_2_18 | Spouse's pension income - disability 2 (imputed)        |
| IMAMK67_4_1_18 | Spouse's other pension income 1 (imputed)               |
| IMAMK67_4_2_18 | Spouse's other pension income 2 (imputed)               |
| K58A_18        | Last year: Did respondent receive pension income from r |
| K58B_18        | Last year: Did respondent receive widowhood pension inc |
| K58C_18        | Last year: Did respondent receive disability pension in |
| K58D_18        | Last year: Did respondent receive income from other pen |
| K59_1_1_18     | Respondent's retirement pension source (First Pension)  |
| K59_1_2_18     | Respondent's retirement pension source (Second Pension) |
| K59_2_1_18     | Respondent's widowhood pension source (First Pension)   |
| K59_2_2_18     | Respondent's widowhood pension source (Second Pension)  |
| K59_3_1_18     | Respondent's disability pension source (First Pension)  |
| K59_3_2_18     | Respondent's disability pension source (Second Pension) |
| K59_4_1_18     | Respondent's other pension(s) source (First Pension)    |
| K59_4_2_18     | Respondent's other pension(s) source (Second Pension)   |
| K61_1_1_IMP_18 | Own pension income -retirement 1 (Flag if imputed value |
| K61_1_2_IMP_18 | Own pension income -retirement 2 (Flag if imputed value |
| K61_2_1_IMP_18 | Own pension income -widow 1 (Flag if imputed value)     |
| K61_2_2_IMP_18 | Own pension income -widow 2 (Flag if imputed value)     |
| K61_3_1_IMP_18 | Own pension income -disability 1 (Flag if imputed value |
| K61_3_2_IMP_18 | Own pension income -disability 2 (Flag if imputed value |
| K61_4_1_IMP_18 | Own other pension income 1 (Flag if imputed value)      |
| K61_4_2_IMP_18 | Own other pension income 2 (Flag if imputed value)      |
| K64C_18        | Last year: Did respondent's spouse receive retirement p |
| K64D_18        | Last year: Did respondent's spouse receive widowhood pe |
| K64E_18        | Last year: Did respondent's spouse receive disability p |
| K64F_18        | Last year: Did respondent's spouse receive income from  |
| K65_1_1_18     | Spouse's retirement pension source (First Pension)      |
| K65_1_2_18     | Spouse's retirement pension source (Second Pension)     |
| K65_2_1_18     | Spouse's widowhood pension income source (First Pension |
| K65_2_2_18     | Spouse's widowhood pension income source (Second Pensio |
| K65_3_1_18     | Spouse's disability pension income source (First Pensio |

|                |   |
|----------------|---|
| K65_3_2_18     | Spouse's disability pension income source (Second Pensi |
| K65_4_1_18     | Spouse's other pension(s) income source (First Pension) |
| K65_4_2_18     | Spouse's other pension(s) income source (Second Pension |
| K67_1_1_IMP_18 | Spouse's pension income - retirement 1 (Flag if imputed |
| K67_1_2_IMP_18 | Spouse's pension income - retirement 2 (Flag if imputed |
| K67_2_1_IMP_18 | Spouse's pension income - widow 1 (Flag if imputed valu |
| K67_2_2_IMP_18 | Spouse's pension income - widow 2 (Flag if imputed valu |
| K67_3_1_IMP_18 | Spouse's pension income - disability 1 (Flag if imputed |
| K67_3_2_IMP_18 | Spouse's pension income - disability 2 (Flag if imputed |
| K67_4_1_IMP_18 | Spouse's other pension income 1 (Flag if imputed value) |
| K67_4_2_IMP_18 | Spouse's other pension income 2 (Flag if imputed value) |

|   |
|---|
| <b>Individual Public Pension Income</b> |
|---|

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 1    | R1ISRET    | r1isret:w1 Income:R Public Old Age + Survivor Pensions   | Cont  |
| 2    | R2ISRET    | r2isret:w2 Income:R Public Old Age + Survivor Pensions   | Cont  |
| 5    | R5ISRET    | r5isret:w5 Income:R Public Old Age + Survivor Pensions   | Cont  |
| 1    | S1ISRET    | s1isret:w1 Income:S Public Old Age + Survivor Pensions   | Cont  |
| 2    | S2ISRET    | s2isret:w2 Income:S Public Old Age + Survivor Pensions   | Cont  |
| 5    | S5ISRET    | s5isret:w5 Income:S Public Old Age + Survivor Pensions   | Cont  |
| 1    | R1IFSRET   | rlifsret:w1 IncFlag:R Public Old Age + Survivor Pensions | Categ |
| 2    | R2IFSRET   | r2ifsret:w2 IncFlag:R Public Old Age + Survivor Pensions | Categ |
| 5    | R5IFSRET   | r5ifsret:w5 IncFlag:R Public Old Age + Survivor Pensions | Categ |
| 1    | S1IFSRET   | slifsret:w1 IncFlag:S Public Old Age + Survivor Pensions | Categ |
| 2    | S2IFSRET   | s2ifsret:w2 IncFlag:S Public Old Age + Survivor Pensions | Categ |
| 5    | S5IFSRET   | s5ifsret:w5 IncFlag:S Public Old Age + Survivor Pensions | Categ |
| 1    | R1ISSDI    | rlissdi:w1 Income:R Public Disability Pensions           | Cont  |
| 2    | R2ISSDI    | r2issdi:w2 Income:R Public Disability Pensions           | Cont  |
| 5    | R5ISSDI    | r5issdi:w5 Income:R Public Disability Pensions           | Cont  |
| 1    | S1ISSDI    | slissdi:w1 Income:S Public Disability Pensions           | Cont  |
| 2    | S2ISSDI    | s2issdi:w2 Income:S Public Disability Pensions           | Cont  |
| 5    | S5ISSDI    | s5issdi:w5 Income:S Public Disability Pensions           | Cont  |
| 1    | R1IFSSDI   | rlifssdi:w1 IncFlag:R Public Disability Pensions         | Categ |
| 2    | R2IFSSDI   | r2ifssdi:w2 IncFlag:R Public Disability Pensions         | Categ |
| 5    | R5IFSSDI   | r5ifssdi:w5 IncFlag:R Public Disability Pensions         | Categ |
| 1    | S1IFSSDI   | slifssdi:w1 IncFlag:S Public Disability Pensions         | Categ |
| 2    | S2IFSSDI   | s2ifssdi:w2 IncFlag:S Public Disability Pensions         | Categ |
| 5    | S5IFSSDI   | s5ifssdi:w5 IncFlag:S Public Disability Pensions         | Categ |
| 1    | R1IPUBO    | rlipubo:w1 Income:R Other Public Pensions                | Cont  |
| 2    | R2IPUBO    | r2ipubo:w2 Income:R Other Public Pensions                | Cont  |
| 5    | R5IPUBO    | r5ipubo:w5 Income:R Other Public Pensions                | Cont  |
| 1    | S1IPUBO    | slipubo:w1 Income:S Other Public Pensions                | Cont  |
| 2    | S2IPUBO    | s2ipubo:w2 Income:S Other Public Pensions                | Cont  |
| 5    | S5IPUBO    | s5ipubo:w5 Income:S Other Public Pensions                | Cont  |
| 1    | R1IFPUBO   | rlifpubo:w1 IncFlag:R Other Public Pensions              | Categ |
| 2    | R2IFPUBO   | r2ifpubo:w2 IncFlag:R Other Public Pensions              | Categ |
| 5    | R5IFPUBO   | r5ifpubo:w5 IncFlag:R Other Public Pensions              | Categ |
| 1    | S1IFPUBO   | slifpubo:w1 IncFlag:S Other Public Pensions              | Categ |
| 2    | S2IFPUBO   | s2ifpubo:w2 IncFlag:S Other Public Pensions              | Categ |
| 5    | S5IFPUBO   | s5ifpubo:w5 IncFlag:S Other Public Pensions              | Categ |
| 1    | R1IPUBPEN  | rlipubpen:w1 Income:R Public Pensions                    | Cont  |
| 2    | R2IPUBPEN  | r2ipubpen:w2 Income:R Public Pensions                    | Cont  |
| 5    | R5IPUBPEN  | r5ipubpen:w5 Income:R Public Pensions                    | Cont  |
| 1    | S1IPUBPEN  | slipubpen:w1 Income:S Public Pensions                    | Cont  |
| 2    | S2IPUBPEN  | s2ipubpen:w2 Income:S Public Pensions                    | Cont  |
| 5    | S5IPUBPEN  | s5ipubpen:w5 Income:S Public Pensions                    | Cont  |
| 1    | R1IFPUBPEN | rlifpubpen:w1 Impflag:R Public Pensions                  | Categ |
| 2    | R2IFPUBPEN | r2ifpubpen:w2 Impflag:R Public Pensions                  | Categ |
| 5    | R5IFPUBPEN | r5ifpubpen:w5 Impflag:R Public Pensions                  | Categ |



|   |            |               |           |        |          |       |
|---|------------|---------------|-----------|--------|----------|-------|
| 1 | S1IFPUBPEN | slifpubpen:w1 | IncFlag:S | Public | Pensions | Categ |
| 2 | S2IFPUBPEN | s2ifpubpen:w2 | IncFlag:S | Public | Pensions | Categ |
| 5 | S5IFPUBPEN | s5ifpubpen:w5 | IncFlag:S | Public | Pensions | Categ |

## Descriptive Statistics

| Variable  | N     | Mean     | Std Dev  | Minimum | Maximum    |
|-----------|-------|----------|----------|---------|------------|
| R1ISRET   | 15118 | 3854.63  | 21732.07 | 0.00    | 1896648.00 |
| R2ISRET   | 13662 | 5212.17  | 20224.69 | 0.00    | 672000.00  |
| R5ISRET   | 16896 | 16239.70 | 61814.88 | 0.00    | 3600000.00 |
| S1ISRET   | 10813 | 3250.01  | 15132.94 | 0.00    | 480000.00  |
| S2ISRET   | 9655  | 4777.12  | 20858.89 | 0.00    | 672000.00  |
| S5ISRET   | 12498 | 13525.45 | 55050.26 | 0.00    | 2400000.00 |
| R1IFSRET  | 15118 | 0.01     | 0.07     | 0.00    | 1.00       |
| R2IFSRET  | 13663 | 0.01     | 0.08     | -1.00   | 1.00       |
| R5IFSRET  | 16802 | 0.02     | 0.14     | 0.00    | 1.00       |
| S1IFSRET  | 10826 | 0.00     | 0.08     | -1.00   | 1.00       |
| S2IFSRET  | 9666  | 0.00     | 0.08     | -1.00   | 1.00       |
| S5IFSRET  | 11651 | 0.02     | 0.14     | 0.00    | 1.00       |
| R1ISSDI   | 15124 | 195.23   | 2837.93  | 0.00    | 144000.00  |
| R2ISSDI   | 13673 | 165.90   | 2976.68  | 0.00    | 192000.00  |
| R5ISSDI   | 16815 | 394.60   | 6968.83  | 0.00    | 336000.00  |
| S1ISSDI   | 10828 | 191.58   | 2424.40  | 0.00    | 108000.00  |
| S2ISSDI   | 9671  | 195.51   | 3371.06  | 0.00    | 192000.00  |
| S5ISSDI   | 11658 | 399.19   | 6867.57  | 0.00    | 300000.00  |
| R1IFSSDI  | 15124 | 0.00     | 0.02     | 0.00    | 1.00       |
| R2IFSSDI  | 13673 | -0.00    | 0.01     | -1.00   | 0.00       |
| R5IFSSDI  | 16814 | 0.00     | 0.02     | 0.00    | 1.00       |
| S1IFSSDI  | 10828 | 0.00     | 0.02     | 0.00    | 1.00       |
| S2IFSSDI  | 9671  | 0.00     | 0.00     | 0.00    | 0.00       |
| S5IFSSDI  | 11658 | 0.00     | 0.02     | 0.00    | 1.00       |
| R1IPUBO   | 15124 | 76.40    | 2437.76  | 0.00    | 240000.00  |
| R2IPUBO   | 13673 | 84.94    | 2851.40  | 0.00    | 240000.00  |
| R5IPUBO   | 16813 | 194.55   | 6590.08  | 0.00    | 540000.00  |
| S1IPUBO   | 10826 | 40.86    | 1196.55  | 0.00    | 72000.00   |
| S2IPUBO   | 9670  | 102.04   | 3342.12  | 0.00    | 240000.00  |
| S5IPUBO   | 11657 | 220.61   | 7548.81  | 0.00    | 540000.00  |
| R1IFPUBO  | 15124 | 0.00     | 0.01     | 0.00    | 1.00       |
| R2IFPUBO  | 13673 | -0.00    | 0.04     | -1.00   | 0.00       |
| R5IFPUBO  | 16813 | 0.00     | 0.02     | 0.00    | 1.00       |
| S1IFPUBO  | 10826 | 0.00     | 0.00     | 0.00    | 0.00       |
| S2IFPUBO  | 9556  | -0.00    | 0.05     | -1.00   | 0.00       |
| S5IFPUBO  | 11657 | 0.00     | 0.02     | 0.00    | 1.00       |
| R1IPUBPEN | 15114 | 4126.51  | 22091.10 | 0.00    | 1896648.00 |
| R2IPUBPEN | 13662 | 5463.21  | 20946.85 | 0.00    | 672000.00  |
| R5IPUBPEN | 16794 | 16904.04 | 62635.11 | 0.00    | 3600000.00 |
| S1IPUBPEN | 10794 | 3487.56  | 15382.06 | 0.00    | 480000.00  |
| S2IPUBPEN | 9654  | 5075.68  | 21798.82 | 0.00    | 672000.00  |
| S5IPUBPEN | 11642 | 15119.45 | 57686.92 | 0.00    | 2400000.00 |

|            |       |      |      |       |      |
|------------|-------|------|------|-------|------|
| R1IFPUBPEN | 15126 | 0.01 | 0.08 | 0.00  | 1.00 |
| R2IFPUBPEN | 13673 | 0.00 | 0.09 | -1.00 | 1.00 |
| R5IFPUBPEN | 16821 | 0.02 | 0.14 | 0.00  | 1.00 |
| S1IFPUBPEN | 10813 | 0.00 | 0.08 | -1.00 | 1.00 |
| S2IFPUBPEN | 9671  | 0.00 | 0.09 | -1.00 | 1.00 |
| S5IFPUBPEN | 11658 | 0.02 | 0.14 | 0.00  | 1.00 |

## Categorical Variable Codes

|                                  |          |          |          |
|----------------------------------|----------|----------|----------|
| Value-----                       | R1IFSRET | R2IFSRET | R5IFSRET |
| .m:Missing                       | 68       | 41       | 312      |
| -1.No Imput:section not complete |          | 2        |          |
| 0.Not imputed                    | 15033    | 13585    | 16482    |
| 1.Imputed                        | 85       | 76       | 320      |

|                                  |          |          |          |
|----------------------------------|----------|----------|----------|
| Value-----                       | S1IFSRET | S2IFSRET | S5IFSRET |
| .m:Missing                       | 173      | 30       | 417      |
| .u:Unmar                         | 4187     | 4008     | 5223     |
| -1.No Imput:section not complete | 13       | 13       |          |
| 0.Not imputed                    | 10759    | 9605     | 11418    |
| 1.Imputed                        | 54       | 48       | 233      |

|                                  |          |          |          |
|----------------------------------|----------|----------|----------|
| Value-----                       | R1IFSSDI | R2IFSSDI | R5IFSSDI |
| .m:Missing                       | 62       | 31       | 300      |
| -1.No Imput:section not complete |          | 1        |          |
| 0.Not imputed                    | 15118    | 13672    | 16805    |
| 1.Imputed                        | 6        |          | 9        |

|               |          |          |          |
|---------------|----------|----------|----------|
| Value-----    | S1IFSSDI | S2IFSSDI | S5IFSSDI |
| .m:Missing    | 171      | 25       | 410      |
| .u:Unmar      | 4187     | 4008     | 5223     |
| 0.Not imputed | 10824    | 9671     | 11652    |
| 1.Imputed     | 4        |          | 6        |

|                                  |          |          |          |
|----------------------------------|----------|----------|----------|
| Value-----                       | R1IFPUBO | R2IFPUBO | R5IFPUBO |
| .m:Missing                       | 62       | 31       | 301      |
| -1.No Imput:section not complete |          | 24       |          |
| 0.Not imputed                    | 15122    | 13649    | 16808    |
| 1.Imputed                        | 2        |          | 5        |

|                                  |          |          |          |
|----------------------------------|----------|----------|----------|
| Value-----                       | S1IFPUBO | S2IFPUBO | S5IFPUBO |
| .m:Missing                       | 172      | 140      | 411      |
| .u:Unmar                         | 4188     | 4008     | 5223     |
| -1.No Imput:section not complete |          | 23       |          |
| 0.Not imputed                    | 10826    | 9533     | 11653    |
| 1.Imputed                        |          |          | 4        |

|                                  |            |            |            |
|----------------------------------|------------|------------|------------|
| Value-----                       | R1IFPUBPEN | R2IFPUBPEN | R5IFPUBPEN |
| .m:Missing                       | 60         | 31         | 293        |
| -1.No Imput:section not complete |            | 27         |            |
| 0.Not imputed                    | 15034      | 13570      | 16489      |
| 1.Imputed                        | 92         | 76         | 332        |

|                                  |            |            |            |
|----------------------------------|------------|------------|------------|
| Value-----                       | S1IFPUBPEN | S2IFPUBPEN | S5IFPUBPEN |
| .m:Missing                       | 170        | 25         | 405        |
| .u:Unmar                         | 4203       | 4008       | 5227       |
| -1.No Imput:section not complete | 13         | 36         |            |
| 0.Not imputed                    | 10742      | 9587       | 11417      |
| 1.Imputed                        | 58         | 48         | 241        |

## How Constructed

Income questions about the respondent and the respondent's spouse (if applicable) are asked separately, but both are answered by the financial respondent. If the financial respondent is the respondent, then questions the financial respondent answers about him/herself are assigned to the respondent and those about their spouse are assigned to the spouse. However, if the financial respondent is the respondent's spouse, then questions the financial respondent answers about him/herself are assigned to the spouse and

those concerning their spouse are assigned to the respondent. Proxy respondents can also answer these income questions in the place of the respondent or their spouse and, in the case that they do, they are asked to answer about the respondent and their spouse (if applicable), and financial information is then assigned respectively.

RwISRET and SwISRET capture the respondent's and spouse's individual income from public retirement and widowhood pensions at an annual-level, respectively. RwISRET and SwISRET include income from retirement pensions and widowhood pensions from public providers. Public retirement and widowhood pension income questions are asked without instruction as to whether these amounts should be reported before or after tax.

The financial respondent is first asked "Excluding income you have already mentioned, during the last year did you receive income from retirement pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "IMSS", "ISSSTE", and "Other Public (PEMEX, DEFENSA, MARINA, CFE, BANXICO)". If they answer any of the public providers, they are asked "About how much was it in a typical month?" The financial respondent is next asked "Excluding income you have already mentioned, during the last year did you receive income from widowhood pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "IMSS", "ISSSTE", and "Other Public (PEMEX, DEFENSA, MARINA, CFE, BANXICO)". If they answer any of the public providers, they are asked "About how much was it in a typical month?" RwISRET is derived as yearly income from public retirement and widowhood pensions by adding the reported monthly public pension income from retirement pensions and widowhood pensions, and then multiplying by 12. In the case that the respondent does not receive any pension income from a public retirement or widowhood pension, RwISRET has a value of 0. Special missing .m is used if at least one component of RwISRET was not imputed because the section was not completed. RwISRET is set to blank missing (.) if the respondent did not participate in the current wave.

If the respondent has a spouse, the financial respondent is first asked "Excluding income you have already mentioned, during the last year did your spouse receive income from retirement pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "IMSS", "ISSSTE", and "Other Public (PEMEX, DEFENSA, MARINA, CFE, BANXICO)". If they answer any of the public providers, they are asked "About how much was it in a typical month?" The financial respondent is next asked "Excluding income you have already mentioned, during the last year did your spouse receive income from widowhood pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "IMSS", "ISSSTE", and "Other Public (PEMEX, DEFENSA, MARINA, CFE, BANXICO)". If they answer any of the public providers, they are asked "About how much was it in a typical month?" SwISRET is derived as yearly income from public retirement and widowhood pensions by adding the reported monthly public pension income from retirement pensions and widowhood pensions, and then multiplying by 12. In the case that the spouse does not receive any pension income from a public retirement or widowhood pension, SwISRET has a value of 0. Special missing .m is used if at least one component of SwISRET was not imputed because the section was not completed. Special missing value .u is used when the respondent does not have a spouse at this wave. SwISRET is set to blank missing (.) if the respondent did not participate in the current wave.

RwIFSRET and SwIFSRET are flag variables indicating whether or not any component of RwISRET or SwISRET was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing. RwIFSRET and SwIFSRET are set to blank missing (.) if the respondent did not participate in the current wave.

RwISSDI and SwISSDI capture the respondent's and spouse's income from public disability pensions at an annual-level, respectively. RwISSDI and SwISSDI capture income from disability or work accident pensions from public providers. Public disability pension income questions are asked without instruction as to whether these amounts should be reported before or after tax.

The financial respondent is next asked "Excluding income you have already mentioned, during the last year did you receive income from disability or work accident pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "IMSS", "ISSSTE", and "Other Public (PEMEX, DEFENSA, MARINA, CFE, BANXICO)". If they answer any of the public providers, they are asked "About how much was it in a typical month?" RwISSDI is derived as yearly income from public disability pensions by multiplying the reported monthly public pension income from disability and work accident pensions by 12. In the case that the respondent does not receive any pension income from a public disability or work accident pension, RwISSDI has a value of 0. Special missing .m is used if at

least one component of RwiSSDI was not imputed because the section was not completed. RwiSSDI is set to blank missing (.) if the respondent did not participate in the current wave.

If the respondent has a spouse, the financial respondent is next asked "Excluding income you have already mentioned, during the last year did your spouse receive income from disability or work accident pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "IMSS", "ISSSTE", and "Other Public (PEMEX, DEFENSA, MARINA, CFE, BANXICO)". If they answer any of the public providers, they are asked "About how much was it in a typical month?" SwiSSDI is derived as yearly income from public disability pensions by multiplying the reported monthly public pension income from disability and work accident pensions by 12. In the case that the spouse does not receive any pension income from a public disability or work accident pension, SwiSSDI has a value of 0. Special missing .m is used if at least one component of SwiSSDI was not imputed because the section was not completed. Special missing value .u is used when the respondent does not have a spouse at this wave. SwiSSDI is set to blank missing (.) if the respondent did not participate in the current wave.

RwiFSSDI and SwiFSSDI are flag variables indicating whether or not any component of RwiSSDI or SwiSSDI was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing. RwiFSSDI and SwiFSSDI are set to blank missing (.) if the respondent did not participate in the current wave.

RwiPUBO and SwiPUBO capture the respondent's and spouse's income from other public pensions at an annual-level, respectively. RwiPUBO and SwiPUBO capture income from other pensions from public providers. Other public pension income questions are asked without instruction as to whether these amounts should be reported before or after tax.

The financial respondent is asked "Excluding income you have already mentioned, during the last year did you receive income from other pensions." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "IMSS", "ISSSTE", and "Other Public (PEMEX, DEFENSA, MARINA, CFE, BANXICO)". If they answer any of the public providers, they are asked "About how much was it in a typical month?" RwiPUBO is derived as yearly income from other public pensions by multiplying the reported monthly public pension income from other pensions by 12. In the case that the respondent does not receive any pension income from other public pensions, RwiPUBO has a value of 0. Special missing .m is used if at least one component of RwiPUBO was not imputed because the section was not completed. RwiPUBO is set to blank missing (.) if the respondent did not participate in the current wave.

If the respondent has a spouse, the financial respondent is asked "Excluding income you have already mentioned, during the last year did your spouse receive income from other pensions." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "IMSS", "ISSSTE", and "Other Public (PEMEX, DEFENSA, MARINA, CFE, BANXICO)". If they answer any of the public providers, they are asked "About how much was it in a typical month?" SwiPUBO is derived as yearly income from other public pensions by multiplying the reported monthly public pension income from other pensions by 12. In the case that the spouse does not receive any pension income from other public pensions, SwiPUBO has a value of 0. Special missing .m is used if at least one component of SwiPUBO was not imputed because the section was not completed. Special missing value .u is used when the respondent does not have a spouse at this wave. SwiPUBO is set to blank missing (.) if the respondent did not participate in the current wave.

RwiFPUBO and SwiFPUBO are flag variables indicating whether or not any component of RwiPUBO or SwiPUBO was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing. RwiFPUBO and SwiFPUBO are set to blank missing (.) if the respondent did not participate in the current wave.

RwiPUBPEN and SwiPUBPEN capture the respondent's and spouse's total income from public pensions at an annual-level, respectively. RwiPUBPEN and SwiPUBPEN are based on information from:

Income from public retirement and widowhood pensions, as previously described.

Income from public disability pensions, as previously described.

Income from other public pensions, as previously described.

RwIPUBPEN and SwIPUBPEN are, respectively, constructed as the sum of respondent's or spouse's income from public retirement and widowhood pensions, public disability pensions, and other public pensions. All components of these variables are constructed at the respondent level and include imputed values. Special missing .m is used if at least one component of RwIPUBPEN or SwIPUBPEN was not imputed because the respondent did not complete the section. RwIPUBPEN and SwIPUBPEN are set to blank missing (.) if the respondent did not participate in the current wave.

RwIFPUBPEN and SwIFPUBPEN are flag variables indicating whether or not any component of RwIPUBPEN or SwIPUBPEN was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing. RwIFPUBPEN and SwIFPUBPEN are set to blank missing (.) if the respondent did not participate in the current wave.

## Cross Wave Differences in MHAS

In Waves 1 and 2 of MHAS, respondents were allowed to identify a single pension type for retirement pensions, widowhood pensions, disability or work accident pensions, or other pensions, and RwIPUBPEN (and its components) were able to be created. In Waves 3 and 4 of MHAS, respondents were allowed to identify multiple pension providers for each type of pension but were only asked one amount, regardless of how many different providers were identified. Given this, it is not possible to identify pension income in Waves 3 and 4 exclusively from public providers and RwIPUBPEN (and its components) cannot be created. Starting in Wave 5, respondents were asked to report up to two pensions types for retirement pensions, widowhood pensions, disability or work accident pensions, or other pensions and for each of these they had to select only one provider. Thus, it was possible to create RwIPUBPEN (and its components) again in Wave 5.

A total measure of pension income is available for all waves in the variable RwIPENT.

## Differences with the RAND HRS/Harmonized HRS

The RAND HRS does not include a variable capturing total public pension income like RwIPUBPEN in the Harmonized MHAS. While RwISRET and RwISSDI are generally comparable between Harmonized MHAS and RAND HRS, military pension income which can be included in RwISRET, RwISSDI, or RwIPUBO in the Harmonized MHAS is instead aggregated with other government transfers in RwIGXFR in the RAND HRS.

In the HRS, respondents are instructed to report pension income before taxes and deductions. In the MHAS, pension income questions are asked without instruction as to whether these amounts should be reported before or after tax.

Income from public pensions in MHAS is measured in nominal pesos, whereas public pension income in the RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

## MHAS Variables Used

Wave 1:

|         |   |
|---------|---|
| IMAM55A | own pension income -retirement (imputed)      |
| IMAM55B | own pension income -widow (imputed)           |
| IMAM55C | own pension income -disability (imputed)      |
| IMAM55D | own other pension income                      |
| IMAM61A | spouse's pension income -retirement (imputed) |
| IMAM61B | spouse's pension income -widow (imputed)      |
| IMAM61C | spouse's pension income -disability (imputed) |
| IMAM61D | spouse's other pension income (imputed)       |
| K55AIMP | if imputed value                              |
| K55BIMP | if imputed value                              |
| K55CIMP | if imputed value                              |
| K55DIMP | if imputed value                              |
| K56_1   | source of retirement pension                  |
| K56_2   | source of widowhood pension                   |
| K56_3   | source of disability pension                  |
| K56_4   | source of other pension                       |
| K61AIMP | if imputed value                              |

K61BIMP if imputed value  
 K61CIMP if imputed value  
 K61DIMP if imputed value  
 K62\_1 source of retirement pension of spouse  
 K62\_2 source of widowhood pension of spouse  
 K62\_3 source of disability pension of spouse  
 K62\_4 source of other pension of spouse

## Wave 2:

IMAM58A own pension income -retirement (imputed)  
 IMAM58B own pension income -widow (imputed)  
 IMAM58C own pension income -disability (imputed)  
 IMAM58D own other pension income  
 IMAM64C spouse's pension income -retirement (imputed)  
 IMAM64D spouse's pension income -widow (imputed)  
 IMAM64E spouse's pension income -disability (imputed)  
 IMAM64F spouse's other pension income (imputed)  
 K58AIMP if imputed value  
 K58BIMP if imputed value  
 K58DIMP if imputed value  
 K59A source of retirement pension  
 K59B source of widowhood pension  
 K59C source of disability pension  
 K59D source of other pension  
 K64CIMP if imputed value  
 K64DIMP if imputed value  
 K64EIMP if imputed value  
 K64FIMP if imputed value  
 K65C source of retirement pension of spouse  
 K65D source of widowhood pension of spouse  
 K65E source of disability pension of spouse  
 K65F source of other pension of spouse

## Wave 5:

IMAMK61\_1\_1\_18 Own pension income -retirement 1 (imputed)  
 IMAMK61\_1\_2\_18 Own pension income -retirement 2 (imputed)  
 IMAMK61\_2\_1\_18 Own pension income -widow 1 (imputed)  
 IMAMK61\_2\_2\_18 Own pension income -widow 2 (imputed)  
 IMAMK61\_3\_1\_18 Own pension income -disability 1 (imputed)  
 IMAMK61\_3\_2\_18 Own pension income -disability 2 (imputed)  
 IMAMK61\_4\_1\_18 Own other pension income 1 (imputed)  
 IMAMK61\_4\_2\_18 Own other pension income 2 (imputed)  
 IMAMK67\_1\_1\_18 Spouse's pension income - retirement 1 (imputed)  
 IMAMK67\_1\_2\_18 Spouse's pension income - retirement 2 (imputed)  
 IMAMK67\_2\_1\_18 Spouse's pension income - widow 1 (imputed)  
 IMAMK67\_2\_2\_18 Spouse's pension income - widow 2 (imputed)  
 IMAMK67\_3\_1\_18 Spouse's pension income - disability 1 (imputed)  
 IMAMK67\_3\_2\_18 Spouse's pension income - disability 2 (imputed)  
 IMAMK67\_4\_1\_18 Spouse's other pension income 1 (imputed)  
 IMAMK67\_4\_2\_18 Spouse's other pension income 2 (imputed)  
 K58A\_18 Last year: Did respondent receive pension income from r  
 K58B\_18 Last year: Did respondent receive widowhood pension inc  
 K58C\_18 Last year: Did respondent receive disability pension in  
 K58D\_18 Last year: Did respondent receive income from other pen  
 K59\_1\_1\_18 Respondent's retirement pension source (First Pension)  
 K59\_1\_2\_18 Respondent's retirement pension source (Second Pension)  
 K59\_2\_1\_18 Respondent's widowhood pension source (First Pension)  
 K59\_2\_2\_18 Respondent's widowhood pension source (Second Pension)  
 K59\_3\_1\_18 Respondent's disability pension source (First Pension)  
 K59\_3\_2\_18 Respondent's disability pension source (Second Pension)  
 K59\_4\_1\_18 Respondent's other pension(s) source (First Pension)  
 K59\_4\_2\_18 Respondent's other pension(s) source (Second Pension)  
 K61\_1\_1\_IMP\_18 Own pension income -retirement 1 (Flag if imputed value  
 K61\_1\_2\_IMP\_18 Own pension income -retirement 2 (Flag if imputed value  
 K61\_2\_1\_IMP\_18 Own pension income -widow 1 (Flag if imputed value)  
 K61\_2\_2\_IMP\_18 Own pension income -widow 2 (Flag if imputed value)

|                |   |
|----------------|---|
| K61_3_1_IMP_18 | Own pension income -disability 1 (Flag if imputed value |
| K61_3_2_IMP_18 | Own pension income -disability 2 (Flag if imputed value |
| K61_4_1_IMP_18 | Own other pension income 1 (Flag if imputed value)      |
| K61_4_2_IMP_18 | Own other pension income 2 (Flag if imputed value)      |
| K64C_18        | Last year: Did respondent's spouse receive retirement p |
| K64D_18        | Last year: Did respondent's spouse receive widowhood pe |
| K64E_18        | Last year: Did respondent's spouse receive disability p |
| K64F_18        | Last year: Did respondent's spouse receive income from  |
| K65_1_1_18     | Spouse's retirement pension source (First Pension)      |
| K65_1_2_18     | Spouse's retirement pension source (Second Pension)     |
| K65_2_1_18     | Spouse's widowhood pension income source (First Pension |
| K65_2_2_18     | Spouse's widowhood pension income source (Second Pensio |
| K65_3_1_18     | Spouse's disability pension income source (First Pensio |
| K65_3_2_18     | Spouse's disability pension income source (Second Pensi |
| K65_4_1_18     | Spouse's other pension(s) income source (First Pension) |
| K65_4_2_18     | Spouse's other pension(s) income source (Second Pension |
| K67_1_1_IMP_18 | Spouse's pension income - retirement 1 (Flag if imputed |
| K67_1_2_IMP_18 | Spouse's pension income - retirement 2 (Flag if imputed |
| K67_2_1_IMP_18 | Spouse's pension income - widow 1 (Flag if imputed valu |
| K67_2_2_IMP_18 | Spouse's pension income - widow 2 (Flag if imputed valu |
| K67_3_1_IMP_18 | Spouse's pension income - disability 1 (Flag if imputed |
| K67_3_2_IMP_18 | Spouse's pension income - disability 2 (Flag if imputed |
| K67_4_1_IMP_18 | Spouse's other pension income 1 (Flag if imputed value) |
| K67_4_2_IMP_18 | Spouse's other pension income 2 (Flag if imputed value) |

|   |
|---|
| <b>Individual Other Pensions Income</b> |
|---|

| Wave | Variable | Label                                | Type  |
|------|----------|--------------------------------------|-------|
| 1    | R1IPENO  | r1ipeno:w1 Income:R Other Pensions   | Cont  |
| 2    | R2IPENO  | r2ipeno:w2 Income:R Other Pensions   | Cont  |
| 5    | R5IPENO  | r5ipeno:w5 Income:R Other Pensions   | Cont  |
| 1    | S1IPENO  | s1ipeno:w1 Income:S Other Pensions   | Cont  |
| 2    | S2IPENO  | s2ipeno:w2 Income:S Other Pensions   | Cont  |
| 5    | S5IPENO  | s5ipeno:w5 Income:S Other Pensions   | Cont  |
| 1    | R1IFPENO | r1ifpeno:w1 ImpFlag:R Other Pensions | Categ |
| 2    | R2IFPENO | r2ifpeno:w2 ImpFlag:R Other Pensions | Categ |
| 5    | R5IFPENO | r5ifpeno:w5 ImpFlag:R Other Pensions | Categ |
| 1    | S1IFPENO | s1ifpeno:w1 ImpFlag:S Other Pensions | Categ |
| 2    | S2IFPENO | s2ifpeno:w2 ImpFlag:S Other Pensions | Categ |
| 5    | S5IFPENO | s5ifpeno:w5 ImpFlag:S Other Pensions | Categ |

### Descriptive Statistics

| Variable | N     | Mean    | Std Dev  | Minimum | Maximum    |
|----------|-------|---------|----------|---------|------------|
| R1IPENO  | 15114 | 547.59  | 8133.50  | 0.00    | 453600.00  |
| R2IPENO  | 13661 | 619.03  | 7199.61  | 0.00    | 240000.00  |
| R5IPENO  | 16783 | 1787.01 | 18100.75 | 0.00    | 1056000.00 |
| S1IPENO  | 10820 | 443.40  | 7957.30  | 0.00    | 453600.00  |
| S2IPENO  | 9665  | 615.96  | 7716.95  | 0.00    | 240000.00  |
| S5IPENO  | 11642 | 1384.66 | 15159.08 | 0.00    | 600000.00  |
| R1IFPENO | 15114 | 0.00    | 0.03     | 0.00    | 1.00       |
| R2IFPENO | 13662 | 0.00    | 0.03     | -1.00   | 1.00       |
| R5IFPENO | 16783 | 0.00    | 0.05     | 0.00    | 1.00       |
| S1IFPENO | 10822 | 0.00    | 0.03     | -1.00   | 1.00       |
| S2IFPENO | 9666  | 0.00    | 0.03     | -1.00   | 1.00       |
| S5IFPENO | 11642 | 0.00    | 0.04     | 0.00    | 1.00       |

### Categorical Variable Codes

| Value-----                       | R1IFPENO | R2IFPENO | R5IFPENO |
|----------------------------------|----------|----------|----------|
| .m:Missing                       | 72       | 42       | 331      |
| -1.No Imput:section not complete |          | 1        |          |
| 0.Not imputed                    | 15097    | 13649    | 16748    |
| 1.Imputed                        | 17       | 12       | 35       |
| Value-----                       | S1IFPENO | S2IFPENO | S5IFPENO |
| .m:Missing                       | 176      | 30       | 426      |
| .u:Unmar                         | 4188     | 4008     | 5223     |
| -1.No Imput:section not complete | 2        | 1        |          |
| 0.Not imputed                    | 10814    | 9655     | 11619    |
| 1.Imputed                        | 6        | 10       | 23       |

### How Constructed

RwIPENO and SwIPENO capture the respondent's and spouse's individual income from other pensions at an annual-level, respectively. RwIPENO and SwIPENO include income from all pensions from an other type of pension provider (not specially a private provider or a public provider), including retirement pensions, widowhood pensions, disability or work accident pensions, or other pensions. Other pension income



questions are asked without instruction as to whether these amounts should be reported before or after tax.

Income questions about the respondent and the respondent's spouse (if applicable) are asked separately, but both are answered by the financial respondent. If the financial respondent is the respondent, then questions the financial respondent answers about him/herself are assigned to the respondent and those about their spouse are assigned to the spouse. However, if the financial respondent is the respondent's spouse, then questions the financial respondent answers about him/herself are assigned to the spouse and those concerning their spouse are assigned to the respondent. Proxy respondents can also answer these income questions in the place of the respondent or their spouse and, in the case that they do, they are asked to answer about the respondent and their spouse (if applicable), and financial information is then assigned respectively.

The financial respondent is first asked "Excluding income you have already mentioned, during the last year did you receive income from retirement pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "U.S. Social Security", "Other Institution", "A Person", or "Refused" or "Don't know" pension provider. If they answer any of these non-public, non-private pension providers, they are asked "About how much was it in a typical month?" The financial respondent is next asked "Excluding income you have already mentioned, during the last year did you receive income from widowhood pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "U.S. Social Security", "Other Institution", "A Person", or "Refused" or "Don't know" pension provider. If they answer any of these non-public, non-private pension providers, they are asked "About how much was it in a typical month?" The financial respondent is next asked "Excluding income you have already mentioned, during the last year did you receive income from disability or work accident pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "U.S. Social Security", "Other Institution", "A Person", or "Refused" or "Don't know" pension provider. If they answer any of these non-public, non-private pension providers, they are asked "About how much was it in a typical month?" The financial respondent is finally asked "Excluding income you have already mentioned, during the last year did you receive income from other pensions." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "U.S. Social Security", "Other Institution", "A Person", or "Refused" or "Don't know" pension provider. If they answer any of these non-public, non-private pension providers, they are asked "About how much was it in a typical month?" RwiPEN0 is derived as yearly income from other pensions by adding the reported monthly other pension income from retirement pensions, widowhood pensions, disability or work accident pensions, or other pensions, and then multiplying by 12. In the case that the respondent does not receive any pension income from a other pension provider, RwiPEN0 has a value of 0. Special missing .m is used if at least one component of RwiPEN0 was not imputed because the section was not completed. RwiPEN0 is set to blank missing (.) if the respondent did not participate in the current wave.

If the respondent has a spouse, the financial respondent is first asked "Excluding income you have already mentioned, during the last year did your spouse receive income from retirement pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "U.S. Social Security", "Other Institution", "A Person", or "Refused" or "Don't know" pension provider. If they answer any of these non-public, non-private pension providers, they are asked "About how much was it in a typical month?" The financial respondent is next asked "Excluding income you have already mentioned, during the last year did your spouse receive income from widowhood pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "U.S. Social Security", "Other Institution", "A Person", or "Refused" or "Don't know" pension provider. If they answer any of these non-public, non-private pension providers, they are asked "About how much was it in a typical month?" The financial respondent is next asked "Excluding income you have already mentioned, during the last year did your spouse receive income from disability or work accident pension." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "U.S. Social Security", "Other Institution", "A Person", or "Refused" or "Don't know" pension provider. If they answer any of these non-public, non-private pension providers, they are asked "About how much was it in a typical month?" The financial respondent is finally asked "Excluding income you have already mentioned, during the last year did your spouse receive income from other pensions." If they answer yes, they are then asked "This pension comes from...?" and are given 7 possible pension providers including "U.S. Social Security", "Other Institution", "A Person", or "Refused" or "Don't know" pension provider. If they answer any of these non-public, non-private pension providers, they are asked "About how much was it in a typical month?" SwIPEN0 is derived as yearly income from other pensions by adding the reported monthly other pension income from retirement pensions, widowhood pensions, disability or work accident pensions, or other pensions, and then multiplying by 12. In the case that the spouse does not receive any pension income from an other pension provider, SwIPEN0

has a value of 0. Special missing .m is used if at least one component of SwIPENO was not imputed because the section was not completed. Special missing value .u is used when the respondent does not have a spouse at this wave. SwIPENO is set to blank missing (.) if the respondent did not participate in the current wave.

For questions eliciting a value included in RwIPENO and SwIPENO, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

RwIFPEN0 and SwIPENO are flag variables indicating whether or not any component of RwIPENO or SwIPENO was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing. RwIFPEN0 and SwIFPEN0 are set to blank missing (.) if the respondent did not participate in the current wave.

## Cross Wave Differences in MHAS

In Waves 1 and 2 of MHAS, respondents were allowed to identify a single pension type for retirement pensions, widowhood pensions, disability or work accident pensions, or other pensions, and RwIPENO was able to be created. In Waves 3 and 4 of MHAS, respondents were allowed to identify multiple pension providers for each type of pension but were only asked one amount, regardless of how many different providers were identified. Given this, in Waves 3 and 4, it is not possible to identify pension income exclusively from other pension providers and RwIPENO cannot be created. Starting in Wave 5, respondents were asked to report up to two pensions and for each of these they had to select only one provider. Thus RwIPENO was possible to create.

A total measure of pension income is available for all waves in the variable RwIPENT.

## Differences with the RAND HRS/Harmonized HRS

The RAND HRS does not have an equivalent variable. All non-Social Security pension and annuity income in the RAND HRS is captured in RwIPENA.

In the HRS, respondents are instructed to report pension income before taxes and deductions. In the MHAS, pension income questions are asked without instruction as to whether these amounts should be reported before or after tax.

Income from other pensions in MHAS is measured in nominal pesos, whereas pension income in the RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

## MHAS Variables Used

Wave 1:

|         |   |
|---------|---|
| IMAM55A | own pension income -retirement (imputed)      |
| IMAM55B | own pension income -widow (imputed)           |
| IMAM55C | own pension income -disability (imputed)      |
| IMAM55D | own other pension income                      |
| IMAM61A | spouse's pension income -retirement (imputed) |
| IMAM61B | spouse's pension income -widow (imputed)      |
| IMAM61C | spouse's pension income -disability (imputed) |
| IMAM61D | spouse's other pension income (imputed)       |
| K55AIMP | if imputed value                              |
| K55BIMP | if imputed value                              |
| K55CIMP | if imputed value                              |
| K55DIMP | if imputed value                              |
| K56_1   | source of retirement pension                  |
| K56_2   | source of widowhood pension                   |
| K56_3   | source of disability pension                  |

|         |  |
|---------|--|
| K56_4   | source of other pension                |
| K61AIMP | if imputed value                       |
| K61BIMP | if imputed value                       |
| K61CIMP | if imputed value                       |
| K61DIMP | if imputed value                       |
| K62_1   | source of retirement pension of spouse |
| K62_2   | source of widowhood pension of spouse  |
| K62_3   | source of disability pension of spouse |
| K62_4   | source of other pension of spouse      |

## Wave 2:

|         |   |
|---------|---|
| IMAM58A | own pension income -retirement (imputed)      |
| IMAM58B | own pension income -widow (imputed)           |
| IMAM58C | own pension income -disability (imputed)      |
| IMAM58D | own other pension income                      |
| IMAM64C | spouse's pension income -retirement (imputed) |
| IMAM64D | spouse's pension income -widow (imputed)      |
| IMAM64E | spouse's pension income -disability (imputed) |
| IMAM64F | spouse's other pension income (imputed)       |
| K58AIMP | if imputed value                              |
| K58BIMP | if imputed value                              |
| K58DIMP | if imputed value                              |
| K59A    | source of retirement pension                  |
| K59B    | source of widowhood pension                   |
| K59C    | source of disability pension                  |
| K59D    | source of other pension                       |
| K64CIMP | if imputed value                              |
| K64DIMP | if imputed value                              |
| K64EIMP | if imputed value                              |
| K64FIMP | if imputed value                              |
| K65C    | source of retirement pension of spouse        |
| K65D    | source of widowhood pension of spouse         |
| K65E    | source of disability pension of spouse        |
| K65F    | source of other pension of spouse             |

## Wave 5:

|                |   |
|----------------|---|
| IMAMK61_1_1_18 | Own pension income -retirement 1 (imputed)              |
| IMAMK61_1_2_18 | Own pension income -retirement 2 (imputed)              |
| IMAMK61_2_1_18 | Own pension income -widow 1 (imputed)                   |
| IMAMK61_2_2_18 | Own pension income -widow 2 (imputed)                   |
| IMAMK61_3_1_18 | Own pension income -disability 1 (imputed)              |
| IMAMK61_3_2_18 | Own pension income -disability 2 (imputed)              |
| IMAMK61_4_1_18 | Own other pension income 1 (imputed)                    |
| IMAMK61_4_2_18 | Own other pension income 2 (imputed)                    |
| IMAMK67_1_1_18 | Spouse's pension income - retirement 1 (imputed)        |
| IMAMK67_1_2_18 | Spouse's pension income - retirement 2 (imputed)        |
| IMAMK67_2_1_18 | Spouse's pension income - widow 1 (imputed)             |
| IMAMK67_2_2_18 | Spouse's pension income - widow 2 (imputed)             |
| IMAMK67_3_1_18 | Spouse's pension income - disability 1 (imputed)        |
| IMAMK67_3_2_18 | Spouse's pension income - disability 2 (imputed)        |
| IMAMK67_4_1_18 | Spouse's other pension income 1 (imputed)               |
| IMAMK67_4_2_18 | Spouse's other pension income 2 (imputed)               |
| K58A_18        | Last year: Did respondent receive pension income from r |
| K58B_18        | Last year: Did respondent receive widowhood pension inc |
| K58C_18        | Last year: Did respondent receive disability pension in |
| K58D_18        | Last year: Did respondent receive income from other pen |
| K59_1_1_18     | Respondent's retirement pension source (First Pension)  |
| K59_1_2_18     | Respondent's retirement pension source (Second Pension) |
| K59_2_1_18     | Respondent's widowhood pension source (First Pension)   |
| K59_2_2_18     | Respondent's widowhood pension source (Second Pension)  |
| K59_3_1_18     | Respondent's disability pension source (First Pension)  |
| K59_3_2_18     | Respondent's disability pension source (Second Pension) |
| K59_4_1_18     | Respondent's other pension(s) source (First Pension)    |
| K59_4_2_18     | Respondent's other pension(s) source (Second Pension)   |
| K61_1_1_IMP_18 | Own pension income -retirement 1 (Flag if imputed value |
| K61_1_2_IMP_18 | Own pension income -retirement 2 (Flag if imputed value |

|                |  |
|----------------|--|
| K61_2_1_IMP_18 | Own pension income -widow 1 (Flag if imputed value)      |
| K61_2_2_IMP_18 | Own pension income -widow 2 (Flag if imputed value)      |
| K61_3_1_IMP_18 | Own pension income -disability 1 (Flag if imputed value) |
| K61_3_2_IMP_18 | Own pension income -disability 2 (Flag if imputed value) |
| K61_4_1_IMP_18 | Own other pension income 1 (Flag if imputed value)       |
| K61_4_2_IMP_18 | Own other pension income 2 (Flag if imputed value)       |
| K64C_18        | Last year: Did respondent's spouse receive retirement p  |
| K64D_18        | Last year: Did respondent's spouse receive widowhood pe  |
| K64E_18        | Last year: Did respondent's spouse receive disability p  |
| K64F_18        | Last year: Did respondent's spouse receive income from   |
| K65_1_1_18     | Spouse's retirement pension source (First Pension)       |
| K65_1_2_18     | Spouse's retirement pension source (Second Pension)      |
| K65_2_1_18     | Spouse's widowhood pension income source (First Pension  |
| K65_2_2_18     | Spouse's widowhood pension income source (Second Pensio  |
| K65_3_1_18     | Spouse's disability pension income source (First Pensio  |
| K65_3_2_18     | Spouse's disability pension income source (Second Pensi  |
| K65_4_1_18     | Spouse's other pension(s) income source (First Pension)  |
| K65_4_2_18     | Spouse's other pension(s) income source (Second Pension  |
| K67_1_1_IMP_18 | Spouse's pension income - retirement 1 (Flag if imputed  |
| K67_1_2_IMP_18 | Spouse's pension income - retirement 2 (Flag if imputed  |
| K67_2_1_IMP_18 | Spouse's pension income - widow 1 (Flag if imputed valu  |
| K67_2_2_IMP_18 | Spouse's pension income - widow 2 (Flag if imputed valu  |
| K67_3_1_IMP_18 | Spouse's pension income - disability 1 (Flag if imputed  |
| K67_3_2_IMP_18 | Spouse's pension income - disability 2 (Flag if imputed  |
| K67_4_1_IMP_18 | Spouse's other pension income 1 (Flag if imputed value)  |
| K67_4_2_IMP_18 | Spouse's other pension income 2 (Flag if imputed value)  |

Individual Total Pensions Income

| Wave | Variable | Label                                | Type  |
|------|----------|--------------------------------------|-------|
| 1    | R1IPENT  | r1ipent:w1 Income:R Total Pensions   | Cont  |
| 2    | R2IPENT  | r2ipent:w2 Income:R Total Pensions   | Cont  |
| 3    | R3IPENT  | r3ipent:w3 Income:R Total Pensions   | Cont  |
| 4    | R4IPENT  | r4ipent:w4 Income:R Total Pensions   | Cont  |
| 5    | R5IPENT  | r5ipent:w5 Income:R Total Pensions   | Cont  |
| 1    | S1IPENT  | s1ipent:w1 Income:S Total Pensions   | Cont  |
| 2    | S2IPENT  | s2ipent:w2 Income:S Total Pensions   | Cont  |
| 3    | S3IPENT  | s3ipent:w3 Income:S Total Pensions   | Cont  |
| 4    | S4IPENT  | s4ipent:w4 Income:S Total Pensions   | Cont  |
| 5    | S5IPENT  | s5ipent:w5 Income:S Total Pensions   | Cont  |
| 1    | R1IFPENT | r1ifpent:w1 Impflag:R Total Pensions | Categ |
| 2    | R2IFPENT | r2ifpent:w2 Impflag:R Total Pensions | Categ |
| 3    | R3IFPENT | r3ifpent:w3 Impflag:R Total Pensions | Categ |
| 4    | R4IFPENT | r4ifpent:w4 Impflag:R Total Pensions | Categ |
| 5    | R5IFPENT | r5ifpent:w5 Impflag:R Total Pensions | Categ |
| 1    | S1IFPENT | s1ifpent:w1 IncFlag:S Total Pensions | Categ |
| 2    | S2IFPENT | s2ifpent:w2 IncFlag:S Total Pensions | Categ |
| 3    | S3IFPENT | s3ifpent:w3 IncFlag:S Total Pensions | Categ |
| 4    | S4IFPENT | s4ifpent:w4 IncFlag:S Total Pensions | Categ |
| 5    | S5IFPENT | s5ifpent:w5 IncFlag:S Total Pensions | Categ |

Descriptive Statistics

| Variable | N     | Mean     | Std Dev    | Minimum | Maximum      |
|----------|-------|----------|------------|---------|--------------|
| R1IPENT  | 15126 | 4808.71  | 23989.14   | 0.00    | 1896648.00   |
| R2IPENT  | 13662 | 6242.92  | 22519.06   | 0.00    | 672000.00    |
| R3IPENT  | 15721 | 13151.05 | 46446.20   | 0.00    | 2400000.00   |
| R4IPENT  | 14745 | 33634.35 | 1159588.49 | 0.00    | 108000000.00 |
| R5IPENT  | 17094 | 18893.92 | 65537.60   | 0.00    | 3600000.00   |
| S1IPENT  | 10632 | 4104.51  | 18209.60   | 0.00    | 516000.00    |
| S2IPENT  | 9547  | 5898.99  | 23486.08   | 0.00    | 672000.00    |
| S3IPENT  | 10590 | 12365.07 | 49709.32   | 0.00    | 2400000.00   |
| S4IPENT  | 10343 | 27921.65 | 888056.79  | 0.00    | 90000000.00  |
| S5IPENT  | 11969 | 16905.07 | 60165.14   | 0.00    | 2400000.00   |
| R1IFPENT | 15126 | 0.01     | 0.09       | 0.00    | 1.00         |
| R2IFPENT | 13673 | 0.01     | 0.09       | -1.00   | 1.00         |
| R3IFPENT | 15723 | 0.02     | 0.15       | -1.00   | 1.00         |
| R4IFPENT | 14745 | 0.02     | 0.15       | 0.00    | 1.00         |
| R5IFPENT | 17094 | 0.04     | 0.19       | 0.00    | 1.00         |
| S1IFPENT | 10932 | -0.02    | 0.18       | -1.00   | 1.00         |
| S2IFPENT | 9673  | -0.01    | 0.14       | -1.00   | 1.00         |
| S3IFPENT | 10941 | -0.01    | 0.23       | -1.00   | 1.00         |
| S4IFPENT | 10414 | 0.02     | 0.17       | -1.00   | 1.00         |
| S5IFPENT | 12059 | 0.04     | 0.23       | -1.00   | 1.00         |

Categorical Variable Codes

| Value-----                       | R1IFPENT | R2IFPENT | R3IFPENT | R4IFPENT | R5IFPENT |
|----------------------------------|----------|----------|----------|----------|----------|
| .m:Missing                       | 60       | 31       |          | 34       | 20       |
| -1.No Imput:section not complete |          | 11       | 2        |          |          |
| 0.Not imputed                    | 15014    | 13570    | 15337    | 14417    | 16424    |

|                                  |  |          |          |          |          |          |
|----------------------------------|--|----------|----------|----------|----------|----------|
| 1.Imputed                        |  | 112      | 92       | 384      | 328      | 670      |
| Value-----                       |  | S1IFPENT | S2IFPENT | S3IFPENT | S4IFPENT | S5IFPENT |
| .m:Missing                       |  | 51       | 23       |          | 22       | 9        |
| .u:Unmar                         |  | 4203     | 4008     | 4782     | 4343     | 5223     |
| -1.No Imput:section not complete |  | 300      | 126      | 351      | 71       | 90       |
| 0.Not imputed                    |  | 10565    | 9488     | 10339    | 10100    | 11372    |
| 1.Imputed                        |  | 67       | 59       | 251      | 243      | 597      |

## How Constructed

RwIPENT and SwIPENT capture the respondent's and spouse's total income from pensions at an annual-level, respectively. RwIPENT and SwIPENT include income from retirement pensions, widowhood pensions, disability or work accident pensions, or other pensions, regardless of the provider. These variables were created to specifically capture pension income after Wave 2, given that it is not possible to separate income from different types of pension providers in Waves 3 and 4. For all other waves, RwIPENA, RwIPUBPEN, and RwIPUBO, as a group, also capture total income from pensions. Pension income questions are asked without instruction as to whether these amounts should be reported before or after tax.

Income questions about the respondent and the respondent's spouse (if applicable) are asked separately, but both are answered by the financial respondent. If the financial respondent is the respondent, then questions the financial respondent answers about him/herself are assigned to the respondent and those about their spouse are assigned to the spouse. However, if the financial respondent is the respondent's spouse, then questions the financial respondent answers about him/herself are assigned to the spouse and those concerning their spouse are assigned to the respondent. Proxy respondents can also answer these income questions in the place of the respondent or their spouse and, in the case that they do, they are asked to answer about the respondent and their spouse (if applicable), and financial information is then assigned respectively.

The financial respondent is first asked "Excluding income you have already mentioned, during the last year did you receive income from retirement pension." If they answer yes, they are asked "About how much was it in a typical month?" The financial respondent is next asked "Excluding income you have already mentioned, during the last year did you receive income from widowhood pension." If they answer yes, they are asked "About how much was it in a typical month?" The financial respondent is next asked "Excluding income you have already mentioned, during the last year did you receive income from disability or work accident pension." If they answer yes, they are asked "About how much was it in a typical month?" The financial respondent is finally asked "Excluding income you have already mentioned, during the last year did you receive income from other pensions." If they answer yes, they are asked "About how much was it in a typical month?" RwIPENT is derived as yearly income from pensions by adding the reported monthly pension income from retirement pensions, widowhood pensions, disability or work accident pensions, or other pensions, and then multiplying by 12. In the case that the respondent does not receive any pension income, RwIPENT has a value of 0. Special missing .m is used if at least one component of RwIPENT was not imputed because the section was not completed. RwIPENT is set to blank missing (.) if the respondent did not participate in the current wave.

If the respondent has a spouse, the financial respondent is first asked "Excluding income you have already mentioned, during the last year did your spouse receive income from retirement pension." If they answer yes, they are asked "About how much was it in a typical month?" The financial respondent is next asked "Excluding income you have already mentioned, during the last year did your spouse receive income from widowhood pension." If they answer yes, they are asked "About how much was it in a typical month?" The financial respondent is next asked "Excluding income you have already mentioned, during the last year did your spouse receive income from disability or work accident pension." If they answer yes, they are asked "About how much was it in a typical month?" The financial respondent is finally asked "Excluding income you have already mentioned, during the last year did your spouse receive income from other pensions." If they answer yes, they are asked "About how much was it in a typical month?" SwIPENT is derived as yearly income from pensions by adding the reported monthly pension income from retirement pensions, widowhood pensions, disability or work accident pensions, or other pensions, and then multiplying by 12. In the case that the spouse does not receive any pension income, SwIPENT has a value of 0. Special missing .m is used if at least one component of SwIPENT was not imputed because the section was not completed. Special missing value .u is used when the respondent does not have a spouse at this wave. SwIPENT is set to blank missing (.) if the respondent did not participate in the current wave.

For questions eliciting a value included in RwIPENT and SwIPENT, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made

available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

RwIFPENT and SwIFPENT are flag variables indicating whether or not any component of RwIPENT or SwIPENT was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing. RwIFPENT and SwIFPENT are set to blank missing (.) if the respondent did not participate in the current wave.

## Cross Wave Differences in MHAS

In Waves 1 and 2 of MHAS, respondents were allowed to identify a single pension type for retirement pensions, widowhood pensions, disability or work accident pensions, or other pensions. In Wave 3, respondents were allowed to identify multiple pension providers for each type of pension but were only asked one amount, regardless of how many different providers were identified. In Wave 4, respondents were also allowed to identify multiple providers for up to three pensions. Respondents were also asked to provide the amount for up to three pensions, however, since the respondent could select multiple providers it is not possible to associate one amount for public or private providers. In Wave 5, respondents were asked to report up to two pensions and for each of these they had to select only one provider.

## Differences with the RAND HRS/Harmonized HRS

The RAND HRS does not have an equivalent variable.

In the HRS, respondents are instructed to report pension income before taxes and deductions. In the MHAS, pension income questions are asked without instruction as to whether these amounts should be reported before or after tax.

Income from pensions in MHAS is measured in nominal pesos, whereas pension income in the RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

## MHAS Variables Used

### Wave 1:

|         |   |
|---------|---|
| IMAM55A | own pension income -retirement (imputed)      |
| IMAM55B | own pension income -widow (imputed)           |
| IMAM55C | own pension income -disability (imputed)      |
| IMAM55D | own other pension income                      |
| IMAM61A | spouse's pension income -retirement (imputed) |
| IMAM61B | spouse's pension income -widow (imputed)      |
| IMAM61C | spouse's pension income -disability (imputed) |
| IMAM61D | spouse's other pension income (imputed)       |
| K55AIMP | if imputed value                              |
| K55BIMP | if imputed value                              |
| K55CIMP | if imputed value                              |
| K55DIMP | if imputed value                              |
| K56_1   | source of retirement pension                  |
| K56_2   | source of widowhood pension                   |
| K56_3   | source of disability pension                  |
| K56_4   | source of other pension                       |
| K61AIMP | if imputed value                              |
| K61BIMP | if imputed value                              |
| K61CIMP | if imputed value                              |
| K61DIMP | if imputed value                              |
| K62_1   | source of retirement pension of spouse        |
| K62_2   | source of widowhood pension of spouse         |
| K62_3   | source of disability pension of spouse        |
| K62_4   | source of other pension of spouse             |

### Wave 2:

|         |   |
|---------|---|
| IMAM58A | own pension income -retirement (imputed)      |
| IMAM58B | own pension income -widow (imputed)           |
| IMAM58C | own pension income -disability (imputed)      |
| IMAM58D | own other pension income                      |
| IMAM64C | spouse's pension income -retirement (imputed) |
| IMAM64D | spouse's pension income -widow (imputed)      |
| IMAM64E | spouse's pension income -disability (imputed) |
| IMAM64F | spouse's other pension income (imputed)       |
| K58AIMP | if imputed value                              |
| K58BIMP | if imputed value                              |
| K58DIMP | if imputed value                              |
| K59A    | source of retirement pension                  |
| K59B    | source of widowhood pension                   |
| K59C    | source of disability pension                  |
| K59D    | source of other pension                       |
| K64CIMP | if imputed value                              |
| K64DIMP | if imputed value                              |
| K64EIMP | if imputed value                              |
| K64FIMP | if imputed value                              |
| K65C    | source of retirement pension of spouse        |
| K65D    | source of widowhood pension of spouse         |
| K65E    | source of disability pension of spouse        |
| K65F    | source of other pension of spouse             |

## Wave 3:

|              |   |
|--------------|---|
| IMAMK61_1_12 | Own pension income -retirement (imputed)                |
| IMAMK61_2_12 | Own pension income -widow (imputed)                     |
| IMAMK61_3_12 | Own pension income -disability (imputed)                |
| IMAMK61_4_12 | Own other pension income (imputed)                      |
| IMAMK67_1_12 | Spouse's pension income - retirement (imputed)          |
| IMAMK67_2_12 | Spouse's pension income - widow (imputed)               |
| IMAMK67_3_12 | Spouse's pension income - disability (imputed)          |
| IMAMK67_4_12 | Spouse's other pension income (imputed)                 |
| K61_1_IMP_12 | Own pension income -retirement (Flag if imputed value)  |
| K61_2_IMP_12 | Own pension income -widow (Flag if imputed value)       |
| K61_3_IMP_12 | Own pension income -disability (Flag if imputed value)  |
| K61_4_IMP_12 | Own other pension income (Flag if imputed value)        |
| K67_1_IMP_12 | Spouse's pension income - retirement (Flag if imputed v |
| K67_2_IMP_12 | Spouse's pension income - widow (Flag if imputed value) |
| K67_3_IMP_12 | Spouse's pension income - disability (Flag if imputed v |
| K67_4_IMP_12 | Spouse's other pension income (Flag if imputed value)   |

## Wave 4:

|                |   |
|----------------|---|
| IMAMK61_1_1_15 | Own pension income -retirement 1(imputed)       |
| IMAMK61_1_2_15 | Own pension income -retirement 2(imputed)       |
| IMAMK61_1_3_15 | Own pension income -retirement 3(imputed)       |
| IMAMK61_2_1_15 | Own pension income -widow 1(imputed)            |
| IMAMK61_2_2_15 | Own pension income -widow 2(imputed)            |
| IMAMK61_2_3_15 | Own pension income -widow 3(imputed)            |
| IMAMK61_3_1_15 | Own pension income -disability 1(imputed)       |
| IMAMK61_3_2_15 | Own pension income -disability 2(imputed)       |
| IMAMK61_3_3_15 | Own pension income -disability 3(imputed)       |
| IMAMK61_4_1_15 | Own other pension income 1(imputed)             |
| IMAMK61_4_2_15 | Own other pension income 2(imputed)             |
| IMAMK61_4_3_15 | Own other pension income 3(imputed)             |
| IMAMK67_1_1_15 | Spouse's pension income - retirement 1(imputed) |
| IMAMK67_1_2_15 | Spouse's pension income - retirement 2(imputed) |
| IMAMK67_1_3_15 | Spouse's pension income - retirement 3(imputed) |
| IMAMK67_2_1_15 | Spouse's pension income - widow 1(imputed)      |
| IMAMK67_2_2_15 | Spouse's pension income - widow 2(imputed)      |
| IMAMK67_2_3_15 | Spouse's pension income - widow 3(imputed)      |
| IMAMK67_3_1_15 | Spouse's pension income - disability 1(imputed) |
| IMAMK67_3_2_15 | Spouse's pension income - disability 2(imputed) |
| IMAMK67_3_3_15 | Spouse's pension income - disability 3(imputed) |
| IMAMK67_4_1_15 | Spouse's other pension income 1(imputed)        |
| IMAMK67_4_2_15 | Spouse's other pension income 2(imputed)        |



IMAMK67\_4\_3\_15 Spouse's other pension income 3(imputed)  
 K61\_1\_1\_IMP\_15 Own pension income -retirement 1(Flag if imputed value)  
 K61\_1\_2\_IMP\_15 Own pension income -retirement 2(Flag if imputed value)  
 K61\_1\_3\_IMP\_15 Own pension income -retirement 3(Flag if imputed value)  
 K61\_2\_1\_IMP\_15 Own pension income -widow 1(Flag if imputed value)  
 K61\_2\_2\_IMP\_15 Own pension income -widow 2(Flag if imputed value)  
 K61\_2\_3\_IMP\_15 Own pension income -widow 3(Flag if imputed value)  
 K61\_3\_1\_IMP\_15 Own pension income -disability 1(Flag if imputed value)  
 K61\_3\_2\_IMP\_15 Own pension income -disability 2(Flag if imputed value)  
 K61\_3\_3\_IMP\_15 Own pension income -disability 3(Flag if imputed value)  
 K61\_4\_1\_IMP\_15 Own other pension income 1(Flag if imputed value)  
 K61\_4\_2\_IMP\_15 Own other pension income 2(Flag if imputed value)  
 K61\_4\_3\_IMP\_15 Own other pension income 3(Flag if imputed value)  
 K67\_1\_1\_IMP\_15 Spouse's pension income - retirement 1(Flag if imputed  
 K67\_1\_2\_IMP\_15 Spouse's pension income - retirement 2(Flag if imputed  
 K67\_1\_3\_IMP\_15 Spouse's pension income - retirement 3(Flag if imputed  
 K67\_2\_1\_IMP\_15 Spouse's pension income - widow 1(Flag if imputed value  
 K67\_2\_2\_IMP\_15 Spouse's pension income - widow 2(Flag if imputed value  
 K67\_2\_3\_IMP\_15 Spouse's pension income - widow 3(Flag if imputed value  
 K67\_3\_1\_IMP\_15 Spouse's pension income - disability 1(Flag if imputed  
 K67\_3\_2\_IMP\_15 Spouse's pension income - disability 2(Flag if imputed  
 K67\_3\_3\_IMP\_15 Spouse's pension income - disability 3(Flag if imputed  
 K67\_4\_1\_IMP\_15 Spouse's other pension income 1(Flag if imputed value)  
 K67\_4\_2\_IMP\_15 Spouse's other pension income 2(Flag if imputed value)  
 K67\_4\_3\_IMP\_15 Spouse's other pension income 3(Flag if imputed value)

## Wave 5:

IMAMK61\_1\_1\_18 Own pension income -retirement 1 (imputed)  
 IMAMK61\_1\_2\_18 Own pension income -retirement 2 (imputed)  
 IMAMK61\_2\_1\_18 Own pension income -widow 1 (imputed)  
 IMAMK61\_2\_2\_18 Own pension income -widow 2 (imputed)  
 IMAMK61\_3\_1\_18 Own pension income -disability 1 (imputed)  
 IMAMK61\_3\_2\_18 Own pension income -disability 2 (imputed)  
 IMAMK61\_4\_1\_18 Own other pension income 1 (imputed)  
 IMAMK61\_4\_2\_18 Own other pension income 2 (imputed)  
 IMAMK67\_1\_1\_18 Spouse's pension income - retirement 1 (imputed)  
 IMAMK67\_1\_2\_18 Spouse's pension income - retirement 2 (imputed)  
 IMAMK67\_2\_1\_18 Spouse's pension income - widow 1 (imputed)  
 IMAMK67\_2\_2\_18 Spouse's pension income - widow 2 (imputed)  
 IMAMK67\_3\_1\_18 Spouse's pension income - disability 1 (imputed)  
 IMAMK67\_3\_2\_18 Spouse's pension income - disability 2 (imputed)  
 IMAMK67\_4\_1\_18 Spouse's other pension income 1 (imputed)  
 IMAMK67\_4\_2\_18 Spouse's other pension income 2 (imputed)  
 K61\_1\_1\_IMP\_18 Own pension income -retirement 1 (Flag if imputed value  
 K61\_1\_2\_IMP\_18 Own pension income -retirement 2 (Flag if imputed value  
 K61\_2\_1\_IMP\_18 Own pension income -widow 1 (Flag if imputed value)  
 K61\_2\_2\_IMP\_18 Own pension income -widow 2 (Flag if imputed value)  
 K61\_3\_1\_IMP\_18 Own pension income -disability 1 (Flag if imputed value  
 K61\_3\_2\_IMP\_18 Own pension income -disability 2 (Flag if imputed value  
 K61\_4\_1\_IMP\_18 Own other pension income 1 (Flag if imputed value)  
 K61\_4\_2\_IMP\_18 Own other pension income 2 (Flag if imputed value)  
 K67\_1\_1\_IMP\_18 Spouse's pension income - retirement 1 (Flag if imputed  
 K67\_1\_2\_IMP\_18 Spouse's pension income - retirement 2 (Flag if imputed  
 K67\_2\_1\_IMP\_18 Spouse's pension income - widow 1 (Flag if imputed valu  
 K67\_2\_2\_IMP\_18 Spouse's pension income - widow 2 (Flag if imputed valu  
 K67\_3\_1\_IMP\_18 Spouse's pension income - disability 1 (Flag if imputed  
 K67\_3\_2\_IMP\_18 Spouse's pension income - disability 2 (Flag if imputed  
 K67\_4\_1\_IMP\_18 Spouse's other pension income 1 (Flag if imputed value)  
 K67\_4\_2\_IMP\_18 Spouse's other pension income 2 (Flag if imputed value)

Individual Income from Other Government Transfers

| Wave | Variable | Label       |           |       |                      | Type  |
|------|----------|-------------|-----------|-------|----------------------|-------|
| 1    | R1IGXFR  | r1igxfr:w1  | Income:R  | Other | Government Transfers | Cont  |
| 2    | R2IGXFR  | r2igxfr:w2  | Income:R  | Other | Government Transfers | Cont  |
| 3    | R3IGXFR  | r3igxfr:w3  | Income:R  | Other | Government Transfers | Cont  |
| 4    | R4IGXFR  | r4igxfr:w4  | Income:R  | Other | Government Transfers | Cont  |
| 5    | R5IGXFR  | r5igxfr:w5  | Income:R  | Other | Government Transfers | Cont  |
| 1    | S1IGXFR  | s1igxfr:w1  | Income:S  | Other | Government Transfers | Cont  |
| 2    | S2IGXFR  | s2igxfr:w2  | Income:S  | Other | Government Transfers | Cont  |
| 3    | S3IGXFR  | s3igxfr:w3  | Income:S  | Other | Government Transfers | Cont  |
| 4    | S4IGXFR  | s4igxfr:w4  | Income:S  | Other | Government Transfers | Cont  |
| 5    | S5IGXFR  | s5igxfr:w5  | Income:S  | Other | Government Transfers | Cont  |
| 1    | R1IFGXFR | r1ifgxfr:w1 | IncFlag:R | Other | Government Transfers | Categ |
| 2    | R2IFGXFR | r2ifgxfr:w2 | IncFlag:R | Other | Government Transfers | Categ |
| 3    | R3IFGXFR | r3ifgxfr:w3 | IncFlag:R | Other | Government Transfers | Categ |
| 4    | R4IFGXFR | r4ifgxfr:w4 | IncFlag:R | Other | Government Transfers | Categ |
| 4    | R4IFGXFR | r5ifgxfr:w4 | IncFlag:R | Other | Government Transfers | Categ |
| 1    | S1IFGXFR | s1ifgxfr:w1 | IncFlag:S | Other | Government Transfers | Categ |
| 2    | S2IFGXFR | s2ifgxfr:w2 | IncFlag:S | Other | Government Transfers | Categ |
| 3    | S3IFGXFR | s3ifgxfr:w3 | IncFlag:S | Other | Government Transfers | Categ |
| 4    | S4IFGXFR | s4ifgxfr:w4 | IncFlag:S | Other | Government Transfers | Categ |
| 5    | S5IFGXFR | s5ifgxfr:w5 | IncFlag:S | Other | Government Transfers | Categ |

Descriptive Statistics

| Variable | N     | Mean    | Std Dev   | Minimum | Maximum    |
|----------|-------|---------|-----------|---------|------------|
| R1IGXFR  | 15126 | 806.65  | 9039.99   | 0.00    | 672000.00  |
| R2IGXFR  | 13662 | 3403.59 | 85719.23  | 0.00    | 9333312.00 |
| R3IGXFR  | 15721 | 1740.54 | 13935.49  | 0.00    | 960000.00  |
| R4IGXFR  | 14745 | 2272.67 | 11667.32  | 0.00    | 636000.00  |
| R5IGXFR  | 17094 | 2529.68 | 11044.10  | 0.00    | 960000.00  |
| S1IGXFR  | 10632 | 821.35  | 9732.48   | 0.00    | 672000.00  |
| S2IGXFR  | 9547  | 3582.35 | 100684.41 | 0.00    | 9333312.00 |
| S3IGXFR  | 10590 | 1558.95 | 8587.16   | 0.00    | 504000.00  |
| S4IGXFR  | 10343 | 2063.04 | 11926.47  | 0.00    | 636000.00  |
| S5IGXFR  | 11969 | 2389.03 | 12500.03  | 0.00    | 960000.00  |
| R1IFGXFR | 15126 | 0.00    | 0.07      | 0.00    | 1.00       |
| R2IFGXFR | 13673 | 0.01    | 0.09      | -1.00   | 1.00       |
| R3IFGXFR | 15723 | 0.01    | 0.09      | -1.00   | 1.00       |
| R4IFGXFR | 14745 | 0.01    | 0.09      | 0.00    | 1.00       |
| R5IFGXFR | 17094 | 0.03    | 0.16      | 0.00    | 1.00       |
| S1IFGXFR | 10932 | -0.02   | 0.18      | -1.00   | 1.00       |
| S2IFGXFR | 9673  | -0.01   | 0.14      | -1.00   | 1.00       |
| S3IFGXFR | 10941 | -0.03   | 0.19      | -1.00   | 1.00       |
| S4IFGXFR | 10414 | 0.00    | 0.12      | -1.00   | 1.00       |
| S5IFGXFR | 12059 | 0.03    | 0.21      | -1.00   | 1.00       |

Categorical Variable Codes

| Value-----                       | R1IFGXFR | R2IFGXFR | R3IFGXFR | R4IFGXFR | R5IFGXFR |
|----------------------------------|----------|----------|----------|----------|----------|
| .m:Missing                       | 60       | 31       |          | 34       | 20       |
| -1.No Imput:section not complete |          | 11       | 2        |          |          |
| 0.Not imputed                    | 15052    | 13554    | 15596    | 14634    | 16658    |

|                                  |  |          |          |          |          |          |
|----------------------------------|--|----------|----------|----------|----------|----------|
| 1.Imputed                        |  | 74       | 108      | 125      | 111      | 436      |
| Value-----                       |  | S1IFGXFR | S2IFGXFR | S3IFGXFR | S4IFGXFR | S5IFGXFR |
| .m:Missing                       |  | 51       | 22       |          | 22       | 9        |
| .u:Unmar                         |  | 4203     | 4009     | 4782     | 4343     | 5223     |
| -1.No Imput:section not complete |  | 300      | 126      | 351      | 71       | 90       |
| 0.Not imputed                    |  | 10591    | 9470     | 10522    | 10257    | 11534    |
| 1.Imputed                        |  | 41       | 77       | 68       | 86       | 435      |

## How Constructed

RwIGXFR and SwIGXFR capture the respondent's and spouse's other government transfer individual income at an annual-level, respectively. RwIGXFR and SwIGXFR include any monetary or in-kind transfer from public institutions, not already mentioned. Government transfer income questions are asked without instruction as to whether these amounts should be reported before or after tax.

Income questions about the respondent and the respondent's spouse (if applicable) are asked separately, but both are answered by the financial respondent. If the financial respondent is the respondent, then questions the financial respondent answers about him/herself are assigned to the respondent and those about their spouse are assigned to the spouse. However, if the financial respondent is the respondent's spouse, then questions the financial respondent answers about him/herself are assigned to the spouse and those concerning their spouse are assigned to the respondent. Proxy respondents can also answer these income questions in the place of the respondent or their spouse and, in the case that they do, they are asked to answer about the respondent and their spouse (if applicable), and financial information is then assigned respectively.

At all waves the financial respondent is first asked "Excluding income you have already mentioned, during the last year did you receive any monetary or in-kind transfer from public institutions such as Procampo, Progres, INSEN, Seguro Popular?" In Wave 1 -4 if they answer yes, they are then asked "About how much was it in a typical month?" Starting in Wave 5 if they answer yes, they are then asked separately for up to two transfers "About how much was it in a typical month?" RwIGXFR is derived as yearly income from other government transfers by multiplying the reported monthly amount by 12. In the case that the respondent did not receive any monetary or in-kind transfers from public institutions, RwIGXFR has a value of 0. Special missing .m is used if at least one component of RwIGXFR was not imputed because the section was not completed. RwIGXFR is set to blank missing (.) if the respondent did not participate in the current wave.

If the respondent has a spouse, the financial respondent is asked "Excluding income you have already mentioned, during the last year did your spouse receive any monetary or in-kind transfer from public institutions such as Procampo, Progres, INSEN, Seguro Popular?" If they answer yes, they are then asked "About how much was it in a typical month?" SwIGXFR is derived as yearly income from other government transfers by multiplying the reported monthly amount by 12. In the case that the spouse did not receive any monetary or in-kind transfers from public institutions, SwIGXFR has a value of 0. Special missing .m is used if at least one component of SwIGXFR was not imputed because the section was not completed. Special missing value .u is used when the respondent does not have a spouse at this wave. SwIGXFR is set to blank missing (.) if the respondent did not participate in the current wave.

For questions eliciting a value included in RwIGXFR and SwIGXFR, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

RwIFGXFR and SwIGXFR are flag variables indicating whether or not any component of RwIGXFR or SwIGXFR was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

## Cross Wave Differences in MHAS

In Waves 1-4, MHAS asked the respondent to report the total amount of government transfers in a single values. Starting in Wave 5, MHAS asked the respondent to report up to two government transfers.

## Differences with the RAND HRS/Harmonized HRS

In the HRS, respondents are asked to report income from veterans' benefits, welfare, and food stamps. In the MHAS, respondents are asked to report any monetary or in-kind transfer from public institutions such as Procampo, Progres, INSEN, Seguro Popular. Since Seguro Popular started to be implemented in 2003, this institution is only listed starting in wave 2. This difference implies that what is captured in Rwigxfr in the Harmonized MHAS might differ from what is captured by Rwigxfr in the RAND HRS.

In the HRS, respondents are instructed to report other government transfer income before taxes and deductions. In the MHAS, other government transfer income questions are asked without instruction as to whether these amounts should be reported before or after tax.

Other government transfers in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

## MHAS Variables Used

### Wave 1:

|         |  |
|---------|--|
| IMAM76A | own transfer income from institutions (imputed)      |
| IMAM79A | spouse's transfer income from institutions (imputed) |
| K76AIMP | if imputed value                                     |
| K79AIMP | if imputed value                                     |

### Wave 2:

|         |  |
|---------|--|
| IMAM79A | own transfer income from institutions (imputed)      |
| IMAM82C | spouse's transfer income from institutions (imputed) |
| K79AIMP | if imputed value                                     |
| K82CIMP | if imputed value                                     |

### Wave 3:

|              |  |
|--------------|--|
| IMAMK80_1_12 | Own transfer income from institutions (imputed)              |
| IMAMK83_1_12 | Spouse's transfer income from institutions (imputed)         |
| K80_1_IMP_12 | Own transfer income from institutions (Flag if imputed)      |
| K83_1_IMP_12 | Spouse's transfer income from institutions (Flag if imputed) |

### Wave 4:

|              |  |
|--------------|--|
| IMAMK80_1_15 | Own transfer income from institutions (imputed)              |
| IMAMK83_1_15 | Spouse's transfer income from institutions (imputed)         |
| K80_1_IMP_15 | Own transfer income from institutions (Flag if imputed)      |
| K83_1_IMP_15 | Spouse's transfer income from institutions (Flag if imputed) |

### Wave 5:

|                |  |
|----------------|--|
| IMAMK80_1_1_18 | Own transfer income from institutions 1 (imputed)              |
| IMAMK80_1_2_18 | Own transfer income from institutions 2 (imputed)              |
| IMAMK83_1_1_18 | Spouse's transfer income from institutions 1 (imputed)         |
| IMAMK83_1_2_18 | Spouse's transfer income from institutions 2 (imputed)         |
| K80_1_1_IMP_18 | Own transfer income from institutions 1 (Flag if imputed)      |
| K80_1_2_IMP_18 | Own transfer income from institutions 2 (Flag if imputed)      |
| K83_1_1_IMP_18 | Spouse's transfer income from institutions 1 (Flag if imputed) |
| K83_1_2_IMP_18 | Spouse's transfer income from institutions 2 (Flag if imputed) |

All Other Income

| Wave | Variable | Label       |           |              | Type  |
|------|----------|-------------|-----------|--------------|-------|
| 1    | R1IOTHR  | r1iothr:w1  | Income:R  | Other Income | Cont  |
| 2    | R2IOTHR  | r2iothr:w2  | Income:R  | Other Income | Cont  |
| 3    | R3IOTHR  | r3iothr:w3  | Income:R  | Other Income | Cont  |
| 4    | R4IOTHR  | r4iothr:w4  | Income:R  | Other Income | Cont  |
| 5    | R5IOTHR  | r5iothr:w5  | Income:R  | Other Income | Cont  |
| 1    | S1IOTHR  | s1iothr:w1  | Income:S  | Other Income | Cont  |
| 2    | S2IOTHR  | s2iothr:w2  | Income:S  | Other Income | Cont  |
| 3    | S3IOTHR  | s3iothr:w3  | Income:S  | Other Income | Cont  |
| 4    | S4IOTHR  | s4iothr:w4  | Income:S  | Other Income | Cont  |
| 5    | S5IOTHR  | s5iothr:w5  | Income:S  | Other Income | Cont  |
| 1    | R1IFOTHR | r1ifothr:w1 | IncFlag:R | Other Income | Categ |
| 2    | R2IFOTHR | r2ifothr:w2 | IncFlag:R | Other Income | Categ |
| 3    | R3IFOTHR | r3ifothr:w3 | IncFlag:R | Other Income | Categ |
| 4    | R4IFOTHR | r4ifothr:w4 | IncFlag:R | Other Income | Categ |
| 5    | R5IFOTHR | r5ifothr:w5 | IncFlag:R | Other Income | Categ |
| 1    | S1IFOTHR | s1ifothr:w1 | IncFlag:S | Other Income | Categ |
| 2    | S2IFOTHR | s2ifothr:w2 | IncFlag:S | Other Income | Categ |
| 3    | S3IFOTHR | s3ifothr:w3 | IncFlag:S | Other Income | Categ |
| 4    | S4IFOTHR | s4ifothr:w4 | IncFlag:S | Other Income | Categ |
| 5    | S5IFOTHR | s5ifothr:w5 | IncFlag:S | Other Income | Categ |

Descriptive Statistics

| Variable | N     | Mean     | Std Dev   | Minimum | Maximum     |
|----------|-------|----------|-----------|---------|-------------|
| R1IOTHR  | 15126 | 55.01    | 1310.06   | 0.00    | 60000.00    |
| R2IOTHR  | 13662 | 4862.05  | 132496.59 | 0.00    | 6000000.00  |
| R3IOTHR  | 15721 | 12181.17 | 276542.81 | 0.00    | 16800000.00 |
| R4IOTHR  | 14745 | 8227.42  | 212717.13 | 0.00    | 14400000.00 |
| R5IOTHR  | 17094 | 26926.96 | 657457.31 | 0.00    | 48000000.00 |
| S1IOTHR  | 10632 | 5.77     | 346.83    | 0.00    | 33600.00    |
| S2IOTHR  | 9547  | 4090.11  | 119606.70 | 0.00    | 6000000.00  |
| S3IOTHR  | 10590 | 10489.39 | 266187.48 | 0.00    | 16800000.00 |
| S4IOTHR  | 10343 | 8339.55  | 231241.51 | 0.00    | 14400000.00 |
| S5IOTHR  | 11969 | 26141.80 | 612089.55 | 0.00    | 30000000.00 |
| R1IFOTHR | 15126 | 0.00     | 0.01      | 0.00    | 1.00        |
| R2IFOTHR | 13673 | -0.00    | 0.04      | -1.00   | 1.00        |
| R3IFOTHR | 15723 | 0.01     | 0.08      | -1.00   | 1.00        |
| R4IFOTHR | 14745 | 0.00     | 0.06      | 0.00    | 1.00        |
| R5IFOTHR | 17094 | 0.02     | 0.13      | 0.00    | 1.00        |
| S1IFOTHR | 10928 | -0.03    | 0.16      | -1.00   | 1.00        |
| S2IFOTHR | 9673  | -0.01    | 0.11      | -1.00   | 1.00        |
| S3IFOTHR | 10941 | -0.03    | 0.19      | -1.00   | 1.00        |
| S4IFOTHR | 10414 | -0.00    | 0.11      | -1.00   | 1.00        |
| S5IFOTHR | 12059 | 0.02     | 0.18      | -1.00   | 1.00        |

Categorical Variable Codes

| Value-----                       | R1IFOTHR | R2IFOTHR | R3IFOTHR | R4IFOTHR | R5IFOTHR |
|----------------------------------|----------|----------|----------|----------|----------|
| .m:Missing                       | 60       | 31       |          | 34       | 20       |
| -1.No Imput:section not complete |          | 11       | 2        |          |          |
| 0.Not imputed                    | 15123    | 13656    | 15627    | 14688    | 16784    |

|                                  |  |          |          |          |          |          |
|----------------------------------|--|----------|----------|----------|----------|----------|
| 1.Imputed                        |  | 3        | 6        | 94       | 57       | 310      |
| Value-----                       |  | S1IFOTHR | S2IFOTHR | S3IFOTHR | S4IFOTHR | S5IFOTHR |
| .m:Missing                       |  | 55       | 22       |          | 22       | 9        |
| .u:Unmar                         |  | 4203     | 4009     | 4782     | 4343     | 5223     |
| -1.No Imput:section not complete |  | 296      | 126      | 351      | 71       | 90       |
| 0.Not imputed                    |  | 10630    | 9545     | 10544    | 10284    | 11642    |
| 1.Imputed                        |  | 2        | 2        | 46       | 59       | 327      |

## How Constructed

RwIOTHR and SwIOTHR capture the respondent's and spouse's other individual income at an annual-level, respectively. The questions eliciting other income have changed over the different waves of MAHS. In Wave 1 RwIOTHR and SwIOTHR include any divorce, separation, or survival pensions, not already mentioned. In waves 2-4 RwIOTHR and SwIOTHR include any divorce, separation, or survival pensions, not already mentioned and any income from the sale of some good such as property, a gift, or an inheritance. Starting in Wave 5, RwIOTHR and SwIOTHR only include any income from the sale of some good such as property, a gift, or an inheritance. Other income questions are asked without instruction as to whether these amounts should be reported before or after tax.

Income questions about the respondent and the respondent's spouse (if applicable) are asked separately, but both are answered by the financial respondent. If the financial respondent is the respondent, then questions the financial respondent answers about him/herself are assigned to the respondent and those about their spouse are assigned to the spouse. However, if the financial respondent is the respondent's spouse, then questions the financial respondent answers about him/herself are assigned to the spouse and those concerning their spouse are assigned to the respondent. Proxy respondents can also answer these income questions in the place of the respondent or their spouse and, in the case that they do, they are asked to answer about the respondent and their spouse (if applicable), and financial information is then assigned respectively.

In waves 1-4 The financial respondent is first asked "Excluding income you have already mentioned, during the last year did you receive any divorce, separation or survival pension?" If they answer yes, they are then asked "About how much was it in a typical month?" Starting in Wave 2, the financial respondent is then asked "Excluding income you have already mentioned, during the last year did you receive income for the sale of some good such as property, a gift, or an inheritance?" If they answer yes, they are then asked "About how much was it in a typical month?" Starting in Wave 5, income from divorce, separation or survival pension is no longer asked about and only income from the the sale of some good like a property, a gift, or an inheritance. In wave 1, RwIOTHR is derived as yearly other income by multiplying the reported monthly amount by 12. In waves 2-4, RwIOTHR is derived as yearly other income by multiplying the reported monthly amounts of income from divorce, separation, or survival pensions and income from the sale of some good such as property, a gift, or an inheritance by 12. In Wave 5, RwIOTHR is derived as yearly other income by multiplying the reported monthly amounts of income from the sale of some good such as property, a gift, or an inheritance by 12. In the case that the respondent did not receive any income from divorce, separation, or survival pensions (up until Wave 4) or income from the sale of some good such as property, a gift, or an inheritance (starting in Wave 2), RwIOTHR has a value of 0. Special missing .m is used if at least one component of RwIOTHR was not imputed because the section was not completed. RwIOTHR is set to blank missing (.) if the respondent did not participate in the current wave.

If the respondent has a spouse, the financial respondent is asked "Excluding income you have already mentioned, during the last year did your spouse receive any divorce, separation or survival pension?" If they answer yes, they are then asked "About how much was it in a typical month?" Starting in Wave 2, the financial respondent is then asked "Excluding income you have already mentioned, during the last year did your spouse receive income for the sale of some good such as property, a gift, or an inheritance?" If they answer yes, they are then asked "About how much was it in a typical month?" In wave 1, SwIOTHR is derived as yearly other income by multiplying the reported monthly amount by 12. Starting in Wave 2, SwIOTHR is derived as yearly other income by multiplying the reported monthly amounts of income from divorce, separation, or survival pensions and income from the sale of some good such as property, a gift, or an inheritance by 12. In the case that the spouse did not receive any income from divorce, separation, or survival pensions or income from the sale of some good such as property, a gift, or an inheritance (starting in Wave 2), SwIOTHR has a value of 0. Special missing .m is used if at least one component of SwIOTHR was not imputed because the section was not completed. Special missing value .u is used when the respondent does not have a spouse at this wave. SwIOTHR is set to blank missing (.) if the respondent did not participate in the current wave.

For questions eliciting a value included in `RwIOTHR` and `SwIOTHR`, the MHAS used unfolding bracket questions when the respondent was unsure of the exact value. Using the information provided by the unfolding brackets, unknown amounts were replaced with imputed values using the imputed variables made available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), 2015 ([here](#)), and 2018 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

`RwIFOTHR` and `SwIOTHR` are flag variables indicating whether or not any component of `RwIOTHR` or `SwIOTHR` was imputed. A code of 0 indicates that no component was imputed. A code of 1 indicates that at least one component was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

## Cross Wave Differences in MHAS

In Wave 1, MHAS asks respondents about income they received from any divorce, separation or survival pension. Starting in Wave 2, MHAS added a question that asks respondents about income they received from the sale of some good such as property, a gift, or an inheritance. Therefore, `RwIOTHR` in Wave 1 only takes into account income received from divorce, separation or survival pension, but starting in Wave 2, `RwIOTHR` takes into account income received from divorce, separation or survival pension and income received from the sale of some good such as property, a gift, or an inheritance. Also, starting in Wave 5, respondents were not asked about any income from divorce, separation or survival pension.

## Differences with the RAND HRS/Harmonized HRS

In the HRS, respondents are asked to report income from alimony, other income, and lump sums from insurance, pension, and inheritance. In the MHAS, respondents are asked to report income from divorce, separation, or survival pensions and income from the sale of some good such as property, a gift, or an inheritance (starting in Wave 2). This difference implies that what is captured in `RwIOTHR` in the Harmonized MHAS might differ from what is captured by `RwIOTHR` in the RAND HRS.

In the HRS, respondents are instructed to report other income before taxes and deductions. In the MHAS, other income questions are asked without instruction as to whether these amounts should be reported before or after tax.

Other income in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

## MHAS Variables Used

### Wave 1:

|                      |   |
|----------------------|---|
| <code>IMAM76B</code> | own transfer income from individuals (imputed)      |
| <code>IMAM79B</code> | spouse's transfer income from individuals (imputed) |
| <code>K76BIMP</code> | if imputed value                                    |
| <code>K79BIMP</code> | if imputed value                                    |

### Wave 2:

|                      |   |
|----------------------|---|
| <code>IMAM79B</code> | own transfer income from individuals (imputed)      |
| <code>IMAM79C</code> | own transfer income from properties (imputed)       |
| <code>IMAM82D</code> | spouse's transfer income from individuals (imputed) |
| <code>IMAM82E</code> | spouse's transfer income from properties (imputed)  |
| <code>K79BIMP</code> | if imputed value                                    |
| <code>K79CIMP</code> | if imputed value                                    |
| <code>K82DIMP</code> | if imputed value                                    |
| <code>K82EIMP</code> | if imputed value                                    |

### Wave 3:

|                           |   |
|---------------------------|---|
| <code>IMAMK80_2_12</code> | Own transfer income from individuals (imputed)          |
| <code>IMAMK80_3_12</code> | Own transfer income from properties (imputed)           |
| <code>IMAMK83_2_12</code> | Spouse's transfer income from individuals (imputed)     |
| <code>IMAMK83_3_12</code> | Spouse's transfer income from properties (imputed)      |
| <code>K80_2_IMP_12</code> | Own transfer income from individuals (Flag if imputed v |
| <code>K80_3_IMP_12</code> | Own transfer income from properties (Flag if imputed va |
| <code>K83_2_IMP_12</code> | Spouse's transfer income from individuals (Flag if impu |

|              |   |
|--------------|---|
| K83_3_IMP_12 | Spouse's transfer income from properties (Flag if imput |
| Wave 4:      |   |
| IMAMK80_2_15 | Own transfer income from individuals (imputed)          |
| IMAMK80_3_15 | Own transfer income from properties (imputed)           |
| IMAMK83_2_15 | Spouse's transfer income from individuals (imputed)     |
| IMAMK83_3_15 | Spouse's transfer income from properties (imputed)      |
| K80_2_IMP_15 | Own transfer income from individuals (Flag if imputed v |
| K80_3_IMP_15 | Own transfer income from properties (Flag if imputed va |
| K83_2_IMP_15 | Spouse's transfer income from individuals (Flag if impu |
| K83_3_IMP_15 | Spouse's transfer income from properties (Flag if imput |
| Wave 5:      |   |
| IMAMK80_2_18 |   |
| IMAMK80_3_18 | Own transfer income from properties (imputed)           |
| IMAMK83_2_18 | Spouse's transfer income from properties (imputed)      |
| IMAMK83_3_18 |   |
| K80_2_IMP_18 |   |
| K80_3_IMP_18 | Own transfer income from properties (Flag if imputed va |
| K83_2_IMP_18 | Spouse's transfer income from properties (Flag if imput |
| K83_3_IMP_18 |   |



Total Household Income (respondent & spouse)

| Wave | Variable | Label                          | Type  |
|------|----------|--------------------------------|-------|
| 1    | H1ITOT   | h1itot:w1 Incm:H Total Income  | Cont  |
| 2    | H2ITOT   | h2itot:w2 Incm:H Total Income  | Cont  |
| 3    | H3ITOT   | h3itot:w3 Incm:H Total Income  | Cont  |
| 4    | H4ITOT   | h4itot:w4 Incm:H Total Income  | Cont  |
| 5    | H5ITOT   | h5itot:w5 Incm:H Total Income  | Cont  |
| 1    | H1IFTOT  | h1iftot:w1 IncFlag:H Total Inc | Categ |
| 2    | H2IFTOT  | h2iftot:w2 IncFlag:H Total Inc | Categ |
| 3    | H3IFTOT  | h3iftot:w3 IncFlag:H Total Inc | Categ |
| 4    | H4IFTOT  | h4iftot:w4 IncFlag:H Total Inc | Categ |
| 5    | H5IFTOT  | h5iftot:w5 IncFlag:H Total Inc | Categ |

Descriptive Statistics

| Variable | N     | Mean      | Std Dev    | Minimum     | Maximum      |
|----------|-------|-----------|------------|-------------|--------------|
| H1ITOT   | 14824 | 88577.16  | 1304117.63 | -5990400.00 | 90000000.00  |
| H2ITOT   | 13539 | 82340.75  | 616644.39  | -222000.00  | 34334852.00  |
| H3ITOT   | 15370 | 104728.19 | 627940.14  | -1194747.88 | 36021600.00  |
| H4ITOT   | 14674 | 132437.77 | 1555378.87 | -650309.00  | 108000000.00 |
| H5ITOT   | 17004 | 170284.54 | 1198125.37 | -4118774.50 | 60000000.00  |
| H1IFTOT  | 15184 | 0.13      | 0.40       | -1.00       | 1.00         |
| H2IFTOT  | 13703 | 0.12      | 0.36       | -1.00       | 1.00         |
| H3IFTOT  | 15723 | 0.11      | 0.38       | -1.00       | 1.00         |
| H4IFTOT  | 14779 | 0.11      | 0.33       | -1.00       | 1.00         |
| H5IFTOT  | 17114 | 0.16      | 0.39       | -1.00       | 1.00         |

Categorical Variable Codes

| Value-----                       | H1IFTOT | H2IFTOT | H3IFTOT | H4IFTOT | H5IFTOT |
|----------------------------------|---------|---------|---------|---------|---------|
| .m:Missing                       | 2       | 1       |         |         |         |
| -1.No Imput:section not complete | 359     | 164     | 353     | 105     | 110     |
| 0.Not imputed                    | 12522   | 11774   | 13270   | 13007   | 14084   |
| 1.Imputed                        | 2303    | 1765    | 2100    | 1667    | 2920    |

How Constructed

HwITOT captures the household's total income at an annual-level and is based on information from:

Respondent's and spouse's employment earnings, as previously described

Household's total capital income, as previously described

Respondent's and spouse's income from private pensions, as previously described

Respondent's and spouse's income from public pensions, as previously described

Respondent's and spouse's income from other pensions, as previously described

Respondent's and spouse's other government transfer income, as previously described

Respondent's and spouse's other income, as previously described

For unpartnered and unmarried respondents HwITOT is constructed as the sum of the respondent's employment earnings, households' total capital income, respondent's income from private pensions, respondent's income from public pensions, respondent's income from other pensions, respondent's income from other government transfers, and respondent's income from other income. For married/partnered respondents HwITOT

is constructed as the sum of the respondent's and spouse's employment earnings, households' total capital income, respondent's and spouse's income from private pensions, respondent's and spouse's income from public pensions, respondent's and spouse's income from other pensions, respondent's and spouse's income from other government transfers, and respondent's and spouse's income from other income. All components of this variable are constructed at the household level and include imputed values. In MHAS, the household is a couple or a single person. Also special missing .m is used if at least one component of HwITOT was not imputed because the respondent did not complete the section. HwITOT is set to blank missing (.) if the respondent did not participate in the current wave.

HwIFTOT is a flag variable based on the original flag variables (previously defined as RwifeARN, SwIEARN, HwIFCAP, RwifePENA, SwIPENA, RwifePUBPEN, SwIFPUBPEN, RwifePEN, SwIPEN, RwifeGXFR, SwIGXFR, RwifeOTHR, SwIOTHR), indicating whether or not any component of HwITOT was imputed. A code of 0 indicates that no component of HwITOT was imputed. A code of 1 indicates that at least one component of HwITOT was imputed. A code of -1 indicates that at least one component was not imputed because the respondent did not complete the section and this value has been left missing.

Both the MHAS created income variable (available to the public at [www.MHASweb.org](http://www.MHASweb.org)) and HwITOT are derived from the same components. However, there are two main differences between these two variables. The MHAS income variable represents the total individual income per month and HwITOT captures the household's total income at an annual-level. Therefore, the MHAS income variable only considers the individual income for those who completed the interview while HwITOT includes the reported spouse income for spouses even if they did not complete the interview.

Please see the 2001 [\(here\)](#), 2003 [\(here\)](#), 2012 [\(here\)](#), 2015 [\(here\)](#), and 2018 [\(here\)](#) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on how the MHAS income variable was created.

## Cross Wave Differences in MHAS

See individual components.

Starting in Wave 3 of MHAS, respondents were allowed to identify multiple pension providers for each type of pension but were only asked one amount, regardless of how many different providers were identified. Given this, after Wave 2 it was not possible to identify pension income by the type of pension provider as we have for earlier waves. As a result, starting in Wave 3, HwITOT is constructed using respondent's and spouses total pension income instead of respondent's and spouse's income from private pensions, respondent's and spouse's income from public pensions, and respondent's and spouse's income from other pensions. This should not affect what is captured by HwITOT in waves after Wave 2 as compared to Waves 1 and 2.

## Differences with the RAND HRS/Harmonized HRS

See individual components.

In the HRS, respondents are instructed to report income before taxes and deductions. In the MHAS, income questions are asked without instruction as to whether these amounts should be reported before or after tax.

Total family income in MHAS is measured in nominal pesos, whereas the equivalent measure in RAND HRS is in nominal dollars. Therefore, conversion into a common currency is necessary before comparison of these data.

## MHAS Variables Used

Wave 1:

|          |                                   |
|----------|-----------------------------------|
| IMAM10_1 | business income-1 (imputed)       |
| IMAM10_2 | business income-2 (imputed)       |
| IMAM13_1 | business expenditures-1 (imputed) |
| IMAM13_2 | business expenditures-2 (imputed) |
| IMAM24_1 | property rent income-1 (imputed)  |
| IMAM24_2 | property rent income-2 (imputed)  |
| IMAM27_1 | property expenditures-1 (imputed) |
| IMAM27_2 | property expenditures-2 (imputed) |

|          |  |
|----------|--|
| IMAM33_1 | capital assets income-1 (imputed)                    |
| IMAM33_2 | capital assets income-2 (imputed)                    |
| IMAM33_3 | capital assets income-3 (imputed)                    |
| IMAM44   | own earned income-1 (imputed)                        |
| IMAM45   | own earned income-2 (imputed)                        |
| IMAM47   | own earned income-3 (imputed)                        |
| IMAM48   | own earned income-4 (imputed)                        |
| IMAM50   | spouse's earned income-1 (imputed)                   |
| IMAM51   | spouse's earned income-2 (imputed)                   |
| IMAM53   | spouse's earned income-3 (imputed)                   |
| IMAM54   | spouse's earned income-4 (imputed)                   |
| IMAM55A  | own pension income -retirement (imputed)             |
| IMAM55B  | own pension income -widow (imputed)                  |
| IMAM55C  | own pension income -disability (imputed)             |
| IMAM55D  | own other pension income                             |
| IMAM61A  | spouse's pension income -retirement (imputed)        |
| IMAM61B  | spouse's pension income -widow (imputed)             |
| IMAM61C  | spouse's pension income -disability (imputed)        |
| IMAM61D  | spouse's other pension income (imputed)              |
| IMAM76A  | own transfer income from institutions (imputed)      |
| IMAM76B  | own transfer income from individuals (imputed)       |
| IMAM76B  | own transfer income from individuals (imputed)       |
| IMAM79A  | spouse's transfer income from institutions (imputed) |
| IMAM79B  | spouse's transfer income from individuals (imputed)  |
| IMAM79B  | spouse's transfer income from individuals (imputed)  |
| K10_1IMP | if imputed value                                     |
| K10_2IMP | if imputed value                                     |
| K13_1IMP | if imputed value                                     |
| K13_2IMP | if imputed value                                     |
| K24_1IMP | if imputed value                                     |
| K24_2IMP | if imputed value                                     |
| K27_1IMP | if imputed value                                     |
| K27_2IMP | if imputed value                                     |
| K33_1IMP | if imputed value                                     |
| K33_2IMP | if imputed value                                     |
| K33_3IMP | if imputed value                                     |
| K44IMP   | if imputed value                                     |
| K45IMP   | if imputed value                                     |
| K47IMP   | if imputed value                                     |
| K48IMP   | if imputed value                                     |
| K50IMP   | if imputed value                                     |
| K51IMP   | if imputed value                                     |
| K53IMP   | if imputed value                                     |
| K54IMP   | if imputed value                                     |
| K55AIMP  | if imputed value                                     |
| K55BIMP  | if imputed value                                     |
| K55CIMP  | if imputed value                                     |
| K55DIMP  | if imputed value                                     |
| K56_1    | source of retirement pension                         |
| K56_2    | source of widowhood pension                          |
| K56_3    | source of disability pension                         |
| K56_4    | source of other pension                              |
| K61AIMP  | if imputed value                                     |
| K61BIMP  | if imputed value                                     |
| K61CIMP  | if imputed value                                     |
| K61DIMP  | if imputed value                                     |
| K62_1    | source of retirement pension of spouse               |
| K62_2    | source of widowhood pension of spouse                |
| K62_3    | source of disability pension of spouse               |
| K62_4    | source of other pension of spouse                    |
| K76AIMP  | if imputed value                                     |
| K76BIMP  | if imputed value                                     |
| K76BIMP  | if imputed value                                     |
| K79AIMP  | if imputed value                                     |

|              |  |
|--------------|--|
| K79BIMP      | if imputed value                                     |
| K79BIMP      | if imputed value                                     |
| Wave 2:      |  |
| IMAM10_1     | business income-1 (imputed)                          |
| IMAM10_2     | business income-2 (imputed)                          |
| IMAM13_1     | business expenditures-1 (imputed)                    |
| IMAM13_2     | business expenditures-2 (imputed)                    |
| IMAM26_1     | property rent income-1 (imputed)                     |
| IMAM26_2     | property rent income-2 (imputed)                     |
| IMAM29_1     | property expenditures-1 (imputed)                    |
| IMAM29_2     | property expenditures-2 (imputed)                    |
| IMAM35_1     | capital assets income-1 (imputed)                    |
| IMAM35_2     | capital assets income-2 (imputed)                    |
| IMAM35_3     | capital assets income-3 (imputed)                    |
| IMAM47       | own earned income-1 (imputed)                        |
| IMAM48       | own earned income-2 (imputed)                        |
| IMAM50       | own earned income-3 (imputed)                        |
| IMAM51       | own earned income-4 (imputed)                        |
| IMAM53       | spouse's earned income-1 (imputed)                   |
| IMAM54       | spouse's earned income-2 (imputed)                   |
| IMAM56       | spouse's earned income-3 (imputed)                   |
| IMAM57       | spouse's earned income-4 (imputed)                   |
| IMAM79A      | own transfer income from institutions (imputed)      |
| IMAM79B      | own transfer income from individuals (imputed)       |
| IMAM79C      | own transfer income from properties (imputed)        |
| IMAM82C      | spouse's transfer income from institutions (imputed) |
| IMAM82D      | spouse's transfer income from individuals (imputed)  |
| IMAM82E      | spouse's transfer income from properties (imputed)   |
| K10_1IMP     | if imputed value                                     |
| K10_2IMP     | if imputed value                                     |
| K13_1IMP     | if imputed value                                     |
| K13_2IMP     | if imputed value                                     |
| K26_1IMP     | if imputed value                                     |
| K26_2IMP     | if imputed value                                     |
| K29_1IMP     | if imputed value                                     |
| K29_2IMP     | if imputed value                                     |
| K35_1IMP     | if imputed value                                     |
| K35_2IMP     | if imputed value                                     |
| K35_3IMP     | if imputed value                                     |
| K47IMP       | if imputed value                                     |
| K48IMP       | if imputed value                                     |
| K50IMP       | if imputed value                                     |
| K51IMP       | if imputed value                                     |
| K53IMP       | if imputed value                                     |
| K54IMP       | if imputed value                                     |
| K56IMP       | if imputed value                                     |
| K57IMP       | if imputed value                                     |
| K79AIMP      | if imputed value                                     |
| K79BIMP      | if imputed value                                     |
| K79CIMP      | if imputed value                                     |
| K82CIMP      | if imputed value                                     |
| K82DIMP      | if imputed value                                     |
| K82EIMP      | if imputed value                                     |
| Wave 3:      |  |
| IMAMK11_1_12 | Business income-1 (imputed)                          |
| IMAMK11_2_12 | Business income-2 (imputed)                          |
| IMAMK13_1_12 | Business expenditures-1 (imputed)                    |
| IMAMK13_2_12 | Business expenditures-2 (imputed)                    |
| IMAMK27_1_12 | Property rent income-1 (imputed)                     |
| IMAMK27_2_12 | Property rent income-2 (imputed)                     |
| IMAMK29_1_12 | Property expenditures-1 (imputed)                    |
| IMAMK29_2_12 | Property expenditures-2 (imputed)                    |
| IMAMK36_1_12 | Capital assets income-1 (imputed)                    |
| IMAMK36_2_12 | Capital assets income-2 (imputed)                    |

|              |   |
|--------------|---|
| IMAMK36_3_12 | Capital assets income-3 (imputed)                       |
| IMAMK47A_12  | Own earned income-1 (imputed)                           |
| IMAMK48A_12  | Own earned income-2 (imputed)                           |
| IMAMK50A_12  | Own earned income-3 (imputed)                           |
| IMAMK51A_12  | Own earned income-4 (imputed)                           |
| IMAMK53A_12  | Spouse's earned income-1 (imputed)                      |
| IMAMK54A_12  | Spouse's earned income-2 (imputed)                      |
| IMAMK56A_12  | Spouse's earned income-3 (imputed)                      |
| IMAMK57A_12  | Spouse's earned income-4 (imputed)                      |
| IMAMK61_1_12 | Own pension income -retirement (imputed)                |
| IMAMK61_2_12 | Own pension income -widow (imputed)                     |
| IMAMK61_3_12 | Own pension income -disability (imputed)                |
| IMAMK61_4_12 | Own other pension income (imputed)                      |
| IMAMK67_1_12 | Spouse's pension income - retirement (imputed)          |
| IMAMK67_2_12 | Spouse's pension income - widow (imputed)               |
| IMAMK67_3_12 | Spouse's pension income - disability (imputed)          |
| IMAMK67_4_12 | Spouse's other pension income (imputed)                 |
| IMAMK80_1_12 | Own transfer income from institutions (imputed)         |
| IMAMK80_2_12 | Own transfer income from individuals (imputed)          |
| IMAMK80_3_12 | Own transfer income from properties (imputed)           |
| IMAMK83_1_12 | Spouse's transfer income from institutions (imputed)    |
| IMAMK83_2_12 | Spouse's transfer income from individuals (imputed)     |
| IMAMK83_3_12 | Spouse's transfer income from properties (imputed)      |
| K11_1_IMP_12 | Business income-1 (Flag if imputed value)               |
| K11_2_IMP_12 | Business income-2 (Flag if imputed value)               |
| K13_1_IMP_12 | Business expenditures-1 (Flag if imputed value)         |
| K13_2_IMP_12 | Business expenditures-2 (Flag if imputed value)         |
| K27_1_IMP_12 | Property rent income-1 (Flag if imputed value)          |
| K27_2_IMP_12 | Property rent income-2 (Flag if imputed value)          |
| K29_1_IMP_12 | Property expenditures-1 (Flag if imputed value)         |
| K29_2_IMP_12 | Property expenditures-2 (Flag if imputed value)         |
| K36_1_IMP_12 | Capital assets income-1 (Flag if imputed value)         |
| K36_2_IMP_12 | Capital assets income-2 (Flag if imputed value)         |
| K36_3_IMP_12 | Capital assets income-3 (Flag if imputed value)         |
| K47A_IMP_12  | Own earned income-1 (Flag if imputed value)             |
| K48A_IMP_12  | Own earned income-2 (Flag if imputed value)             |
| K50A_IMP_12  | Own earned income-3 (Flag if imputed value)             |
| K51A_IMP_12  | Own earned income-4 (Flag if imputed value)             |
| K53A_IMP_12  | Spouse's earned income-1 (Flag if imputed value)        |
| K53A_IMP_12  | Spouse's earned income-1 (Flag if imputed value)        |
| K53A_IMP_12  | Spouse's earned income-1 (Flag if imputed value)        |
| K54A_IMP_12  | Spouse's earned income-2 (Flag if imputed value)        |
| K54A_IMP_12  | Spouse's earned income-2 (Flag if imputed value)        |
| K54A_IMP_12  | Spouse's earned income-2 (Flag if imputed value)        |
| K56A_IMP_12  | Spouse's earned income-3 (Flag if imputed value)        |
| K56A_IMP_12  | Spouse's earned income-3 (Flag if imputed value)        |
| K56A_IMP_12  | Spouse's earned income-3 (Flag if imputed value)        |
| K57A_IMP_12  | Spouse's earned income-4 (Flag if imputed value)        |
| K57A_IMP_12  | Spouse's earned income-4 (Flag if imputed value)        |
| K57A_IMP_12  | Spouse's earned income-4 (Flag if imputed value)        |
| K61_1_IMP_12 | Own pension income -retirement (Flag if imputed value)  |
| K61_2_IMP_12 | Own pension income -widow (Flag if imputed value)       |
| K61_3_IMP_12 | Own pension income -disability (Flag if imputed value)  |
| K61_4_IMP_12 | Own other pension income (Flag if imputed value)        |
| K67_1_IMP_12 | Spouse's pension income - retirement (Flag if imputed v |
| K67_2_IMP_12 | Spouse's pension income - widow (Flag if imputed value) |
| K67_3_IMP_12 | Spouse's pension income - disability (Flag if imputed v |
| K67_4_IMP_12 | Spouse's other pension income (Flag if imputed value)   |
| K80_1_IMP_12 | Own transfer income from institutions (Flag if imputed  |
| K80_2_IMP_12 | Own transfer income from individuals (Flag if imputed v |
| K80_3_IMP_12 | Own transfer income from properties (Flag if imputed va |
| K83_1_IMP_12 | Spouse's transfer income from institutions (Flag if imp |
| K83_2_IMP_12 | Spouse's transfer income from individuals (Flag if impu |
| K83_3_IMP_12 | Spouse's transfer income from properties (Flag if imput |

## Wave 4:

|                |  |
|----------------|--|
| IMAMK11_1_15   | Business income-1 (imputed)                          |
| IMAMK11_2_15   | Business income-2 (imputed)                          |
| IMAMK13_1_15   | Business expenditures-1 (imputed)                    |
| IMAMK13_2_15   | Business expenditures-2 (imputed)                    |
| IMAMK27_1_15   | Property rent income-1 (imputed)                     |
| IMAMK27_2_15   | Property rent income-2 (imputed)                     |
| IMAMK29_1_15   | Property expenditures-1 (imputed)                    |
| IMAMK29_2_15   | Property expenditures-2 (imputed)                    |
| IMAMK36_1_15   | Capital assets income-1 (imputed)                    |
| IMAMK36_2_15   | Capital assets income-2 (imputed)                    |
| IMAMK36_3_15   | Capital assets income-3 (imputed)                    |
| IMAMK47A_15    | Own earned income-1 (imputed)                        |
| IMAMK48A_15    | Own earned income-2 (imputed)                        |
| IMAMK50A_15    | Own earned income-3 (imputed)                        |
| IMAMK51A_15    | Own earned income-4 (imputed)                        |
| IMAMK53A_15    | Spouse's earned income-1 (imputed)                   |
| IMAMK54A_15    | Spouse's earned income-2 (imputed)                   |
| IMAMK56A_15    | Spouse's earned income-3 (imputed)                   |
| IMAMK57A_15    | Spouse's earned income-4 (imputed)                   |
| IMAMK61_1_1_15 | Own pension income -retirement 1(imputed)            |
| IMAMK61_1_2_15 | Own pension income -retirement 2(imputed)            |
| IMAMK61_1_3_15 | Own pension income -retirement 3(imputed)            |
| IMAMK61_2_1_15 | Own pension income -widow 1(imputed)                 |
| IMAMK61_2_2_15 | Own pension income -widow 2(imputed)                 |
| IMAMK61_2_3_15 | Own pension income -widow 3(imputed)                 |
| IMAMK61_3_1_15 | Own pension income -disability 1(imputed)            |
| IMAMK61_3_2_15 | Own pension income -disability 2(imputed)            |
| IMAMK61_3_3_15 | Own pension income -disability 3(imputed)            |
| IMAMK61_4_1_15 | Own other pension income 1(imputed)                  |
| IMAMK61_4_2_15 | Own other pension income 2(imputed)                  |
| IMAMK61_4_3_15 | Own other pension income 3(imputed)                  |
| IMAMK67_1_1_15 | Spouse's pension income - retirement 1(imputed)      |
| IMAMK67_1_2_15 | Spouse's pension income - retirement 2(imputed)      |
| IMAMK67_1_3_15 | Spouse's pension income - retirement 3(imputed)      |
| IMAMK67_2_1_15 | Spouse's pension income - widow 1(imputed)           |
| IMAMK67_2_2_15 | Spouse's pension income - widow 2(imputed)           |
| IMAMK67_2_3_15 | Spouse's pension income - widow 3(imputed)           |
| IMAMK67_3_1_15 | Spouse's pension income - disability 1(imputed)      |
| IMAMK67_3_2_15 | Spouse's pension income - disability 2(imputed)      |
| IMAMK67_3_3_15 | Spouse's pension income - disability 3(imputed)      |
| IMAMK67_4_1_15 | Spouse's other pension income 1(imputed)             |
| IMAMK67_4_2_15 | Spouse's other pension income 2(imputed)             |
| IMAMK67_4_3_15 | Spouse's other pension income 3(imputed)             |
| IMAMK80_1_15   | Own transfer income from institutions (imputed)      |
| IMAMK80_2_15   | Own transfer income from individuals (imputed)       |
| IMAMK80_3_15   | Own transfer income from properties (imputed)        |
| IMAMK83_1_15   | Spouse's transfer income from institutions (imputed) |
| IMAMK83_2_15   | Spouse's transfer income from individuals (imputed)  |
| IMAMK83_3_15   | Spouse's transfer income from properties (imputed)   |
| K11_1_IMP_15   | Business income-1 (Flag if imputed value)            |
| K11_2_IMP_15   | Business income-2 (Flag if imputed value)            |
| K13_1_IMP_15   | Business expenditures-1 (Flag if imputed value)      |
| K13_2_IMP_15   | Business expenditures-2 (Flag if imputed value)      |
| K27_1_IMP_15   | Property rent income-1 (Flag if imputed value)       |
| K27_2_IMP_15   | Property rent income-2 (Flag if imputed value)       |
| K29_1_IMP_15   | Property expenditures-1 (Flag if imputed value)      |
| K29_2_IMP_15   | Property expenditures-2 (Flag if imputed value)      |
| K36_1_IMP_15   | Capital assets income-1 (Flag if imputed value)      |
| K36_2_IMP_15   | Capital assets income-2 (Flag if imputed value)      |
| K36_3_IMP_15   | Capital assets income-3 (Flag if imputed value)      |
| K47A_IMP_15    | Own earned income-1 (Flag if imputed value)          |
| K48A_IMP_15    | Own earned income-2 (Flag if imputed value)          |
| K50A_IMP_15    | Own earned income-3 (Flag if imputed value)          |

K51A\_IMP\_15 Own earned income-4 (Flag if imputed value)  
 K53A\_IMP\_15 Spouse's earned income-1 (Flag if imputed value)  
 K53A\_IMP\_15 Spouse's earned income-1 (Flag if imputed value)  
 K53A\_IMP\_15 Spouse's earned income-1 (Flag if imputed value)  
 K54A\_IMP\_15 Spouse's earned income-2 (Flag if imputed value)  
 K54A\_IMP\_15 Spouse's earned income-2 (Flag if imputed value)  
 K54A\_IMP\_15 Spouse's earned income-2 (Flag if imputed value)  
 K56A\_IMP\_15 Spouse's earned income-3 (Flag if imputed value)  
 K56A\_IMP\_15 Spouse's earned income-3 (Flag if imputed value)  
 K56A\_IMP\_15 Spouse's earned income-3 (Flag if imputed value)  
 K57A\_IMP\_15 Spouse's earned income-4 (Flag if imputed value)  
 K57A\_IMP\_15 Spouse's earned income-4 (Flag if imputed value)  
 K57A\_IMP\_15 Spouse's earned income-4 (Flag if imputed value)  
 K61\_1\_1\_IMP\_15 Own pension income -retirement 1(Flag if imputed value)  
 K61\_1\_2\_IMP\_15 Own pension income -retirement 2(Flag if imputed value)  
 K61\_1\_3\_IMP\_15 Own pension income -retirement 3(Flag if imputed value)  
 K61\_2\_1\_IMP\_15 Own pension income -widow 1(Flag if imputed value)  
 K61\_2\_2\_IMP\_15 Own pension income -widow 2(Flag if imputed value)  
 K61\_2\_3\_IMP\_15 Own pension income -widow 3(Flag if imputed value)  
 K61\_3\_1\_IMP\_15 Own pension income -disability 1(Flag if imputed value)  
 K61\_3\_2\_IMP\_15 Own pension income -disability 2(Flag if imputed value)  
 K61\_3\_3\_IMP\_15 Own pension income -disability 3(Flag if imputed value)  
 K61\_4\_1\_IMP\_15 Own other pension income 1(Flag if imputed value)  
 K61\_4\_2\_IMP\_15 Own other pension income 2(Flag if imputed value)  
 K61\_4\_3\_IMP\_15 Own other pension income 3(Flag if imputed value)  
 K67\_1\_1\_IMP\_15 Spouse's pension income - retirement 1(Flag if imputed  
 K67\_1\_2\_IMP\_15 Spouse's pension income - retirement 2(Flag if imputed  
 K67\_1\_3\_IMP\_15 Spouse's pension income - retirement 3(Flag if imputed  
 K67\_2\_1\_IMP\_15 Spouse's pension income - widow 1(Flag if imputed value  
 K67\_2\_2\_IMP\_15 Spouse's pension income - widow 2(Flag if imputed value  
 K67\_2\_3\_IMP\_15 Spouse's pension income - widow 3(Flag if imputed value  
 K67\_3\_1\_IMP\_15 Spouse's pension income - disability 1(Flag if imputed  
 K67\_3\_2\_IMP\_15 Spouse's pension income - disability 2(Flag if imputed  
 K67\_3\_3\_IMP\_15 Spouse's pension income - disability 3(Flag if imputed  
 K67\_4\_1\_IMP\_15 Spouse's other pension income 1(Flag if imputed value)  
 K67\_4\_2\_IMP\_15 Spouse's other pension income 2(Flag if imputed value)  
 K67\_4\_3\_IMP\_15 Spouse's other pension income 3(Flag if imputed value)  
 K80\_1\_IMP\_15 Own transfer income from institutions (Flag if imputed  
 K80\_2\_IMP\_15 Own transfer income from individuals (Flag if imputed v  
 K80\_3\_IMP\_15 Own transfer income from properties (Flag if imputed va  
 K83\_1\_IMP\_15 Spouse's transfer income from institutions (Flag if imp  
 K83\_2\_IMP\_15 Spouse's transfer income from individuals (Flag if impu  
 K83\_3\_IMP\_15 Spouse's transfer income from properties (Flag if imput

## Wave 5:

IMAMK11\_1\_18 Business income-1 (imputed)  
 IMAMK11\_2\_18 Business income-2 (imputed)  
 IMAMK13\_1\_18 Business expenditures-1 (imputed)  
 IMAMK13\_2\_18 Business expenditures-2 (imputed)  
 IMAMK27\_1\_18 Property rent income (imputed)  
 IMAMK27\_2\_18  
 IMAMK29\_1\_18 Property expeditures (imputed)  
 IMAMK29\_2\_18  
 IMAMK36\_1\_18 Capital assets income-1 (imputed)  
 IMAMK36\_2\_18 Capital assets income-2 (imputed)  
 IMAMK36\_3\_18 Capital assets income-3 (imputed)  
 IMAMK47A\_18 Own earned income-1 (imputed)  
 IMAMK48A\_18 Own earned income-2 (imputed)  
 IMAMK50A\_18 Own earned income-3 (imputed)  
 IMAMK51A\_18 Own earned income-4 (imputed)  
 IMAMK53A\_18 Spouse's earned income-1 (imputed)  
 IMAMK54A\_18 Spouse's earned income-2 (imputed)  
 IMAMK56A\_18 Spouse's earned income-3 (imputed)  
 IMAMK57A\_18 Spouse's earned income-4 (imputed)  
 IMAMK61\_1\_1\_18 Own pension income -retirement 1 (imputed)

|                |  |
|----------------|--|
| IMAMK61_1_2_18 | Own pension income -retirement 2 (imputed)               |
| IMAMK61_2_1_18 | Own pension income -widow 1 (imputed)                    |
| IMAMK61_2_2_18 | Own pension income -widow 2 (imputed)                    |
| IMAMK61_3_1_18 | Own pension income -disability 1 (imputed)               |
| IMAMK61_3_2_18 | Own pension income -disability 2 (imputed)               |
| IMAMK61_4_1_18 | Own other pension income 1 (imputed)                     |
| IMAMK61_4_2_18 | Own other pension income 2 (imputed)                     |
| IMAMK67_1_1_18 | Spouse's pension income - retirement 1 (imputed)         |
| IMAMK67_1_2_18 | Spouse's pension income - retirement 2 (imputed)         |
| IMAMK67_2_1_18 | Spouse's pension income - widow 1 (imputed)              |
| IMAMK67_2_2_18 | Spouse's pension income - widow 2 (imputed)              |
| IMAMK67_3_1_18 | Spouse's pension income - disability 1 (imputed)         |
| IMAMK67_3_2_18 | Spouse's pension income - disability 2 (imputed)         |
| IMAMK67_4_1_18 | Spouse's other pension income 1 (imputed)                |
| IMAMK67_4_2_18 | Spouse's other pension income 2 (imputed)                |
| IMAMK80_1_18   |  |
| IMAMK80_2_18   |  |
| IMAMK80_3_18   | Own transfer income from properties (imputed)            |
| IMAMK83_1_18   |  |
| IMAMK83_2_18   | Spouse's transfer income from properties (imputed)       |
| IMAMK83_3_18   |  |
| K11_1_IMP_18   | Business income-1 (Flag if imputed value)                |
| K11_2_IMP_18   | Business income-2 (Flag if imputed value)                |
| K13_1_IMP_18   | Business expenditures-1 (Flag if imputed value)          |
| K13_2_IMP_18   | Business expenditures-2 (Flag if imputed value)          |
| K27_1_IMP_18   | Property rent income (Flag if imputed value)             |
| K27_2_IMP_18   |  |
| K29_1_IMP_18   | Property expenditures (Flag if imputed value)            |
| K29_2_IMP_18   |  |
| K36_1_IMP_18   | Capital assets income-1 (Flag if imputed value)          |
| K36_2_IMP_18   | Capital assets income-2 (Flag if imputed value)          |
| K36_3_IMP_18   | Capital assets income-3 (Flag if imputed value)          |
| K47A_IMP_18    | Own earned income-1 (Flag if imputed value)              |
| K48A_IMP_18    | Own earned income-2 (Flag if imputed value)              |
| K50A_IMP_18    | Own earned income-3 (Flag if imputed value)              |
| K51A_IMP_18    | Own earned income-4 (Flag if imputed value)              |
| K53A_IMP_18    | Spouse's earned income-1 (Flag if imputed value)         |
| K53A_IMP_18    | Spouse's earned income-1 (Flag if imputed value)         |
| K53A_IMP_18    | Spouse's earned income-1 (Flag if imputed value)         |
| K54A_IMP_18    | Spouse's earned income-2 (Flag if imputed value)         |
| K54A_IMP_18    | Spouse's earned income-2 (Flag if imputed value)         |
| K54A_IMP_18    | Spouse's earned income-2 (Flag if imputed value)         |
| K56A_IMP_18    | Spouse's earned income-3 (Flag if imputed value)         |
| K56A_IMP_18    | Spouse's earned income-3 (Flag if imputed value)         |
| K56A_IMP_18    | Spouse's earned income-3 (Flag if imputed value)         |
| K57A_IMP_18    | Spouse's earned income-4 (Flag if imputed value)         |
| K57A_IMP_18    | Spouse's earned income-4 (Flag if imputed value)         |
| K57A_IMP_18    | Spouse's earned income-4 (Flag if imputed value)         |
| K61_1_1_IMP_18 | Own pension income -retirement 1 (Flag if imputed value) |
| K61_1_2_IMP_18 | Own pension income -retirement 2 (Flag if imputed value) |
| K61_2_1_IMP_18 | Own pension income -widow 1 (Flag if imputed value)      |
| K61_2_2_IMP_18 | Own pension income -widow 2 (Flag if imputed value)      |
| K61_3_1_IMP_18 | Own pension income -disability 1 (Flag if imputed value) |
| K61_3_2_IMP_18 | Own pension income -disability 2 (Flag if imputed value) |
| K61_4_1_IMP_18 | Own other pension income 1 (Flag if imputed value)       |
| K61_4_2_IMP_18 | Own other pension income 2 (Flag if imputed value)       |
| K67_1_1_IMP_18 | Spouse's pension income - retirement 1 (Flag if imputed) |
| K67_1_2_IMP_18 | Spouse's pension income - retirement 2 (Flag if imputed) |
| K67_2_1_IMP_18 | Spouse's pension income - widow 1 (Flag if imputed valu  |
| K67_2_2_IMP_18 | Spouse's pension income - widow 2 (Flag if imputed valu  |
| K67_3_1_IMP_18 | Spouse's pension income - disability 1 (Flag if imputed) |
| K67_3_2_IMP_18 | Spouse's pension income - disability 2 (Flag if imputed) |
| K67_4_1_IMP_18 | Spouse's other pension income 1 (Flag if imputed value)  |
| K67_4_2_IMP_18 | Spouse's other pension income 2 (Flag if imputed value)  |



|              |   |
|--------------|---|
| K80_1_IMP_18 |   |
| K80_2_IMP_18 |   |
| K80_3_IMP_18 | Own transfer income from properties (Flag if imputed va |
| K83_1_IMP_18 |   |
| K83_2_IMP_18 | Spouse's transfer income from properties (Flag if imput |
| K83_3_IMP_18 |   |

Total Household Consumption (full household)

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 1    | HH1CTOT1M  | hh1ctot1m:w1 Hhold monthly total consumption       | Cont  |
| 2    | HH2CTOT1M  | hh2ctot1m:w2 Hhold monthly total consumption       | Cont  |
| 3    | HH3CTOT1M  | hh3ctot1m:w3 Hhold monthly total consumption       | Cont  |
| 4    | HH4CTOT1M  | hh4ctot1m:w4 Hhold monthly total consumption       | Cont  |
| 5    | HH5CTOT1M  | hh5ctot1m:w5 Hhold monthly total consumption       | Cont  |
| 1    | HH1CFTOT1M | hh1cftot1m:w1Flag: Hhold monthly total consumption | Categ |
| 2    | HH2CFTOT1M | hh2cftot1m:w2Flag: Hhold monthly total consumption | Categ |
| 3    | HH3CFTOT1M | hh3cftot1m:w3Flag: Hhold monthly total consumption | Categ |
| 4    | HH4CFTOT1M | hh4cftot1m:w4Flag: Hhold monthly total consumption | Categ |
| 5    | HH5CFTOT1M | hh5cftot1m:w5Flag: Hhold monthly total consumption | Categ |

Descriptive Statistics

| Variable   | N     | Mean    | Std Dev  | Minimum | Maximum    |
|------------|-------|---------|----------|---------|------------|
| HH1CTOT1M  | 15636 | 3860.09 | 27795.23 | 1.00    | 2222100.00 |
| HH2CTOT1M  | 14032 | 3719.21 | 19469.46 | 0.00    | 1500212.00 |
| HH3CTOT1M  | 15723 | 3742.95 | 4989.94  | 1.00    | 250000.00  |
| HH4CTOT1M  | 14745 | 5319.53 | 60484.67 | 1.00    | 5000000.00 |
| HH5CTOT1M  | 17094 | 6571.82 | 40053.95 | 15.54   | 5000000.00 |
| HH1CFTOT1M | 15186 | 0.08    | 0.28     | -1.00   | 1.00       |
| HH2CFTOT1M | 13704 | 0.09    | 0.29     | -1.00   | 1.00       |
| HH3CFTOT1M | 15723 | 0.09    | 0.29     | 0.00    | 1.00       |
| HH4CFTOT1M | 14779 | 0.06    | 0.24     | -1.00   | 1.00       |
| HH5CFTOT1M | 17114 | 0.08    | 0.27     | -1.00   | 1.00       |

Categorical Variable Codes

| Value-----                       | HH1CFTOT1M | HH2CFTOT1M | HH3CFTOT1M | HH4CFTOT1M | HH5CFTOT1M |
|----------------------------------|------------|------------|------------|------------|------------|
| -1.No Imput:section not complete | 59         | 31         |            | 34         | 20         |
| 0.Not imputed                    | 13857      | 12470      | 14258      | 13887      | 15732      |
| 1.Imputed                        | 1270       | 1203       | 1465       | 858        | 1362       |

How Constructed

HHwCTOT1M captures the full household's total consumption at the monthly-level. HHwCTOT1M includes all household expenditures but does not include the value of goods produced for home consumption.

The financial informant is asked "In total, about how much do you spend in a month for household expenditures? Exclude the value of what you produce for home consumption." HHwCTOT1M is derived as this reported monthly value of the full household's total consumption. HHwCTOT1M is derived at the household level but is assumed to include expenditures for all members of the household, meaning that its value represents the full household not just the respondent and or/spouse. Special missing .m is used if HHwCTOT1M was not imputed because the respondent did not complete the section. HHwCTOT1M is set to blank missing (.) if the respondent did not participate in the current wave.

HHwCFTOT1M is a flag variable indicating whether or not HHwCTOT1M was imputed. A code of 0 indicates that HHwCTOT1M was not imputed. A code of 1 indicates that HHwCTOT1M was imputed. A code of -1 indicates that at HHwCTOT1M was not imputed because the respondent did not complete the section and this value has been left missing.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

The HRS does not have an equivalent variable.

MHAS Variables Used

|            |   |
|------------|---|
| Wave 1:    |   |
| IMAM85     | total household consumption (imputed)                   |
| K85IMP     | if imputed value  |
| Wave 2:    |   |
| IMAMK88    | total household consumption (imputed)                   |
| K88IMP     | if imputed value  |
| Wave 3:    |   |
| IMAMK88_12 | Total cost household consumption (imputed)              |
| K88_IMP_12 | Total cost household consumption (Flag if imputed value |
| Wave 4:    |   |
| IMAMK88_15 | Total cost household consumption (imputed)              |
| K88_IMP_15 | Total cost household consumption (Flag if imputed value |
| Wave 5:    |   |
| IMAMK88_18 | Total cost household consumption (imputed)              |
| K88_IMP_18 | Total cost household consumption (Flag if imputed value |

**Section G: Family Structure**

Number of People Living in Household

| Wave | Variable | Label                              | Type |
|------|----------|------------------------------------|------|
| 1    | H1HHRES  | h1hhres: w1 Number of people in HH | Cont |
| 2    | H2HHRES  | h2hhres: w2 Number of people in HH | Cont |
| 3    | H3HHRES  | h3hhres: w3 Number of people in HH | Cont |
| 4    | H4HHRES  | h4hhres: w4 Number of people in HH | Cont |
| 5    | H5HHRES  | h5hhres: w5 Number of people in HH | Cont |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| H1HHRES  | 15186 | 4.11 | 2.29    | 1.00    | 19.00   |
| H2HHRES  | 13704 | 3.09 | 2.24    | 1.00    | 19.00   |
| H3HHRES  | 15723 | 3.00 | 2.20    | 1.00    | 19.00   |
| H4HHRES  | 14779 | 2.45 | 1.74    | 1.00    | 19.00   |
| H5HHRES  | 17114 | 2.40 | 1.65    | 1.00    | 17.00   |

How Constructed

HwHHRES counts the number of people living in the household, including the respondents. The number of residents living in a household is obtained using the Household Roster Section (TRH) which includes all members reported to live in the household, as identified by the household respondent, whether or not they are eligible for the MHAS. In Wave 1, the number of household members was derived by counting the number of people reported in the Household Roster. However, starting in Wave 2, the number was obtained from the variable included in the Roster that indicates the number of people living in the household. In the case that the respondent and the spouse (if any) lived alone the number was obtained from the HwHHRESP. HwHHRES is set to plain missing (.) if the respondent did not participate in the current wave.

Cross Wave Differences in MHAS

In Wave 1, the Household Roster included the respondent and spouse. Thus, the number of household residents was derived from the count of people reported in the Roster. Starting in Wave 2, the Household Roster did not include the respondent and spouse and the list included only other residents, if any. The new questionnaire included a variable to report the number of household residents. These variables were used to obtain HwHHRES. Also, starting in Wave 2, if the respondent and the spouse (if any) lived alone, the Household Roster was not completed and the number of household members was completed using the HwHHRESP variable available in the Demographics section.

Starting in Wave 3, the MHAS has separate modules for follow-up and new sample interviews. Thus, each household variable accounts for both the follow-up and the new samples.

Differences with the RAND HRS/Harmonized HRS

No differences known.

MHAS Variables Used

|           |   |
|-----------|---|
| Wave 1:   |   |
| TRH2      | registration number of household member                 |
| Wave 2:   |   |
| TRH2_1    | total number of people listed                           |
| Wave 3:   |   |
| NTRH2B_12 | Interviewer:Report the total number of listed individua |
| TRH2B_12  | Interviewer:Report the total number of listed individua |
| Wave 4:   |   |
| NTRH2B_15 | Interviewer:Report the total number of listed individua |
| TRH2B_15  | Interviewer:Report the total number of listed individua |
| Wave 5:   |   |

|           |   |
|-----------|---|
| NTRH2B_18 | (New person) Interviewer:Report total number of individ |
| TRH2B_18  | (Follow-up) Interviewer:Report total number of individu |

|                                  |
|----------------------------------|
| <b>Number of Living Children</b> |
|----------------------------------|

| Wave | Variable | Label                                     | Type |
|------|----------|---|------|
| 1    | H1CHILD  | h1child: w1 Number of living children R/P | Cont |
| 2    | H2CHILD  | h2child: w2 Number of living children R/P | Cont |
| 3    | H3CHILD  | h3child: w3 Number of living children R/P | Cont |
| 4    | H4CHILD  | h4child: w4 Number of living children R/P | Cont |
| 5    | H5CHILD  | h5child: w5 Number of living children R/P | Cont |
| 1    | H1SON    | h1son: w1 Number of living sons R/P       | Cont |
| 2    | H2SON    | h2son: w2 Number of living sons R/P       | Cont |
| 3    | H3SON    | h3son: w3 Number of living sons R/P       | Cont |
| 4    | H4SON    | h4son: w4 Number of living sons R/P       | Cont |
| 5    | H5SON    | h5son: w5 Number of living sons R/P       | Cont |
| 1    | H1DAU    | h1dau: w1 Number of living daughters R/P  | Cont |
| 2    | H2DAU    | h2dau: w2 Number of living daughters R/P  | Cont |
| 3    | H3DAU    | h3dau: w3 Number of living daughters R/P  | Cont |
| 4    | H4DAU    | h4dau: w4 Number of living daughters R/P  | Cont |
| 5    | H5DAU    | h5dau: w5 Number of living daughters R/P  | Cont |

### Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| H1CHILD  | 15186 | 5.27 | 3.12    | 0.00    | 21.00   |
| H2CHILD  | 13704 | 5.45 | 3.15    | 0.00    | 21.00   |
| H3CHILD  | 15723 | 4.78 | 2.93    | 0.00    | 21.00   |
| H4CHILD  | 14779 | 4.79 | 2.89    | 0.00    | 21.00   |
| H5CHILD  | 17114 | 4.29 | 2.71    | 0.00    | 22.00   |
| H1SON    | 15186 | 2.65 | 1.93    | 0.00    | 13.00   |
| H2SON    | 13704 | 2.75 | 1.96    | 0.00    | 13.00   |
| H3SON    | 15723 | 2.39 | 1.82    | 0.00    | 13.00   |
| H4SON    | 14779 | 2.39 | 1.80    | 0.00    | 13.00   |
| H5SON    | 17114 | 2.13 | 1.68    | 0.00    | 14.00   |
| H1DAU    | 15186 | 2.62 | 1.94    | 0.00    | 13.00   |
| H2DAU    | 13704 | 2.70 | 1.96    | 0.00    | 13.00   |
| H3DAU    | 15723 | 2.39 | 1.84    | 0.00    | 12.00   |
| H4DAU    | 14779 | 2.40 | 1.84    | 0.00    | 13.00   |
| H5DAU    | 17114 | 2.15 | 1.73    | 0.00    | 12.00   |

### How Constructed

HwSON is the number of living sons of the respondent and their spouse or partner. HwDAU is the number of living daughters of the respondent and their spouse or partner. HwCHILD provides the number of living children of the respondent and their spouse or partner. The number of children is obtained by counting anyone in the Household Roster (TRH) who is a child, step child, adopted child, or foster child, using the relationship variable included in this module. In addition, the variable included the count of non-resident children reported in the Non-Resident Children (MHAS Section B) module. All of the respondent's and spouse's living children are counted in one total. The number of sons and daughters is obtained following the same process in addition to the reported gender for each child. HwSON, HwDAU, and HwCHILD are set to plain missing (.) if the respondent did not participate in the current wave.

### Cross Wave Differences in MHAS

Starting in Wave 3, the MHAS has separate modules for follow-up and new sample interviews. Thus, each household variable accounts for both the follow-up and the new samples.

## Differences with the RAND HRS/Harmonized HRS

Unlike the HRS, the MHAS ask respondents to identify foster children in the Household Roster, and they are included in the count of living children.

## MHAS Variables Used

### Wave 1:

|      |   |
|------|---|
| B3   | registration number of nonresident child                |
| B5   | sex of nonresident child                                |
| B6   | relationship of nonresident child to sampled person     |
| B7   | relationship of nonresident child to spouse of sampled  |
| TRH2 | registration number of household member                 |
| TRH5 | sex of household member                                 |
| TRH6 | relationship of household member to selected person     |
| TRH7 | relationship of household member to spouse of sel. pers |

### Wave 2:

|       |                          |
|-------|--------------------------|
| B3    | registration number      |
| B5    | sex                      |
| B7    | residency status         |
| TRH10 | relationship with spouse |
| TRH3  | registration number      |
| TRH8  | gender                   |
| TRH9  | relationship             |

### Wave 3:

|          |  |
|----------|--|
| B3_12    | Follow-up respondent's registration number               |
| B5_12    | Sex of non-resident child                                |
| B7_12    | Residency status of non-resident child                   |
| NB3_12   | New respondent's registration number                     |
| NB5_12   | Sex of non-resident child                                |
| NB6_12   | Non-resident child's relationship to you                 |
| NB7_12   | Non-resident child's relationship to respondent's spouse |
| NTRH3_12 | Resident's registration number                           |
| NTRH5_12 | Sex of resident  |
| NTRH6_12 | Resident's relationship to respondent                    |
| NTRH7_12 | Resident's relationship with respondent's spouse         |
| TRH10_12 | Resident's relationship to respondent's spouse           |
| TRH3_12  | Household Resident registration number                   |
| TRH8_12  | Resident's Sex   |
| TRH9_12  | Resident's relationship to respondent                    |

### Wave 4:

|          |   |
|----------|---|
| B3_15    | Non-resident Child: Registration number                 |
| B5_15    | Non-resident Child: Sex                                 |
| B7_15    | Non-resident Child: Residency status of non-resident ch |
| NB3_15   | Non-resident Child: Registration number                 |
| NB5_15   | Non-resident Child: Sex                                 |
| NB6_15   | Non-resident Child: Relationship to Respondent          |
| NB7_15   | Non-resident Child: Relationship to Respondent's spouse |
| NTRH3_15 | Resident's registration number                          |
| NTRH5_15 | Sex of resident   |
| NTRH6_15 | Resident's relationship to respondent                   |
| NTRH7_15 | Resident's relationship with respondent's spouse        |
| TRH10_15 | Resident's relationship to respondent's spouse          |
| TRH3_15  | Household resident registration number                  |
| TRH8_15  | Resident's sex  |
| TRH9_15  | Resident's relationship to respondent                   |

### Wave 5:

|        |   |
|--------|---|
| B3_18  | Non-resident Child: Registration number                 |
| B5_18  | Non-resident Child: Sex                                 |
| B7_18  | Non-resident Child: Residency status of non-resident ch |
| NB3_18 | Non-resident Child: Registration number                 |
| NB5_18 | Non-resident Child: Sex (Male=1)                        |
| NB6_18 | Non-resident Child: Relationship to Respondent          |
| NB7_18 | Non-resident Child: Relationship to Respondent's spouse |



|          |  |
|----------|--|
| NTRH3_18 | Household resident registration number         |
| NTRH5_18 | Resident's sex (Male=1)                        |
| NTRH6_18 | Resident's relationship to respondent          |
| NTRH7_18 | Resident's relationship to respondent's spouse |
| TRH10_18 | Resident's relationship to respondent's spouse |
| TRH3_18  | Household resident registration number         |
| TRH8_18  | Resident's sex (Male=1)                        |
| TRH9_18  | Resident's relationship to respondent          |

|                                    |
|------------------------------------|
| <b>Number of Deceased Children</b> |
|------------------------------------|

| Wave | Variable | Label  | Type |
|------|----------|--|------|
| 1    | H1DCHILD | h1dchild: w1 Number of deceased children R/P | Cont |
| 2    | H2DCHILD | h2dchild: w2 Number of deceased children R/P | Cont |
| 3    | H3DCHILD | h3dchild: w3 Number of deceased children R/P | Cont |
| 4    | H4DCHILD | h4dchild: w4 Number of deceased children R/P | Cont |
| 5    | H5DCHILD | h5dchild: w5 Number of deceased children R/P | Cont |

### Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| H1DCHILD | 15186 | 0.75 | 1.31    | 0.00    | 11.00   |
| H2DCHILD | 13704 | 0.76 | 1.31    | 0.00    | 11.00   |
| H3DCHILD | 15723 | 0.61 | 1.19    | 0.00    | 12.00   |
| H4DCHILD | 14779 | 0.61 | 1.18    | 0.00    | 15.00   |
| H5DCHILD | 17114 | 0.49 | 1.07    | 0.00    | 15.00   |

### How Constructed

HwDCHILD indicates the number of deceased children of the respondent and their spouse or partner.

In Wave 1, the number of deceased children is obtained by counting all the deceased children listed in the 'Deceased Children' section that is part of the Non-Resident Children (MHAS Section B) module.

In Wave 2, HwDCHILD was obtained by counting the additional deceased children reported in the Household Roster (TRH) and the Non-Resident Children (MHAS Section B) sections. A residential status variable included in the TRH was used to identify the deceased children listed in the Household Roster in the previous wave. In addition, a residential status variable included in Section B was used to identify the deceased children listed in the Non-Resident Children roster. The counts of resident and non-resident children were used to update the number of deceased children in Wave 2, adding the total count to the number reported in the previous wave.

Starting in Wave 3, the MHAS has separate modules for follow-up and new sample interviews. Thus, HwDCHILD was constructed in different ways for the follow-up and the new samples. Similar to Wave 1, HwDCHILD was obtained for the new sample by counting the number of all the deceased children listed in the 'Deceased Children' section that is part of the Non-Resident Children (MHAS Section B) module. Similar to Wave 2, HwDCHILD was obtained for the follow-up sample by updating the number of deceased children.

HwDCHILD is set to plain missing (.) if the respondent did not participate in the current wave.

### Cross Wave Differences in MHAS

In Wave 2, the 'Deceased Children' section was not asked since the study only included the follow-up sample (as well as new spouses) in this wave. However, both the Household Roster (TRH) and the Non-Resident Children (MHAS Section B) sections included a variable to establish the new status in the wave and update the rosters. The residential status variable in the TRH included the following options: Still lives here or temporarily absent, Permanently absent, Deceased, Listed by mistake, and New resident. The residential status in Section B included the following options: Still lives elsewhere, Omitted non-resident child, Deceased, Resides in residence of respondent, Listed by mistake. These statuses were used to establish the deceased children not accounted for in the previous wave.

Starting in Wave 3, the MHAS has separate modules for follow-up and new sample interviews. Thus, each household variable accounts for both the follow-up and the new sample. In a similar way to Wave 2, the count of deceased children for follow-up households was updated using the residential status variables.

## Differences with the RAND HRS/Harmonized HRS

Unlike the HRS, the MHAS ask respondents to identify foster children in the Household Roster, and they are included in the count of living children.

## MHAS Variables Used

|          |   |
|----------|---|
| Wave 1:  |   |
| B25      | registration number of deceased children                |
| Wave 2:  |   |
| B1       | code of respondent                                      |
| TRH10    | relationship with spouse                                |
| TRH3     | registration number                                     |
| TRH5     | current situation                                       |
| TRH9     | relationship  |
| Wave 3:  |   |
| B21B_12  | Deceased CHILd: registration number                     |
| B3_12    | Follow-up respondent's registration number              |
| B7_12    | Residency status of non-resident child                  |
| NB25_12  | New respondent's registration number                    |
| TRH10_12 | Resident's relationship to respondent's spouse          |
| TRH3_12  | Household Resident registration number                  |
| TRH5_12  | Former Resident's current residential status            |
| TRH9_12  | Resident's relationship to respondent                   |
| Wave 4:  |   |
| B21B_15  | Deceased Child: Registration number                     |
| B3_15    | Non-resident Child: Registration number                 |
| B7_15    | Non-resident Child: Residency status of non-resident ch |
| NB25_15  | Deceased Child: Registration number                     |
| TRH10_15 | Resident's relationship to respondent's spouse          |
| TRH3_15  | Household resident registration number                  |
| TRH5_15  | Former resident's current residential status            |
| TRH9_15  | Resident's relationship to respondent                   |
| Wave 5:  |   |
| B21B_18  |   |
| B3_18    | Non-resident Child: Registration number                 |
| B7_18    | Non-resident Child: Residency status of non-resident ch |
| NB25_18  | Deceased Child: Registration number                     |
| TRH10_18 | Resident's relationship to respondent's spouse          |
| TRH3_18  | Household resident registration number                  |
| TRH5_18  | Former resident's current residential status            |
| TRH9_18  | Resident's relationship to respondent                   |

Number of Children Ever Born

| Wave | Variable | Label                                      | Type |
|------|----------|--|------|
| 1    | RAEVBRN  | raevbrn: R Number of children ever born    | Cont |
| 1    | S1EVBRN  | s1evbrn: w1 S Number of children ever born | Cont |
| 2    | S2EVBRN  | s2evbrn: w2 S Number of children ever born | Cont |
| 3    | S3EVBRN  | s3evbrn: w3 S Number of children ever born | Cont |
| 4    | S4EVBRN  | s4evbrn: w4 S Number of children ever born | Cont |
| 5    | S5EVBRN  | s5evbrn: w5 S Number of children ever born | Cont |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| RAEVBRN  | 26776 | 4.85 | 3.28    | 0.00    | 27.00   |
| S1EVBRN  | 10635 | 5.94 | 3.47    | 0.00    | 23.00   |
| S2EVBRN  | 9835  | 6.01 | 3.48    | 0.00    | 23.00   |
| S3EVBRN  | 10555 | 5.03 | 3.07    | 0.00    | 23.00   |
| S4EVBRN  | 9814  | 4.96 | 2.97    | 0.00    | 22.00   |
| S5EVBRN  | 7461  | 4.94 | 2.93    | 0.00    | 20.00   |

How Constructed

RAEVBRN provides the number of children ever born to the respondent. Number of children ever born does not include stepchildren, adoptions or miscarriages. RAEVBRN is based on responses to the question, "How many children have you had that were born alive?". RAEVBRN is obtained using the number of children reported in Section A (Demographics), for each respondent. The number is not calculated using the number of children reported the Household Roster (TRH) and in the Non-Resident Children (MHAS Section B) modules. When respondents don't know, refuse, or their answer is missing for another reason RAEVBRN is assigned special missing values .d, .r, or .m. respectively. RAEVBRN is set to plain missing (.) for respondents who did not respond to the current wave.

The spouse variable SwEVBRN is taken from the Wave 'w' spouse's RAEVBRN variable. Special missing value .u is used when the respondent does not report being coupled in the current wave. Special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

Cross Wave Differences in MHAS

In Wave 2, the number of children ever born was asked only to new subjects. However, starting in Wave 3, the question was asked to new subjects and for follow-up interviews, and an additional question was included to verify the number of children ever born reported in the previous waves. If the respondent declared that the number was incorrect the question was asked again. Thus, the variable RAEVBRN was updated with the correct number of children reported.

Differences with the RAND HRS/Harmonized HRS

Unlike the HRS, the MHAS explicitly asks respondents to report the number of live births.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| A19     | number of children born alive                           |
| Wave 2: |   |
| AA19    | how many children born alive do you have                |
| Wave 3: |   |
| A7_1_12 | Respondent's stated number of children born alive corre |
| A7_2_12 | Correct number of children born alive                   |

|         |   |
|---------|---|
| AA19_12 | Respondent's number of children born alive              |
| Wave 4: |   |
| A7_1_15 | Respondent's stated number of children born alive - Cor |
| A7_2_15 | Correct number of children born alive                   |
| AA19_15 | Respondent's number of children born alive              |
| Wave 5: |   |
| A7A_18  | Correct number of children born alive                   |
| A7_18   | R's stated number of children born alive - Correct      |
| AA19_18 | R's number of children born alive                       |

|                                |
|--------------------------------|
| <b>Number of Grandchildren</b> |
|--------------------------------|

| Wave | Variable  | Label                                     | Type |
|------|-----------|---|------|
| 1    | H1GRCHILD | h1grchild: w1 Number of grandchildren R/P | Cont |
| 2    | H2GRCHILD | h2grchild: w2 Number of grandchildren R/P | Cont |
| 3    | H3GRCHILD | h3grchild: w3 Number of grandchildren R/P | Cont |
| 4    | H4GRCHILD | h4grchild: w4 Number of grandchildren R/P | Cont |
| 5    | H5GRCHILD | h5grchild: w5 Number of grandchildren R/P | Cont |

### Descriptive Statistics

| Variable  | N     | Mean  | Std Dev | Minimum | Maximum |
|-----------|-------|-------|---------|---------|---------|
| H1GRCHILD | 15186 | 9.37  | 10.39   | 0.00    | 89.00   |
| H2GRCHILD | 13704 | 10.27 | 10.49   | 0.00    | 79.00   |
| H3GRCHILD | 15723 | 8.00  | 8.53    | 0.00    | 50.00   |
| H4GRCHILD | 14779 | 9.12  | 8.79    | 0.00    | 50.00   |
| H5GRCHILD | 17114 | 7.35  | 8.07    | 0.00    | 50.00   |

### How Constructed

HwGRCHILD provides the number of grandchildren of the respondent and their spouse (if any). The variable was obtained by adding the number of grandchildren for each resident child (from the Household Roster-TRH) and non-resident children (from the Non-resident Children-Section B). In both rosters, if the respondent listed children, for each child 12 years or older, the MHAS asks the respondent how many children the child has. HwGRCHILD is set to plain missing (.) if the respondent did not participate in the current wave.

### Cross Wave Differences in MHAS

Starting in Wave 3, the MHAS has separate modules for follow-up and new sample interviews. Thus, each household variable accounts for both the follow-up and the new sample.

### Differences with the RAND HRS/Harmonized HRS

The total number of grandchildren is provided in HwGRCHILD in the Harmonized HRS, while the the number of grandchildren from each child is provided in KwNKID in the RAND HRS Family Data. Unlike the HRS, in MHAS the number of grandchildren is only asked for each child 12 years or older.

### MHAS Variables Used

|           |   |
|-----------|---|
| Wave 1:   |   |
| B16       | number of children of nonresident child                 |
| TRH15     | number of children of household member                  |
| Wave 2:   |   |
| B15       | number of children                                      |
| TRH17     | number of children - resident children                  |
| Wave 3:   |   |
| B15_12    | How many children does non-resident child 12 years or o |
| NB16_12   | How many children does non-resident child have          |
| NTRH15_12 | Number of children resident has                         |
| TRH17_12  | Resident CHILD age 12+: number of children              |
| Wave 4:   |   |
| B15_15    | Non-resident Child 12 years+: Number of children        |
| NB16_15   | Non-resident Child 12 years+: Number of children        |
| NTRH15_15 | Number of children resident has                         |
| TRH17_15  | Resident CHILD 12 years+: Number of children            |
| Wave 5:   |   |
| B15_18    | Non-resident Child 12 years+: Number of children        |
| NB16_18   | Non-resident Child 12 years+: Number of children        |

|           |  |
|-----------|--|
| NTRH15_18 | Resident CHILD 12 years+: Number of children |
| TRH17_18  | Resident CHILD 12 years+: Number of children |

|                                  |
|----------------------------------|
| <b>Number of Living Siblings</b> |
|----------------------------------|

| Wave | Variable | Label                                    | Type |
|------|----------|--|------|
| 1    | R1LIVSIB | r1livsib: w1 R Number of living siblings | Cont |
| 2    | R2LIVSIB | r2livsib: w2 R Number of living siblings | Cont |
| 3    | R3LIVSIB | r3livsib: w3 R Number of living siblings | Cont |
| 4    | R4LIVSIB | r4livsib: w4 R Number of living siblings | Cont |
| 5    | R5LIVSIB | r5livsib: w5 R Number of living siblings | Cont |
| 1    | S1LIVSIB | s1livsib: w1 S Number of living siblings | Cont |
| 2    | S2LIVSIB | s2livsib: w2 S Number of living siblings | Cont |
| 3    | S3LIVSIB | s3livsib: w3 S Number of living siblings | Cont |
| 4    | S4LIVSIB | s4livsib: w4 S Number of living siblings | Cont |
| 5    | S5LIVSIB | s5livsib: w5 S Number of living siblings | Cont |

### Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1LIVSIB | 14826 | 4.71 | 3.07    | 0.00    | 21.00   |
| R2LIVSIB | 13413 | 4.64 | 3.03    | 0.00    | 21.00   |
| R3LIVSIB | 14268 | 5.06 | 3.12    | 0.00    | 24.00   |
| R4LIVSIB | 13474 | 4.91 | 3.05    | 0.00    | 23.00   |
| R5LIVSIB | 15568 | 5.14 | 3.04    | 0.00    | 24.00   |
| S1LIVSIB | 10436 | 5.02 | 3.08    | 0.00    | 21.00   |
| S2LIVSIB | 9399  | 4.96 | 3.05    | 0.00    | 21.00   |
| S3LIVSIB | 9757  | 5.32 | 3.10    | 0.00    | 21.00   |
| S4LIVSIB | 8991  | 5.19 | 3.02    | 0.00    | 23.00   |
| S5LIVSIB | 6812  | 5.13 | 3.02    | 0.00    | 22.00   |

### How Constructed

RwLIVSIB is the number of the respondent's living siblings. In both Wave 1 and Wave 2, all participants are asked, "How many siblings who were born alive do you have?". They are then asked, "Of your siblings who were born alive, how many are living now?" In the case that the respondent reports not having any siblings born alive RwLIVSIB is set to 0. In all other cases, RwLIVSIB records the number of living siblings. In Wave 3, follow-up participants were only asked "Of your siblings who were born alive, how many are living now?" and only if they reported having a sibling in a previous wave or if they didn't know or refused to answer the questions in the previous wave. Starting in Wave 4, all participants (follow-up and new sample) were asked both questions. When respondents don't know, refuse, or their answer is missing for another reason, RwLIVSIB is assigned special missing values .d, .r, or .m, respectively. Also starting in Wave 3, RwLIVSIB is set to special missing .p if the sibling questions were skipped because the interview was by proxy. RwLIVSIB is set to plain missing (.) for respondents who did not respond to the current wave.

SwLIVSIB is the number of the spouse's siblings. They are taken from the spouse's RwLIVSIB. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

### Cross Wave Differences in MHAS

Starting in Wave 3, proxy interviews skipped these questions. Also in Wave 3, the number of siblings ever born was pre-loaded for follow-up interviews. If the subject reported having siblings in the previous waves they were asked how many are living now. If the subject reported no siblings they skipped the number of living sibling's question. Thus, for follow-up interviews, the total number of living siblings was obtained using the number of siblings ever born reported in the previous waves as well as the number of living siblings reported in wave 3. For the new sample, the total number was obtained similar to the previous waves. Starting in Wave 4, all participants (follow-up and new sample) were asked both questions.



Differences with the RAND HRS/Harmonized HRS

In Waves 1, 2H, 3H, 4 and 5 of the HRS, this information is provided by the Family Respondent. In all other HRS Waves, each respondent reports the number of their living siblings.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| F30     | siblings born alive                                     |
| F31     | siblings still alive                                    |
| Wave 2: |   |
| F34     | how many siblings were born alive                       |
| F36     | how many siblings are still alive                       |
| Wave 3: |   |
| F34_12  | Respondent's number of siblings born alive              |
| F36_12  | Currently:How many of the respondent's siblings are liv |
| Wave 4: |   |
| F34_15  | Respondent's number of siblings born alive              |
| F36_15  | Currently: Of the siblings born alive, how many are sti |
| Wave 5: |   |
| F34_18  | R's number of siblings born alive                       |
| F36_18  | Currently: Of the siblings born alive, how many are sti |

|                                    |
|------------------------------------|
| <b>Number of Deceased Siblings</b> |
|------------------------------------|

| Wave | Variable | Label                                      | Type |
|------|----------|--|------|
| 1    | R1DECSIB | r1decsib: w1 R Number of deceased siblings | Cont |
| 2    | R2DECSIB | r2decsib: w2 R Number of deceased siblings | Cont |
| 3    | R3DECSIB | r3decsib: w3 R Number of deceased siblings | Cont |
| 4    | R4DECSIB | r4decsib: w4 R Number of deceased siblings | Cont |
| 5    | R5DECSIB | r5decsib: w5 R Number of deceased siblings | Cont |
| 1    | S1DECSIB | s1decsib: w1 S Number of deceased siblings | Cont |
| 2    | S2DECSIB | s2decsib: w2 S Number of deceased siblings | Cont |
| 3    | S3DECSIB | s3decsib: w3 S Number of deceased siblings | Cont |
| 4    | S4DECSIB | s4decsib: w4 S Number of deceased siblings | Cont |
| 5    | S5DECSIB | s5decsib: w5 S Number of deceased siblings | Cont |

### Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1DECSIB | 14826 | 1.79 | 2.36    | 0.00    | 20.00   |
| R2DECSIB | 13413 | 1.93 | 2.40    | 0.00    | 20.00   |
| R3DECSIB | 15706 | 1.71 | 2.45    | 0.00    | 21.00   |
| R4DECSIB | 13474 | 1.73 | 2.25    | 0.00    | 22.00   |
| R5DECSIB | 15568 | 1.59 | 2.17    | 0.00    | 22.00   |
| S1DECSIB | 10436 | 1.63 | 2.24    | 0.00    | 18.00   |
| S2DECSIB | 9399  | 1.76 | 2.29    | 0.00    | 20.00   |
| S3DECSIB | 10580 | 1.59 | 2.34    | 0.00    | 21.00   |
| S4DECSIB | 8991  | 1.61 | 2.17    | 0.00    | 22.00   |
| S5DECSIB | 6812  | 1.73 | 2.23    | 0.00    | 22.00   |

### How Constructed

RwDECSIB is the number of the respondent's deceased siblings. In both Wave 1 and Wave 2, all participants are asked "How many siblings who were born alive do you have?" They are then asked "Of your siblings who were born alive, how many are living now?" In Wave 3, follow-up participants were only asked "Of your siblings who were born alive, how many are living now?" and only if they reported having a sibling in a previous wave or if they didn't know or refused to answer the questions in the previous wave. Starting in Wave 4, all participants (follow-up and new sample) were asked both questions. RwDECSIB was obtained by subtracting the number of living siblings by the number of siblings ever born. In the case that the respondent reports not having any siblings born alive, RwDECSIB is set to 0. There are cases in which respondents report more living siblings than the number of siblings ever born, in these cases RwDECSIB is assigned a 0 value. When respondents don't know, refuse, or their answer is missing for another reason, RwDECSIB is assigned special missing values .d, .r, or .m. respectively. RwDECSIB is set to special missing (.p) if the sibling questions were skipped because the interview was by proxy. RwDECSIB is set to plain missing (.) for respondents who did not respond to the current wave.

SwDECSIB is the number of the spouse's deceased siblings. They are taken from the spouse's RwDECSIB. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

### Cross Wave Differences in MHAS

Starting in Wave 3, proxy interviews skipped these questions. Also in Wave 3, the number of siblings ever born was pre-loaded for follow-up interviews. If the subject reported having siblings in the previous waves they were asked how many are living now. If the subject reported no siblings they skipped the number of living siblings question. Thus, for follow-up interviews, the total number of deceased siblings was obtained using the number of sibling's ever born reported in the most recent previous wave as well as the number of living siblings reported in Wave 3. For the new sample, the total number was obtained

similar to the previous waves. Starting in Wave 4, all participants (follow-up and new sample) were asked both questions.

Differences with the RAND HRS/Harmonized HRS

In Waves 1, 2H, 3H, 4 and 5 of the HRS, this information is provided by the Family Respondent. In all other HRS Waves, each respondent reports the number of their living siblings.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| F30     | siblings born alive                                     |
| F31     | siblings still alive                                    |
| Wave 2: |   |
| F34     | how many siblings were born alive                       |
| F36     | how many siblings are still alive                       |
| Wave 3: |   |
| F34_12  | Respondent's number of siblings born alive              |
| F36_12  | Currently:How many of the respondent's siblings are liv |
| Wave 4: |   |
| F34_15  | Respondent's number of siblings born alive              |
| F36_15  | Currently: Of the siblings born alive, how many are sti |
| Wave 5: |   |
| F34_18  | R's number of siblings born alive                       |
| F36_18  | Currently: Of the siblings born alive, how many are sti |

|                                 |
|---------------------------------|
| <b>Number of Living Parents</b> |
|---------------------------------|

| Wave | Variable | Label                                   | Type |
|------|----------|---|------|
| 1    | R1LIVPAR | r1livpar: w1 R Number of living parents | Cont |
| 2    | R2LIVPAR | r2livpar: w2 R Number of living parents | Cont |
| 3    | R3LIVPAR | r3livpar: w3 R Number of living parents | Cont |
| 4    | R4LIVPAR | r4livpar: w4 R Number of living parents | Cont |
| 5    | R5LIVPAR | r5livpar: w5 R Number of living parents | Cont |
| 1    | S1LIVPAR | s1livpar: w1 S Number of living parents | Cont |
| 2    | S2LIVPAR | s2livpar: w2 S Number of living parents | Cont |
| 3    | S3LIVPAR | s3livpar: w3 S Number of living parents | Cont |
| 4    | S4LIVPAR | s4livpar: w4 S Number of living parents | Cont |
| 5    | S5LIVPAR | s5livpar: w5 S Number of living parents | Cont |

### Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1LIVPAR | 14904 | 0.43 | 0.66    | 0.00    | 2.00    |
| R2LIVPAR | 13404 | 0.38 | 0.62    | 0.00    | 2.00    |
| R3LIVPAR | 15551 | 0.52 | 0.69    | 0.00    | 2.00    |
| R4LIVPAR | 14582 | 0.33 | 0.58    | 0.00    | 2.00    |
| R5LIVPAR | 16920 | 0.41 | 0.64    | 0.00    | 2.00    |
| S1LIVPAR | 10483 | 0.51 | 0.69    | 0.00    | 2.00    |
| S2LIVPAR | 9381  | 0.45 | 0.66    | 0.00    | 2.00    |
| S3LIVPAR | 10471 | 0.58 | 0.71    | 0.00    | 2.00    |
| S4LIVPAR | 9541  | 0.38 | 0.62    | 0.00    | 2.00    |
| S5LIVPAR | 7401  | 0.29 | 0.55    | 0.00    | 2.00    |

### How Constructed

RwLIVPAR provides the number of the living parents for the respondent. The following is asked in all waves: "Is your mother/father alive now?". RwLIVPAR is coded as 0 if neither parent is alive, 1 if one parent is alive, and 2 if both parents are alive. When respondents don't know, refuse, or their answer is missing for another reason RwLIVPAR is assigned special missing values .d, .r, or .m. respectively. RwLIVPAR is set to plain missing (.) for respondents who did not respond to the current wave.

SwLIVPAR records the number of living parents of the spouse in the current wave. It is taken from the spouse's RwLIVPAR. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

### Cross Wave Differences in MHAS

In Wave 3, for follow-up interviews an additional question was added to verify the mother and father status. The new question is "In the last interview, you said your mother/father (was alive/had passed away). Is this correct?" The information from previous waves was preloaded and the options were: "She/he was alive" or "She/he had passed away". This reported status was also used to construct the R3LIVPAR and S3LIVPAR variables. If the subject reported the mother/father had passed away these follow-up questions were skipped. Starting in Wave 4, follow-up and new respondents were asked the same questions.

### Differences with the RAND HRS/Harmonized HRS

No differences known.

### MHAS Variables Used

Wave 1:

|         |   |
|---------|---|
| F10     | father alive                                  |
| F3      | mother alive                                  |
| Wave 2: |   |
| F12     | father presently alive                        |
| F3      | mother presently alive                        |
| Wave 3: |   |
| F10A_12 | Last interview:Was respondent's father living |
| F12_12  | Currently:Is respondent's father living       |
| F1A_12  | Last interview:Was respondent's mother living |
| F3_12   | Currently:Is respondent's mother living       |
| Wave 4: |   |
| F12_15  | Is respondent's father alive                  |
| F3_15   | Is respondent's mother alive                  |
| Wave 5: |   |
| F12_18  | Is R's father alive                           |
| F3_18   | Is R's mother alive                           |

Parental Mortality

| Wave | Variable | Label                       | Type  |
|------|----------|-----------------------------|-------|
| 1    | R1MOMLIV | r1momliv: w1 R Mother Alive | Categ |
| 2    | R2MOMLIV | r2momliv: w2 R Mother Alive | Categ |
| 3    | R3MOMLIV | r3momliv: w3 R Mother Alive | Categ |
| 4    | R4MOMLIV | r4momliv: w4 R Mother Alive | Categ |
| 5    | R5MOMLIV | r5momliv: w5 R Mother Alive | Categ |
| 1    | S1MOMLIV | s1momliv: w1 S Mother Alive | Categ |
| 2    | S2MOMLIV | s2momliv: w2 S Mother Alive | Categ |
| 3    | S3MOMLIV | s3momliv: w3 S Mother Alive | Categ |
| 4    | S4MOMLIV | s4momliv: w4 S Mother Alive | Categ |
| 5    | S5MOMLIV | s5momliv: w5 S Mother Alive | Categ |
| 1    | R1DADLIV | r1dadliv: w1 R Father Alive | Categ |
| 2    | R2DADLIV | r2dadliv: w2 R Father Alive | Categ |
| 3    | R3DADLIV | r3dadliv: w3 R Father Alive | Categ |
| 4    | R4DADLIV | r4dadliv: w4 R Father Alive | Categ |
| 5    | R5DADLIV | r5dadliv: w5 R Father Alive | Categ |
| 1    | S1DADLIV | s1dadliv: w1 S Father Alive | Categ |
| 2    | S2DADLIV | s2dadliv: w2 S Father Alive | Categ |
| 3    | S3DADLIV | s3dadliv: w3 S Father Alive | Categ |
| 4    | S4DADLIV | s4dadliv: w4 S Father Alive | Categ |
| 5    | S5DADLIV | s5dadliv: w5 S Father Alive | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1MOMLIV | 15045 | 0.28 | 0.45    | 0.00    | 1.00    |
| R2MOMLIV | 13588 | 0.25 | 0.43    | 0.00    | 1.00    |
| R3MOMLIV | 15665 | 0.34 | 0.47    | 0.00    | 1.00    |
| R4MOMLIV | 14705 | 0.22 | 0.41    | 0.00    | 1.00    |
| R5MOMLIV | 17050 | 0.26 | 0.44    | 0.00    | 1.00    |
| S1MOMLIV | 10567 | 0.32 | 0.47    | 0.00    | 1.00    |
| S2MOMLIV | 9493  | 0.29 | 0.45    | 0.00    | 1.00    |
| S3MOMLIV | 10554 | 0.37 | 0.48    | 0.00    | 1.00    |
| S4MOMLIV | 9614  | 0.25 | 0.43    | 0.00    | 1.00    |
| S5MOMLIV | 7438  | 0.19 | 0.39    | 0.00    | 1.00    |
| R1DADLIV | 14852 | 0.15 | 0.36    | 0.00    | 1.00    |
| R2DADLIV | 13388 | 0.13 | 0.34    | 0.00    | 1.00    |
| R3DADLIV | 15499 | 0.18 | 0.39    | 0.00    | 1.00    |
| R4DADLIV | 14557 | 0.11 | 0.31    | 0.00    | 1.00    |
| R5DADLIV | 16845 | 0.15 | 0.35    | 0.00    | 1.00    |
| S1DADLIV | 10433 | 0.18 | 0.39    | 0.00    | 1.00    |
| S2DADLIV | 9364  | 0.16 | 0.36    | 0.00    | 1.00    |
| S3DADLIV | 10424 | 0.21 | 0.41    | 0.00    | 1.00    |
| S4DADLIV | 9521  | 0.13 | 0.33    | 0.00    | 1.00    |
| S5DADLIV | 7386  | 0.09 | 0.29    | 0.00    | 1.00    |

Categorical Variable Codes

| Value----- | R1MOMLIV | R2MOMLIV | R3MOMLIV | R4MOMLIV | R5MOMLIV |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 103      | 89       | 47       | 33       | 36       |
| .m:Missing | 34       | 23       |          | 36       | 17       |
| .r:Refuse  | 4        | 4        | 11       | 5        | 11       |

|            |  |          |          |          |          |          |
|------------|--|----------|----------|----------|----------|----------|
| 0.No       |  | 10860    | 10198    | 10355    | 11518    | 12586    |
| 1.Yes      |  | 4185     | 3390     | 5310     | 3187     | 4464     |
| Value----- |  | S1MOMLIV | S2MOMLIV | S3MOMLIV | S4MOMLIV | S5MOMLIV |
| .d:DK      |  | 66       | 61       | 31       | 27       | 15       |
| .m:Missing |  | 13       | 7        |          | 8        | 3        |
| .r:Refuse  |  | 2        | 3        | 7        | 3        | 5        |
| .u:Unmar   |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR   |  | 333      | 131      | 349      | 280      | 501      |
| 0.No       |  | 7155     | 6736     | 6616     | 7246     | 6008     |
| 1.Yes      |  | 3412     | 2757     | 3938     | 2368     | 1430     |
| Value----- |  | R1DADLIV | R2DADLIV | R3DADLIV | R4DADLIV | R5DADLIV |
| .d:DK      |  | 296      | 287      | 211      | 182      | 234      |
| .m:Missing |  | 34       | 23       |          | 36       | 17       |
| .r:Refuse  |  | 4        | 6        | 13       | 4        | 18       |
| 0.No       |  | 12603    | 11642    | 12663    | 12987    | 14388    |
| 1.Yes      |  | 2249     | 1746     | 2836     | 1570     | 2457     |
| Value----- |  | S1DADLIV | S2DADLIV | S3DADLIV | S4DADLIV | S5DADLIV |
| .d:DK      |  | 200      | 189      | 160      | 121      | 64       |
| .m:Missing |  | 13       | 7        |          | 8        | 3        |
| .r:Refuse  |  | 2        | 4        | 8        | 2        | 8        |
| .u:Unmar   |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR   |  | 333      | 131      | 349      | 280      | 501      |
| 0.No       |  | 8529     | 7902     | 8251     | 8299     | 6694     |
| 1.Yes      |  | 1904     | 1462     | 2173     | 1222     | 692      |

## How Constructed

RwMOMLIV and RwDADLIV indicate whether the respondent's mother or father is alive at the current wave. These variables are taken from the Section F, Parents and Help to Parents. A code of 0 indicates that the respondent's mother or father is not alive and a code of 1 indicates that the respondent's mother or father is alive. When respondents don't know or refuse to answer, RwMOMLIV and RwDADLIV are assigned special missing values .d or .r respectively. The variables are also assigned special missing value .m for the cases that failed to complete Section F (Parents and Help to Parents). RwMOMLIV and RwDADLIV are set to plain missing (.) for respondents who did not respond to the current wave.

SwMOMLIV and SwDADLIV indicate whether the current wave's spouse's father is alive at the current wave. It is taken from the spouse's RwMOMLIV and RwDADLIV, respectively. In addition to the special missing codes used in RwMOMLIV and RwDADLIV, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

Information about parental mortality is reported in the Section F, Parents and Help to Parents. In Waves 1 and 2, the respondents are asked whether their mother/father is alive. However in Wave 3, follow-up respondents are asked "In the last interview, you said your mother/father (was alive/had passed away). Is this correct?". Respondents can indicate whether they were alive or had passed away. If they indicate the mother/father was alive they are asked a follow-up question to establish if they are alive in the current wave. For new interviews the question remains the same as in the first two waves. Starting in Wave 4, follow-up and new respondents were asked the same questions.

## Differences with the RAND HRS/Harmonized HRS

No differences known.

## MHAS Variables Used

Wave 1:  
  F10                father alive  
  F3                mother alive

Wave 2:  
  F12               father presently alive  
  F3                mother presently alive

|         |   |
|---------|---|
| Wave 3: |   |
| F10A_12 | Last interview:Was respondent's father living |
| F12_12  | Currently:Is respondent's father living       |
| F1A_12  | Last interview:Was respondent's mother living |
| F3_12   | Currently:Is respondent's mother living       |
| Wave 4: |   |
| F12_15  | Is respondent's father alive                  |
| F3_15   | Is respondent's mother alive                  |
| Wave 5: |   |
| F12_18  | Is R's father alive                           |
| F3_18   | Is R's mother alive                           |



|   |
|---|
| <b>Parents' Current Age or Age at Death</b> |
|---|

| Wave | Variable | Label  | Type |
|------|----------|--|------|
| 1    | R1MOMAGE | r1momage: w1 R Mother's age - current/at death | Cont |
| 2    | R2MOMAGE | r2momage: w2 R Mother's age - current/at death | Cont |
| 3    | R3MOMAGE | r3momage: w3 R Mother's age - current/at death | Cont |
| 4    | R4MOMAGE | r4momage: w4 R Mother's age - current/at death | Cont |
| 5    | R5MOMAGE | r5momage: w5 R Mother's age - current/at death | Cont |
| 1    | S1MOMAGE | s1momage: w1 S Mother's age - current/at death | Cont |
| 2    | S2MOMAGE | s2momage: w2 S Mother's age - current/at death | Cont |
| 3    | S3MOMAGE | s3momage: w3 S Mother's age - current/at death | Cont |
| 4    | S4MOMAGE | s4momage: w4 S Mother's age - current/at death | Cont |
| 5    | S5MOMAGE | s5momage: w5 S Mother's age - current/at death | Cont |
| 1    | R1DADAGE | r1dadage: w1 R Father's age - current/at death | Cont |
| 2    | R2DADAGE | r2dadage: w2 R Father's age - current/at death | Cont |
| 3    | R3DADAGE | r3dadage: w3 R Father's age - current/at death | Cont |
| 4    | R4DADAGE | r4dadage: w4 R Father's age - current/at death | Cont |
| 5    | R5DADAGE | r5dadage: w5 R Father's age - current/at death | Cont |
| 1    | S1DADAGE | s1dadage: w1 S Father's age - current/at death | Cont |
| 2    | S2DADAGE | s2dadage: w2 S Father's age - current/at death | Cont |
| 3    | S3DADAGE | s3dadage: w3 S Father's age - current/at death | Cont |
| 4    | S4DADAGE | s4dadage: w4 S Father's age - current/at death | Cont |
| 5    | S5DADAGE | s5dadage: w5 S Father's age - current/at death | Cont |

### Descriptive Statistics

| Variable | N     | Mean  | Std Dev | Minimum | Maximum |
|----------|-------|-------|---------|---------|---------|
| R1MOMAGE | 13431 | 70.85 | 16.24   | 15.00   | 128.00  |
| R2MOMAGE | 11906 | 71.82 | 16.45   | 15.00   | 131.00  |
| R3MOMAGE | 14296 | 73.20 | 15.95   | 15.00   | 128.00  |
| R4MOMAGE | 13479 | 74.69 | 16.25   | 15.00   | 130.00  |
| R5MOMAGE | 15534 | 74.42 | 15.37   | 15.00   | 130.00  |
| S1MOMAGE | 9546  | 70.63 | 15.61   | 16.00   | 128.00  |
| S2MOMAGE | 8426  | 71.68 | 15.92   | 15.00   | 128.00  |
| S3MOMAGE | 9703  | 72.97 | 15.58   | 15.00   | 128.00  |
| S4MOMAGE | 8927  | 74.53 | 15.86   | 15.00   | 130.00  |
| S5MOMAGE | 6734  | 75.07 | 15.91   | 15.00   | 128.00  |
| R1DADAGE | 12629 | 70.59 | 16.34   | 16.00   | 130.00  |
| R2DADAGE | 11181 | 71.48 | 16.36   | 15.00   | 131.00  |
| R3DADAGE | 13537 | 72.48 | 15.96   | 15.00   | 130.00  |
| R4DADAGE | 12721 | 73.63 | 16.53   | 15.00   | 130.00  |
| R5DADAGE | 14680 | 73.83 | 15.79   | 17.00   | 130.00  |
| S1DADAGE | 9091  | 70.83 | 15.98   | 18.00   | 130.00  |
| S2DADAGE | 8082  | 71.67 | 16.02   | 16.00   | 130.00  |
| S3DADAGE | 9289  | 72.70 | 15.64   | 18.00   | 120.00  |
| S4DADAGE | 8504  | 73.79 | 16.10   | 15.00   | 115.00  |
| S5DADAGE | 6429  | 74.63 | 15.98   | 19.00   | 116.00  |

### How Constructed

RwMOMAGE and RwDADAGE are the respondent's mother's or father's current age in years if the mother or father is still alive or the respondent's mother's or father's age at death. When respondents don't know or refuse to answer, RwMOMAGE and RwDADAGE are assigned special missing values .d or .r respectively. The variables are also assigned special missing value .m for the cases that failed to complete Section F

(Parents and Help to Parents). RwmOMAGE and RwdADAGE are set to plain missing (.) for respondents who did not respond to the current wave.

SwMOMAGE and SwDADAGE are the spouse's mother's or father's current age or age at death. It is taken from the spouse's values to RwmOMAGE and RwdADAGE. In addition to the special missing codes used in RwmOMAGE and RwdADAGE, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

No differences known.

## MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| F11     | age father                                    |
| F14     | age father when died                          |
| F4      | age mother                                    |
| F7      | age mother when died                          |
| Wave 2: |   |
| F13     | age of father                                 |
| F17     | age of father when he passed away             |
| F4      | age of mother                                 |
| F8      | age of mother when she passed away            |
| Wave 3: |   |
| F13_12  | Currently:Age of respondent's father          |
| F17_12  | At death:How old was respondent's father      |
| F4_12   | Currently:Age of respondent's mother          |
| F8_12   | At death:How old was respondent's mother      |
| Wave 4: |   |
| F12_15  | Is respondent's father alive                  |
| F13_15  | Respondent's father age                       |
| F17_15  | How old was respondent's father when he died  |
| F3_15   | Is respondent's mother alive                  |
| F4_15   | Respondent's mother age                       |
| F8_15   | How old was respondent's mother when she died |
| Wave 5: |   |
| F12_18  | Is R's father alive                           |
| F13_18  | R's father age                                |
| F17_18  | How old was R's father when he died           |
| F3_18   | Is R's mother alive                           |
| F4_18   | R's mother age                                |
| F8_18   | How old was R's mother when she died          |

Parents' Education

| Wave | Variable  | Label                              | Type  |
|------|-----------|------------------------------------|-------|
| 1    | RAMEDUC_M | rateduc_m: R Mother's Education    | Categ |
| 1    | S1MEDUC_M | s1meduc_m: w1 S Mother's Education | Categ |
| 2    | S2MEDUC_M | s2meduc_m: w2 S Mother's Education | Categ |
| 3    | S3MEDUC_M | s3meduc_m: w3 S Mother's Education | Categ |
| 4    | S4MEDUC_M | s4meduc_m: w4 S Mother's Education | Categ |
| 5    | S5MEDUC_M | s5meduc_m: w5 S Mother's Education | Categ |
| 1    | RAFEDUC_M | rafeduc_m: R Father's Education    | Categ |
| 1    | S1FEDUC_M | s1feduc_m: w1 S Father's Education | Categ |
| 2    | S2FEDUC_M | s2feduc_m: w2 S Father's Education | Categ |
| 3    | S3FEDUC_M | s3feduc_m: w3 S Father's Education | Categ |
| 4    | S4FEDUC_M | s4feduc_m: w4 S Father's Education | Categ |
| 5    | S5FEDUC_M | s5feduc_m: w5 S Father's Education | Categ |

Descriptive Statistics

| Variable  | N     | Mean | Std Dev | Minimum | Maximum |
|-----------|-------|------|---------|---------|---------|
| RAMEDUC_M | 22882 | 1.73 | 0.88    | 1.00    | 4.00    |
| S1MEDUC_M | 9177  | 1.62 | 0.81    | 1.00    | 4.00    |
| S2MEDUC_M | 8527  | 1.61 | 0.80    | 1.00    | 4.00    |
| S3MEDUC_M | 9124  | 1.69 | 0.83    | 1.00    | 4.00    |
| S4MEDUC_M | 8375  | 1.71 | 0.84    | 1.00    | 4.00    |
| S5MEDUC_M | 6402  | 1.69 | 0.83    | 1.00    | 4.00    |
| RAFEDUC_M | 22122 | 1.86 | 0.94    | 1.00    | 4.00    |
| S1FEDUC_M | 9019  | 1.74 | 0.89    | 1.00    | 4.00    |
| S2FEDUC_M | 8372  | 1.72 | 0.87    | 1.00    | 4.00    |
| S3FEDUC_M | 8876  | 1.82 | 0.90    | 1.00    | 4.00    |
| S4FEDUC_M | 8146  | 1.83 | 0.91    | 1.00    | 4.00    |
| S5FEDUC_M | 6226  | 1.79 | 0.89    | 1.00    | 4.00    |

Categorical Variable Codes

|                               |           |           |           |           |           |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| Value-----                    | RAMEDUC_M |           |           |           |           |
| .d:DK                         | 2154      |           |           |           |           |
| .m:Missing                    | 1111      |           |           |           |           |
| .p:Proxy interview, not asked | 625       |           |           |           |           |
| .r:Refuse                     | 67        |           |           |           |           |
| 1.None                        | 11335     |           |           |           |           |
| 2.Some primary                | 7592      |           |           |           |           |
| 3.Primary                     | 2643      |           |           |           |           |
| 4.More than primary           | 1312      |           |           |           |           |
| Value-----                    | S1MEDUC_M | S2MEDUC_M | S3MEDUC_M | S4MEDUC_M | S5MEDUC_M |
| .d:DK                         | 785       | 726       | 824       | 825       | 626       |
| .m:Missing                    | 672       | 601       | 328       | 330       | 211       |
| .p:Proxy interview, not asked |           | 54        | 284       | 258       | 197       |
| .r:Refuse                     | 14        | 14        | 32        | 33        | 25        |
| .u:Unmar                      | 4205      | 3755      | 4782      | 4846      | 5227      |
| .v:SP NR                      | 333       | 27        | 349       | 112       | 501       |
| 1.None                        | 5053      | 4728      | 4570      | 4139      | 3231      |
| 2.Some primary                | 2886      | 2707      | 3196      | 2959      | 2242      |
| 3.Primary                     | 872       | 774       | 936       | 877       | 638       |
| 4.More than primary           | 366       | 318       | 422       | 400       | 291       |

|                               |           |      |  |  |  |
|-------------------------------|-----------|------|--|--|--|
| Value-----                    | RAFEDUC_M |      |  |  |  |
| .d:DK                         |           | 2900 |  |  |  |
| .m:Missing                    |           | 1111 |  |  |  |
| .p:Proxy interview, not asked |           | 625  |  |  |  |
| .r:Refuse                     |           | 81   |  |  |  |
| 1.None                        |           | 9658 |  |  |  |
| 2.Some primary                |           | 7874 |  |  |  |
| 3.Primary                     |           | 2657 |  |  |  |
| 4.More than primary           |           | 1933 |  |  |  |

|                               |           |           |           |           |           |      |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|------|
| Value-----                    | S1FEDUC_M | S2FEDUC_M | S3FEDUC_M | S4FEDUC_M | S5FEDUC_M |      |
| .d:DK                         |           | 939       | 877       | 1073      | 1056      | 802  |
| .m:Missing                    |           | 672       | 601       | 328       | 330       | 211  |
| .p:Proxy interview, not asked |           |           | 54        | 284       | 258       | 197  |
| .r:Refuse                     |           | 18        | 18        | 31        | 31        | 25   |
| .u:Unmar                      |           | 4205      | 3755      | 4782      | 4846      | 5227 |
| .v:SP NR                      |           | 333       | 27        | 349       | 112       | 501  |
| 1.None                        |           | 4443      | 4178      | 3944      | 3561      | 2800 |
| 2.Some primary                |           | 3082      | 2886      | 3253      | 3026      | 2323 |
| 3.Primary                     |           | 880       | 798       | 1033      | 961       | 683  |
| 4.More than primary           |           | 614       | 510       | 646       | 598       | 420  |

How Constructed

RAMEDUC\_M and RAFEDUC\_M are the parent's education variables. They are assigned by looking at reports from the Parents and Help to Parents section (Section F). These variables are constructed by looking at all waves of data for the first non-missing values. A code of 1 indicates no education; a code of 2 indicates 'some primary'; a code of 3 indicates 'primary'; and a code of 4 indicates 'more than primary'. When respondents don't know, refuse, or their answer is missing for another reason, RAMEDUC\_M and RAFEDUC\_M are assigned special missing values .d, .r, or .m. respectively. They are also set to special missing (.p) if the parents' education question was skipped because the interview was by proxy. RAMEDUC\_M and RAFEDUC\_M are set to plain missing (.) for respondents who did not respond to the current wave.

SwMEDUC\_M and SwFEDUC\_M indicate the current wave's spouse's parent's education level. It is taken from the spouse's variables RAMEDUC\_M and RAFEDUC\_M. If the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

No differences known.

Differences with the RAND HRS/Harmonized HRS

Unlike the HRS, the parent's education question in the MHAS does not ask for the number years of education, but for the education level. The MHAS variable is categorical and includes 4 categories to indicate whether the respondent's parents completed 'some primary', 'primary', 'more than primary', or did not complete any formal education.

MHAS Variables Used

|         |                                     |
|---------|-------------------------------------|
| Wave 1: |                                     |
| F1      | mother's education                  |
| F8      | father's education                  |
| Wave 2: |                                     |
| F1      | mother's education                  |
| F10     | father's education                  |
| Wave 3: |                                     |
| F10B_12 | Respondent's father education level |
| F1B_12  | Respondent's mother education level |
| Wave 4: |                                     |
| F10_15  | Respondent's father education level |
| F1_15   | Respondent's mother education level |
| Wave 5: |                                     |
| F10_18  | R's father education level          |

F1\_18                    R's mother education level

Any Child Co-Resides with Respondent

| Wave | Variable | Label                                      | Type  |
|------|----------|--|-------|
| 1    | H1CORESD | h1coresd: w1 Any child co-resides with R/P | Categ |
| 2    | H2CORESD | h2coresd: w2 Any child co-resides with R/P | Categ |
| 3    | H3CORESD | h3coresd: w3 Any child co-resides with R/P | Categ |
| 4    | H4CORESD | h4coresd: w4 Any child co-resides with R/P | Categ |
| 5    | H5CORESD | h5coresd: w5 Any child co-resides with R/P | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| H1CORESD | 14847 | 0.75 | 0.43    | 0.00    | 1.00    |
| H2CORESD | 13408 | 0.78 | 0.41    | 0.00    | 1.00    |
| H3CORESD | 15073 | 0.79 | 0.41    | 0.00    | 1.00    |
| H4CORESD | 14369 | 0.73 | 0.44    | 0.00    | 1.00    |
| H5CORESD | 16306 | 0.72 | 0.45    | 0.00    | 1.00    |

Categorical Variable Codes

| Value----- | H1CORESD | H2CORESD | H3CORESD | H4CORESD | H5CORESD |
|------------|----------|----------|----------|----------|----------|
| .k:no kids | 740      | 573      | 650      | 550      | 808      |
| 0.No       | 3686     | 2954     | 3135     | 3873     | 4608     |
| 1.Yes      | 11161    | 10454    | 11938    | 10496    | 11698    |

How Constructed

HwCORESD indicates if the respondent and the spouse co-reside with children. When at least one child (natural, step, adopted, or foster) is listed in the MHAS Household Roster (TRH), a code of 1 is assigned to indicate child co-residence. If no children are included in the MHAS Household Roster, a code of 0 is assigned to indicate no child co-residence. Special missing code .k is assigned if the respondent and spouse (if any) reports not having any living children. HwCORESD is set to plain missing (.) if the respondent did not participate in the current wave.

Cross Wave Differences in MHAS

Starting in Wave 3, the MHAS has separate modules for follow-up and new sample interviews. Thus, each variable accounts for both the follow-up and the new sample.

Differences with the RAND HRS/Harmonized HRS

Whether any child co-resides is included in the RAND HRS Family Data.

MHAS Variables Used

|          |   |
|----------|---|
| Wave 1:  |   |
| TRH2     | registration number of household member                 |
| TRH6     | relationship of household member to selected person     |
| TRH7     | relationship of household member to spouse of sel. pers |
| Wave 2:  |   |
| TRH10    | relationship with spouse                                |
| TRH3     | registration number                                     |
| TRH9     | relationship  |
| Wave 3:  |   |
| NTRH3_12 | Resident's registration number                          |
| NTRH6_12 | Resident's relationship to respondent                   |
| NTRH7_12 | Resident's relationship with respondent's spouse        |
| TRH10_12 | Resident's relationship to respondent's spouse          |

|          |  |
|----------|--|
| TRH3_12  | Household Resident registration number           |
| TRH9_12  | Resident's relationship to respondent            |
| Wave 4:  |  |
| NTRH3_15 | Resident's registration number                   |
| NTRH6_15 | Resident's relationship to respondent            |
| NTRH7_15 | Resident's relationship with respondent's spouse |
| TRH10_15 | Resident's relationship to respondent's spouse   |
| TRH3_15  | Household resident registration number           |
| TRH9_15  | Resident's relationship to respondent            |
| Wave 5:  |  |
| NTRH3_18 | Household resident registration number           |
| NTRH6_18 | Resident's relationship to respondent            |
| NTRH7_18 | Resident's relationship to respondent's spouse   |
| TRH10_18 | Resident's relationship to respondent's spouse   |
| TRH3_18  | Household resident registration number           |
| TRH9_18  | Resident's relationship to respondent            |

Any Children Living in the Same City

| Wave | Variable | Label   | Type  |
|------|----------|---|-------|
| 1    | H1LVNEAR | h1lvnear: w1 Any child lives in the same city | Categ |
| 2    | H2LVNEAR | h2lvnear: w2 Any child lives in the same city | Categ |
| 3    | H3LVNEAR | h3lvnear: w3 Any child lives in the same city | Categ |
| 4    | H4LVNEAR | h4lvnear: w4 Any child lives in the same city | Categ |
| 5    | H5LVNEAR | h5lvnear: w5 Any child lives in the same city | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| H1LVNEAR | 14947 | 0.97 | 0.18    | 0.00    | 1.00    |
| H2LVNEAR | 13488 | 0.97 | 0.17    | 0.00    | 1.00    |
| H3LVNEAR | 15073 | 0.97 | 0.17    | 0.00    | 1.00    |
| H4LVNEAR | 14397 | 0.96 | 0.19    | 0.00    | 1.00    |
| H5LVNEAR | 16306 | 0.95 | 0.21    | 0.00    | 1.00    |

Categorical Variable Codes

| Value----- | H1LVNEAR | H2LVNEAR | H3LVNEAR | H4LVNEAR | H5LVNEAR |
|------------|----------|----------|----------|----------|----------|
| .k:no kids | 739      | 573      | 650      | 550      | 808      |
| 0.No       | 485      | 415      | 470      | 548      | 776      |
| 1.Yes      | 14462    | 13073    | 14603    | 13849    | 15530    |

How Constructed

HwLVNEAR indicates if the respondent and the spouse (if any) live in the same city with at least one of their children. If the respondent and the spouse (if any) co-reside with at least one child (natural, step, adopted, or foster), that is if HwCORESD has a value of 1, a code of 1 is assigned to indicate that the respondent and the spouse live near their children. Also, if the respondent and the spouse list non-resident children in the Non-Resident Children Module (Section B), the MHAS asks "Where does (NAME) live?". A code of 1 was assigned to HwLVNEAR if the respondent and the spouse (if any) indicate that at least one child lives in the same house or building, same locality or neighborhood, or different locality or neighborhood but in the same city. A code of 0 indicates none of the children reported in the Non-Resident Children Module live in the same house or building, same locality or neighborhood, or different locality or neighborhood but in the same city. Special missing code .k is assigned if the respondent and spouse (if any) reports not having any living children. HwLVNEAR is set to plain missing (.) if the respondent did not participate in the current wave.

Cross Wave Differences in MHAS

Starting in Wave 3, the MHAS has separate modules for follow-up and new sample interviews. Thus, each variable accounts for both the follow-up and the new sample.

Differences with the RAND HRS/Harmonized HRS

The RAND HRS Family Data includes RwLVNEAR which is a categorical variable indicating how closely the child lives to the respondent's home, whether co-resides, lives within 10 miles, or lives more than 10 miles away. Different from the RAND HRS variable, HwLVNEAR in the Harmonized MHAS indicates whether any child lives within the same city as the respondent and/or spouse.

MHAS Variables Used

|         |                                   |
|---------|-----------------------------------|
| Wave 1: |                                   |
| B18     | where does nonresident child live |
| Wave 2: |                                   |
| B17     | where person lives                |



|         |  |
|---------|--|
| Wave 3: |  |
| B17_12  | Where does non-resident child 12 years or older live |
| NB18_12 | Where non-resident child lives                       |
| Wave 4: |  |
| B17_15  | Non-resident Child 12 years+: Where does he/she live |
| NB18_15 | Non-resident Child 12 years+: Where does he/she live |
| Wave 5: |  |
| B17_18  | Non-resident Child 12 years+: Where does he/she live |
| NB18_18 | Non-resident Child 12 years+: Where does he/she live |

Any Weekly Contact with Children

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | H1KCNT   | h1kcnt: w1 Any weekly contact w/ children in person/phone/em | Categ |
| 2    | H2KCNT   | h2kcnt: w2 Any weekly contact w/ children in person/phone/em | Categ |
| 3    | H3KCNT   | h3kcnt: w3 Any weekly contact w/ children in person/phone/em | Categ |
| 4    | H4KCNT   | h4kcnt: w4 Any weekly contact w/ children in person/phone/em | Categ |
| 5    | H5KCNT   | h5kcnt: w5 Any weekly contact w/ children in person/phone/em | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| H1KCNT   | 14947 | 0.96 | 0.19    | 0.00    | 1.00    |
| H2KCNT   | 13485 | 0.97 | 0.17    | 0.00    | 1.00    |
| H3KCNT   | 15073 | 0.98 | 0.15    | 0.00    | 1.00    |
| H4KCNT   | 14403 | 0.98 | 0.15    | 0.00    | 1.00    |
| H5KCNT   | 16306 | 0.98 | 0.15    | 0.00    | 1.00    |

Categorical Variable Codes

| Value----- | H1KCNT | H2KCNT | H3KCNT | H4KCNT | H5KCNT |
|------------|--------|--------|--------|--------|--------|
| .k:no kids | 739    | 573    | 650    | 550    | 808    |
| 0.No       | 565    | 420    | 365    | 317    | 382    |
| 1.Yes      | 14382  | 13065  | 14708  | 14086  | 15924  |

How Constructed

HwKCNT indicates whether the respondent and the spouse (if any) have weekly contact with any of their children on a regular basis. If the respondent and the spouse (if any) co-reside with at least one child (natural, step, adopted, or foster), that is if HwCORESD has a value of 1, a code 1 is assigned to indicate contact with children. Also, if the respondent and the spouse (if any) list non-resident children in the Non-Resident children module (Section B), the MHAS asks "How often did you (or your spouse) have contact with (NAME) either in person, by mail, or by telephone?" for each listed child. A code of 1 is assigned to HwKCNT if they report weekly contact, that is one or more times per week, 4 or more times per month, or 52 times or more per year. A code of 0 indicates that the respondent has less than weekly contact with all of the children reported in the Non-Resident Children Module. Special missing code .k is assigned if the respondent and spouse (if any) report not having any living children. HwKCNT is set to plain missing (.) if the respondent did not participate in the current wave.

Cross Wave Differences in MHAS

Starting in Wave 3, the MHAS has separate modules for follow-up and new sample interviews. Thus, each variable accounts for both the follow-up and the new sample.

Differences with the RAND HRS/Harmonized HRS

The RAND HRS Family Data includes KwCONTYR, which records the frequency of contact with children per year. The Harmonized HRS includes HwKCNT, which indicates any weekly contact with children in person or electronically, and RwKCNTF, which indicates any weekly contact in person with their children. HwKCNT in the Harmonized MHAS indicates whether the respondent has weekly contact with their children.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| B10_1   | in the last 2 years, how often did you/your spouse cont |
| B10_2   | in the last 2 years, how often did you/your spouse cont |
| Wave 2: |   |
| B10_1   | contact - times   |

|           |   |
|-----------|---|
| B10_2     | contact - per period                                    |
| Wave 3:   |   |
| B10_1_12  | Frequent contact with non-resident child 12 years or ol |
| B10_2_12  | Frequent contact with non-resident child 12 years or ol |
| NB10_1_12 | Last two years, how often contact non-resident child -  |
| NB10_2_12 | Last two years, how often contact non-resident child -  |
| Wave 4:   |   |
| B10_1_15  | Non-resident Child 12 years+: Frequency of contact - Ti |
| B10_2_15  | Non-resident Child 12 years+: Frequency of contact - Pe |
| NB10_1_15 | Non-resident Child 12 years+: Frequency of contact - Ti |
| NB10_2_15 | Non-resident Child 12 years+: Frequency of contact - Pe |
| Wave 5:   |   |
| B10_1_18  | Non-resident Child 12 years+: Frequency of contact - Ti |
| B10_2_18  | Non-resident Child 12 years+: Frequency of contact - Pe |
| NB10_1_18 | Non-resident Child 12 years+: Frequency of contact - Ti |
| NB10_2_18 | Non-resident Child 12 years+: Frequency of contact - Pe |

Frequent or Weekly Contact with Relatives and Friends

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 3    | R3RFCNT    | r3rfcnt: w3 R Any weekly contact w/friends and relatives | Categ |
| 4    | R4RFCNT    | r4rfcnt: w4 R Any weekly contact w/friends and relatives | Categ |
| 5    | R5RFCNT    | r5rfcnt: w5 R Any weekly contact w/friends and relatives | Categ |
| 3    | S3RFCNT    | s3rfcnt: w3 S Any weekly contact w/friends and relatives | Categ |
| 4    | S4RFCNT    | s4rfcnt: w4 S Any weekly contact w/friends and relatives | Categ |
| 5    | S5RFCNT    | s5rfcnt: w5 S Any weekly contact w/friends and relatives | Categ |
| 3    | R3RFCNTX_M | r3rfcntx_m: w3 R Freq contact w/friends and relatives    | Categ |
| 4    | R4RFCNTX_M | r4rfcntx_m: w4 R Freq contact w/friends and relatives    | Categ |
| 5    | R5RFCNTX_M | r5rfcntx_m: w5 R Freq contact w/friends and relatives    | Categ |
| 3    | S3RFCNTX_M | s3rfcntx_m: w3 S Freq contact w/friends and relatives    | Categ |
| 4    | S4RFCNTX_M | s4rfcntx_m: w4 S Freq contact w/friends and relatives    | Categ |
| 5    | S5RFCNTX_M | s5rfcntx_m: w5 S Freq contact w/friends and relatives    | Categ |

Descriptive Statistics

| Variable   | N     | Mean | Std Dev | Minimum | Maximum |
|------------|-------|------|---------|---------|---------|
| R3RFCNT    | 14417 | 0.56 | 0.50    | 0.00    | 1.00    |
| R4RFCNT    | 13800 | 0.68 | 0.47    | 0.00    | 1.00    |
| R5RFCNT    | 15767 | 0.72 | 0.45    | 0.00    | 1.00    |
| S3RFCNT    | 9845  | 0.56 | 0.50    | 0.00    | 1.00    |
| S4RFCNT    | 9161  | 0.69 | 0.46    | 0.00    | 1.00    |
| S5RFCNT    | 6895  | 0.71 | 0.45    | 0.00    | 1.00    |
| R3RFCNTX_M | 14417 | 4.98 | 3.27    | 1.00    | 9.00    |
| R4RFCNTX_M | 13800 | 4.10 | 3.09    | 1.00    | 9.00    |
| R5RFCNTX_M | 15767 | 3.76 | 3.07    | 1.00    | 9.00    |
| S3RFCNTX_M | 9845  | 4.95 | 3.25    | 1.00    | 9.00    |
| S4RFCNTX_M | 9161  | 4.03 | 3.04    | 1.00    | 9.00    |
| S5RFCNTX_M | 6895  | 3.88 | 3.07    | 1.00    | 9.00    |

Categorical Variable Codes

|                               |            |            |            |
|-------------------------------|------------|------------|------------|
| Value-----                    | R3RFCNT    | R4RFCNT    | R5RFCNT    |
| .d:DK                         | 4          | 9          | 3          |
| .i:Invalid                    | 22         | 16         | 10         |
| .m:Missing                    |            | 23         |            |
| .p:Proxy interview, not asked | 1275       | 929        | 1328       |
| .r:Refuse                     | 5          | 2          | 6          |
| 0.No                          | 6378       | 4407       | 4342       |
| 1.Yes                         | 8039       | 9393       | 11425      |
| Value-----                    | S3RFCNT    | S4RFCNT    | S5RFCNT    |
| .d:DK                         | 4          | 5          | 1          |
| .i:Invalid                    | 15         | 9          | 3          |
| .m:Missing                    |            | 5          |            |
| .p:Proxy interview, not asked | 726        | 470        | 560        |
| .r:Refuse                     | 2          | 2          | 2          |
| .u:Unmar                      | 4782       | 4847       | 5227       |
| .v:SP NR                      | 349        | 280        | 501        |
| 0.No                          | 4312       | 2842       | 1985       |
| 1.Yes                         | 5533       | 6319       | 4910       |
| Value-----                    | R3RFCNTX_M | R4RFCNTX_M | R5RFCNTX_M |
| .d:DK                         | 4          | 9          | 3          |

|                               |  |      |      |      |
|-------------------------------|--|------|------|------|
| .i:Invalid                    |  | 22   | 16   | 10   |
| .m:Missing                    |  |      | 23   |      |
| .p:Proxy interview, not asked |  | 1275 | 929  | 1328 |
| .r:Refuse                     |  | 5    | 2    | 6    |
| 1.Almost every day            |  | 3506 | 4490 | 6125 |
| 2.4 or more times a week      |  | 768  | 868  | 1001 |
| 3.2 or 3 times a week         |  | 2157 | 2333 | 2471 |
| 4.Once a week                 |  | 1409 | 1526 | 1646 |
| 5.4 or more times a month     |  | 199  | 176  | 182  |
| 6.2 or 3 times a month        |  | 629  | 614  | 564  |
| 7.Once a month                |  | 578  | 758  | 565  |
| 8.Almost Never, sporadic      |  | 676  |      |      |
| 9.Never                       |  | 4495 | 3035 | 3213 |

|                               |  |            |            |            |
|-------------------------------|--|------------|------------|------------|
| Value-----                    |  | S3RFCNTX_M | S4RFCNTX_M | S5RFCNTX_M |
| .d:DK                         |  | 4          | 5          | 1          |
| .i:Invalid                    |  | 15         | 9          | 3          |
| .m:Missing                    |  |            | 5          |            |
| .p:Proxy interview, not asked |  | 726        | 470        | 560        |
| .r:Refuse                     |  | 2          | 2          | 2          |
| .u:Unmar                      |  | 4782       | 4847       | 5227       |
| .v:SP NR                      |  | 349        | 280        | 501        |
| 1.Almost every day            |  | 2408       | 2980       | 2473       |
| 2.4 or more times a week      |  | 510        | 575        | 458        |
| 3.2 or 3 times a week         |  | 1488       | 1612       | 1166       |
| 4.Once a week                 |  | 982        | 1029       | 731        |
| 5.4 or more times a month     |  | 145        | 123        | 82         |
| 6.2 or 3 times a month        |  | 446        | 427        | 277        |
| 7.Once a month                |  | 413        | 516        | 260        |
| 8.Almost Never, sporadic      |  | 474        |            |            |
| 9.Never                       |  | 2979       | 1899       | 1448       |

## How Constructed

RwRFCNTX\_M indicates the frequency of contacting with relatives and friends: 1.almost every day, 2.four or more times per week, 3.two or three times a week, 4.once a week, 5.four or more times a month, 6.two or three times a month, 7.once a month, 8.almost never/sporadic, or 9.never.

RwRFCNT indicates whether the respondent has weekly contact with relatives and friends. A code of 1 indicates the respondent has contact with relatives and friends at least once a week, that is RwRFCNTX\_M is either almost every day, once a week, two or three times a week, four or more times a week, or four or more times per month. Otherwise, RwRFCNT is assigned a code of 0 indicating no weekly contact.

RwRFCNTX\_M and RwRFCNT are assigned special missing values .d or .r if respondents don't know or refuse to answer, respectively. The variables are also assigned special missing value .p, for proxy interviews. The variables are assigned special missing value .m for the cases that failed to complete Section D. In addition, RwRFCNTX\_M is assigned special missing value .i to indicate inconsistent frequency, if the respondent reports contact with relatives and friends more than 21 times per week or more than 81 times per month (that is more than 3 times per day). RwRFCNTX\_M and RwRFCNT are set to plain missing (.) for respondents who did not respond to the current wave.

SwRFCNTX\_M and SwRFCNT are the respective contact with relatives and friends variables for the respondent's spouse or partner. SwRFCNTX\_M and SwRFCNT are taken from the Wave 'w' spouse's value for RwRFCNTX\_M and RwRFCNT. In addition to the special missing codes used in RwRFCNTX\_M and RwRFCNT, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

The contact with friends and relatives information was derived from the 'Use of Time' battery included in Section D (Control and Health Services). This battery was included starting in Wave 3. In Wave 3, there is a code to indicate that the respondent had contact with friends and relatives sporadically in the past year. Starting in Wave 4, this code is no longer present.

Differences with the RAND HRS/Harmonized HRS

The Harmonized HRS includes `RwRFCNT`, which indicates whether the respondent had any weekly contact with relatives or friends in person or electronically, which is comparable to `RwRFCNT` in the Harmonized MHAS. The Harmonized MHAS also includes `RwRFCNTF` and `RwRFCNTPM`, which indicate whether the respondent had weekly contact with relatives and friends in person or electronically, respectively. While the Harmonized MHAS includes `RwRFCNTX_M` indicating the frequency of contact with friends and relatives.

MHAS Variables Used

|          |   |
|----------|---|
| Wave 3:  |   |
| D34I1_12 | Does respondent communicate with relatives/friends via  |
| D34I2_12 | Number of times respondent communicates with his/her re |
| D34I3_12 | Respondent's time period to report communicating with h |
| Wave 4:  |   |
| D34I1_15 | Does respondent talk to relatives or friends via phone, |
| D34I2_15 | Number of times respondent has talked with relatives or |
| D34I3_15 | Respondent's time period talking with relatives or frie |
| Wave 5:  |   |
| D34I1_18 | Does R talk to relatives or friends via phone, computer |
| D34I2_18 | Number of times R has talked with relatives or friends  |
| D34I3_18 | R's time period talking with relatives or friends       |

|  |
|--|
| <b>Any Weekly Social Activities or Participate in Religious Groups</b> |
|--|

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 3    | R3SOCWK    | r3socwk: w3 R Any weekly social activities                   | Categ |
| 4    | R4SOCWK    | r4socwk: w4 R Any weekly social activities                   | Categ |
| 5    | R5SOCWK    | r5socwk: w5 R Any weekly social activities                   | Categ |
| 3    | S3SOCWK    | s3socwk: w3 S Any weekly social activities                   | Categ |
| 4    | S4SOCWK    | s4socwk: w4 S Any weekly social activities                   | Categ |
| 5    | S5SOCWK    | s5socwk: w5 S Any weekly social activities                   | Categ |
| 3    | R3SOCACT_M | r3socact_m: w3 R Freq social activities                      | Categ |
| 4    | R4SOCACT_M | r4socact_m: w4 R Freq social activities                      | Categ |
| 5    | R5SOCACT_M | r5socact_m: w5 R Freq social activities                      | Categ |
| 3    | S3SOCACT_M | s3socact_m: w3 S Freq social activities                      | Categ |
| 4    | S4SOCACT_M | s4socact_m: w4 S Freq social activities                      | Categ |
| 5    | S5SOCACT_M | s5socact_m: w5 S Freq social activities                      | Categ |
| 3    | R3RELGWK   | r3relgwk: w3 R Any weekly participation in religious service | Categ |
| 4    | R4RELGWK   | r4relgwk: w4 R Any weekly participation in religious service | Categ |
| 5    | R5RELGWK   | r5relgwk: w5 R Any weekly participation in religious service | Categ |
| 3    | S3RELGWK   | s3relgwk: w3 S Any weekly participation in religious service | Categ |
| 4    | S4RELGWK   | s4relgwk: w4 S Any weekly participation in religious service | Categ |
| 5    | S5RELGWK   | s5relgwk: w5 S Any weekly participation in religious service | Categ |
| 1    | R1RELGIMP  | r1relgimp:w1 R importance of religion                        | Categ |
| 2    | R2RELGIMP  | r2relgimp:w2 R importance of religion                        | Categ |
| 3    | R3RELGIMP  | r3relgimp:w3 R importance of religion                        | Categ |
| 4    | R4RELGIMP  | r4relgimp:w4 R importance of religion                        | Categ |
| 5    | R5RELGIMP  | r5relgimp:w5 R importance of religion                        | Categ |
| 1    | S1RELGIMP  | s1relgimp:w1 S importance of religion                        | Categ |
| 2    | S2RELGIMP  | s2relgimp:w2 S importance of religion                        | Categ |
| 3    | S3RELGIMP  | s3relgimp:w3 S importance of religion                        | Categ |
| 4    | S4RELGIMP  | s4relgimp:w4 S importance of religion                        | Categ |
| 5    | S5RELGIMP  | s5relgimp:w5 S importance of religion                        | Categ |

### Descriptive Statistics

| Variable   | N     | Mean | Std Dev | Minimum | Maximum |
|------------|-------|------|---------|---------|---------|
| R3SOCWK    | 14446 | 0.42 | 0.49    | 0.00    | 1.00    |
| R4SOCWK    | 13826 | 0.45 | 0.50    | 0.00    | 1.00    |
| R5SOCWK    | 15781 | 0.45 | 0.50    | 0.00    | 1.00    |
| S3SOCWK    | 9864  | 0.43 | 0.50    | 0.00    | 1.00    |
| S4SOCWK    | 9176  | 0.47 | 0.50    | 0.00    | 1.00    |
| S5SOCWK    | 6900  | 0.43 | 0.50    | 0.00    | 1.00    |
| R3SOCACT_M | 14446 | 5.89 | 3.49    | 1.00    | 9.00    |
| R4SOCACT_M | 13826 | 5.69 | 3.47    | 1.00    | 9.00    |
| R5SOCACT_M | 15781 | 5.72 | 3.49    | 1.00    | 9.00    |
| S3SOCACT_M | 9864  | 5.77 | 3.51    | 1.00    | 9.00    |
| S4SOCACT_M | 9176  | 5.53 | 3.46    | 1.00    | 9.00    |
| S5SOCACT_M | 6900  | 5.81 | 3.49    | 1.00    | 9.00    |
| R3RELGWK   | 14444 | 0.36 | 0.48    | 0.00    | 1.00    |
| R4RELGWK   | 13845 | 0.39 | 0.49    | 0.00    | 1.00    |

|           |       |      |      |      |      |
|-----------|-------|------|------|------|------|
| R5RELGWK  | 15772 | 0.32 | 0.47 | 0.00 | 1.00 |
| S3RELGWK  | 9863  | 0.36 | 0.48 | 0.00 | 1.00 |
| S4RELGWK  | 9179  | 0.38 | 0.49 | 0.00 | 1.00 |
| S5RELGWK  | 6898  | 0.35 | 0.48 | 0.00 | 1.00 |
| R1RELGIMP | 14098 | 1.34 | 0.54 | 1.00 | 3.00 |
| R2RELGIMP | 12343 | 1.27 | 0.50 | 1.00 | 3.00 |
| R3RELGIMP | 14423 | 1.33 | 0.54 | 1.00 | 3.00 |
| R4RELGIMP | 13835 | 1.34 | 0.54 | 1.00 | 3.00 |
| R5RELGIMP | 15763 | 1.36 | 0.56 | 1.00 | 3.00 |
| S1RELGIMP | 9949  | 1.35 | 0.55 | 1.00 | 3.00 |
| S2RELGIMP | 8576  | 1.28 | 0.51 | 1.00 | 3.00 |
| S3RELGIMP | 9852  | 1.34 | 0.55 | 1.00 | 3.00 |
| S4RELGIMP | 9177  | 1.35 | 0.55 | 1.00 | 3.00 |
| S5RELGIMP | 6895  | 1.33 | 0.54 | 1.00 | 3.00 |

### Categorical Variable Codes

|                               |            |            |            |
|-------------------------------|------------|------------|------------|
| Value-----                    | R3SOCWK    | R4SOCWK    | R5SOCWK    |
| .d:DK                         | 2          | 1          | 1          |
| .m:Missing                    |            | 23         |            |
| .p:Proxy interview, not asked | 1275       | 929        | 1328       |
| .r:Refuse                     |            |            | 4          |
| 0.No                          | 8425       | 7647       | 8740       |
| 1.Yes                         | 6021       | 6179       | 7041       |
| Value-----                    | S3SOCWK    | S4SOCWK    | S5SOCWK    |
| .d:DK                         | 2          | 1          |            |
| .m:Missing                    |            | 5          |            |
| .p:Proxy interview, not asked | 726        | 470        | 560        |
| .r:Refuse                     |            |            | 1          |
| .u:Unmar                      | 4782       | 4847       | 5227       |
| .v:SP NR                      | 349        | 280        | 501        |
| 0.No                          | 5609       | 4874       | 3915       |
| 1.Yes                         | 4255       | 4302       | 2985       |
| Value-----                    | R3SOCACT_M | R4SOCACT_M | R5SOCACT_M |
| .d:DK                         | 2          | 1          | 1          |
| .m:Missing                    |            | 23         |            |
| .p:Proxy interview, not asked | 1275       | 929        | 1328       |
| .r:Refuse                     |            |            | 4          |
| 1.Almost every day            | 3496       | 3270       | 3788       |
| 2.4 or more times a week      | 663        | 799        | 877        |
| 3.2 or 3 times a week         | 961        | 1119       | 1181       |
| 4.Once a week                 | 697        | 762        | 984        |
| 5.4 or more times a month     | 204        | 229        | 211        |
| 6.2 or 3 times a month        | 247        | 352        | 318        |
| 7.Once a month                | 420        | 726        | 725        |
| 8.Almost Never, sporadic      | 691        |            |            |
| 9.Never                       | 7067       | 6569       | 7697       |
| Value-----                    | S3SOCACT_M | S4SOCACT_M | S5SOCACT_M |
| .d:DK                         | 2          | 1          |            |
| .m:Missing                    |            | 5          |            |
| .p:Proxy interview, not asked | 726        | 470        | 560        |
| .r:Refuse                     |            |            | 1          |
| .u:Unmar                      | 4782       | 4847       | 5227       |
| .v:SP NR                      | 349        | 280        | 501        |
| 1.Almost every day            | 2499       | 2241       | 1629       |
| 2.4 or more times a week      | 452        | 566        | 390        |
| 3.2 or 3 times a week         | 684        | 786        | 471        |
| 4.Once a week                 | 482        | 550        | 405        |
| 5.4 or more times a month     | 138        | 159        | 90         |
| 6.2 or 3 times a month        | 181        | 256        | 136        |
| 7.Once a month                | 298        | 523        | 312        |
| 8.Almost Never, sporadic      | 482        |            |            |
| 9.Never                       | 4648       | 4095       | 3467       |



| Value-----                    |  | R3RELGWK | R4RELGWK | R5RELGWK |
|-------------------------------|--|----------|----------|----------|
| .d:DK                         |  |          | 1        | 7        |
| .p:Proxy interview, not asked |  | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 4        | 4        | 7        |
| 0.No                          |  | 9191     | 8477     | 10711    |
| 1.Yes                         |  | 5253     | 5368     | 5061     |

| Value-----                    |  | S3RELGWK | S4RELGWK | S5RELGWK |
|-------------------------------|--|----------|----------|----------|
| .d:DK                         |  |          | 1        | 1        |
| .p:Proxy interview, not asked |  | 726      | 470      | 560      |
| .r:Refuse                     |  | 3        | 2        | 2        |
| .u:Unmar                      |  | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 349      | 280      | 501      |
| 0.No                          |  | 6326     | 5655     | 4499     |
| 1.Yes                         |  | 3537     | 3524     | 2399     |

| Value-----                    | R1RELGIMP | R2RELGIMP | R3RELGIMP | R4RELGIMP | R5RELGIMP |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         | 27        | 13        | 8         | 4         | 15        |
| .m:Missing                    |           | 163       |           |           |           |
| .p:Proxy interview, not asked | 1032      | 1178      | 1275      | 929       | 1328      |
| .r:Refuse                     | 29        | 7         | 17        | 11        | 8         |
| 1.very important              | 9853      | 9404      | 10222     | 9673      | 10722     |
| 2.somewhat important          | 3748      | 2590      | 3672      | 3679      | 4377      |
| 3.not important               | 497       | 349       | 529       | 483       | 664       |

| Value-----                    | S1RELGIMP | S2RELGIMP | S3RELGIMP | S4RELGIMP | S5RELGIMP |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         | 17        | 10        | 5         | 2         | 4         |
| .m:Missing                    |           | 151       |           |           |           |
| .p:Proxy interview, not asked | 660       | 821       | 726       | 470       | 560       |
| .r:Refuse                     | 22        | 6         | 9         | 3         | 2         |
| .u:Unmar                      | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      | 333       | 131       | 349       | 280       | 501       |
| 1.very important              | 6777      | 6446      | 6882      | 6311      | 4871      |
| 2.somewhat important          | 2819      | 1869      | 2600      | 2534      | 1767      |
| 3.not important               | 353       | 261       | 370       | 332       | 257       |

## How Constructed

RwSOCACT\_M indicates the frequency of participating in social activities including the following: 'Caring for a sick or disabled adult', 'Caring for children under 12 years old', 'Work(ing) as a volunteer or help with a non-profit organization without pay or compensation', 'Attend(ing) a lecture, seminar or class', and 'Attend(ing) a sport or social club'. The frequency is coded as: 1.almost every day, 2.four or more times per week, 3.two or three times a week, 4.once a week, 5.four or more times a month, 6.two or three times a month, 7.once a month, 8.almost never/sporadic, or 9.never.

RwSOCWK indicates whether the respondent participates weekly in these social activities. A code of 1 indicates the respondent participates in any of these activities at least once a week, that is RwSOCACT\_M is either almost every day, once a week, two or three times a week, four or more times a week, or four or more times per month. Otherwise, RwSOCWK is assigned a code of 0 indicating no weekly contact.

RwRELGWK indicates whether the respondent participates weekly in 'activities organized by the church'. A code of 1 indicates the respondent participates one or more times per week, while a code of 0 indicates the respondent participates less than weekly.

RwSOCACT\_M, RwSOCWK, and RwRELGWK are assigned special missing values .d or .r if respondents don't know or refuse to answer, respectively. The variables are also assigned special missing value .p, for proxy interviews. The variables are assigned special missing value .m for the cases that failed to complete Section D. In addition, RwSOCACT\_M is assigned special missing value .i to indicate inconsistent frequency, if the respondent reports contact with relatives and friends more than 21 times per week or more than 81 times per month (that is more than 3 times per day). RwSOCACT\_M, RwSOCWK, and RwRELGWK are set to plain missing (.) for respondents who did not respond to the current wave.

SwSOCACT\_M, SwSOCWK, and SwRELGWK are the respective social and religious activities variables for the respondent's spouse or partner. SwSOCACT\_M, SwSOCWK, and SwRELGWK are taken from the Wave 'w' spouse's value for RwSOCACT\_M, RwSOCWK, and RwRELGWK. In addition to the special missing codes used in RwSOCACT\_M, RwSOCWK, and RwRELGWK, if the respondent is not designated as coupled in the current wave and assumed to

be single, a special missing value of .u is used. If the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

The social activity information was derived from the 'Use of Time' battery included in Section D (Control and Health Services). This battery was included starting in Wave 3. In Wave 3, there is a code to indicate that the respondent did activities sporadically in the past year. Starting in Wave 4, this code is no longer present.

## Differences with the RAND HRS/Harmonized HRS

The Harmonized HRS includes RwsOCWK, which indicates whether the respondent participates in weekly social activities, and is comparable to RwsOCWK in the Harmonized MHAS. The Harmonized HRS also includes RwsOCMN, which indicates whether the respondent participates in monthly social activities, while the Harmonized MHAS includes RwsOACT\_M indicating the frequency of participating in social activities.

The HRS includes doing activities with grandchildren or other children, while the MHAS includes caring for children under 12 years old. The HRS includes doing volunteer work with children or young people, and doing any other volunteer or charity work, while the MHAS includes only volunteer work or supporting an organization without pay or reward. The HRS includes attending an education or training course, while the MHAS includes attending a training course, lecture or class. The HRS includes going to a sport/social/other club and attending meetings of non-religious organizations, while the MHAS includes only attending a sporting or social club. Despite this slight differences, the variables contain largely comparable activities.

The Harmonized HRS includes RwsRELGWK, which indicates whether the respondent participates in weekly religious services, and is comparable to RwsRELGWK in the Harmonized MHAS. The Harmonized HRS also includes RwsOCRELG\_H, which indicates the frequency the respondent attends religious services, and RwsRELGIMP, which indicates how important religion is to the respondent.

## MHAS Variables Used

|          |   |
|----------|---|
| Wave 1:  |   |
| A39      | importance of religion                                  |
| Wave 2:  |   |
| A36      | importance of religion                                  |
| Wave 3:  |   |
| A35B_12  | Frequency of respondent participating in church activit |
| A36_12   | Importance of religion                                  |
| AA39_12  | Importance of religion to respondent                    |
| D34A1_12 | Does respondent care for a sick/disabled adult          |
| D34A2_12 | Respondent's frequency caring for a sick/disabled adult |
| D34A3_12 | Respondent's time period caring for a sick/disabled adu |
| D34B1_12 | Does respondent care for children under 12 years old    |
| D34B2_12 | Respondent's frequency caring for children under 12 yea |
| D34B3_12 | Respondent's time period caring for children under 12 y |
| D34C1_12 | Does respondent volunteer/support an organization witho |
| D34C2_12 | Number of times respondent volunteers                   |
| D34C3_12 | Respondent's time period used to report volunteering    |
| D34D1_12 | Does respondent attend a training course                |
| D34D2_12 | Number of times respondent has attended a training cour |
| D34D3_12 | Respondent's time period to report a training course    |
| D34E1_12 | Does respondent attend a sporting/social club           |
| D34E2_12 | Number of times respondent has attended a sporting/soci |
| D34E3_12 | Respondent's time period used to report sporting/social |
| Wave 4:  |   |
| A36_15   | Importance of religion in respondent's life             |
| AA39_15  | Importance of religion to respondent                    |
| D34A1_15 | Does respondent care for a sick or disabled adult       |
| D34A2_15 | Respondent's frequency caring for a sick or disabled ad |
| D34A3_15 | Respondent's time period caring for a sick or disabled  |
| D34B1_15 | Does respondent care for children under 12 years old    |

|          |   |
|----------|---|
| D34B2_15 | Respondent's frequency caring for children under 12 yea |
| D34B3_15 | Respondent's time period caring for children under 12 y |
| D34C1_15 | Does respondent volunteer/help with a non- profit organ |
| D34C2_15 | Number of times respondent volunteers/helps             |
| D34C3_15 | Respondent's time period volunteering/helping           |
| D34D1_15 | Does respondent assist a lecture, seminar or class      |
| D34D2_15 | Number of times respondent has assisted a lecture, semi |
| D34D3_15 | Respondent's time period assisting a lecture, seminar o |
| D34E1_15 | Does respondent assisting a sport or social club        |
| D34E2_15 | Number of times respondent has assisted a sport or soci |
| D34E3_15 | Respondent's time period assisting a sport or social cl |

## Wave 5:

|          |   |
|----------|---|
| A36_18   | Importance of religion in R's life                      |
| AA39_18  | Importance of religion to R                             |
| D34A1_18 | Does R care for a sick or disabled adult                |
| D34A2_18 | R's frequency caring for a sick or disabled adult       |
| D34A3_18 | R's time period caring for a sick or disabled adult     |
| D34B1_18 | Does R care for children under 12 years old             |
| D34B2_18 | R's frequency caring for children under 12 years old    |
| D34B3_18 | R's time period caring for children under 12 years old  |
| D34C1_18 | Does R volunteer/help with a non-profit organization wi |
| D34C2_18 | Number of times R volunteers/helps                      |
| D34C3_18 | R's time period volunteering/helping                    |
| D34D1_18 | Does R assist a lecture, seminar or class               |
| D34D2_18 | Number of times R has assisted a lecture, seminar or cl |
| D34D3_18 | R's time period assisting a lecture, seminar or class   |
| D34E1_18 | Does R assisting a sport or social club                 |
| D34E2_18 | Number of times R has assisted a sport or social club   |
| D34E3_18 | R's time period assisting a sport or social club        |

### Financial Transfer from Children

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | H1FCANY  | h1fcany: w1 Any transfer from children               | Categ |
| 2    | H2FCANY  | h2fcany: w2 Any transfer from children               | Categ |
| 3    | H3FCANY  | h3fcany: w3 Any transfer from children               | Categ |
| 4    | H4FCANY  | h4fcany: w4 Any transfer from children               | Categ |
| 5    | H5FCANY  | h5fcany: w5 Any transfer from children               | Categ |
| 1    | H1FCAMT  | h1fcamt: w1 Financial transfer from children         | Cont  |
| 2    | H2FCAMT  | h2fcamt: w2 Financial transfer from children         | Cont  |
| 3    | H3FCAMT  | h3fcamt: w3 Financial transfer from children         | Cont  |
| 4    | H4FCAMT  | h4fcamt: w4 Financial transfer from children         | Cont  |
| 1    | H1FCFLAG | h1fcflag: w1 Financial transfer from children - Flag | Categ |
| 2    | H2FCFLAG | h2fcflag: w2 Financial transfer from children - Flag | Categ |
| 3    | H3FCFLAG | h3fcflag: w3 Financial transfer from children - Flag | Categ |
| 4    | H4FCFLAG | h4fcflag: w4 Financial transfer from children - Flag | Categ |

### Descriptive Statistics

| Variable | N     | Mean     | Std Dev   | Minimum | Maximum     |
|----------|-------|----------|-----------|---------|-------------|
| H1FCANY  | 15513 | 0.33     | 0.47      | 0.00    | 1.00        |
| H2FCANY  | 14028 | 0.43     | 0.49      | 0.00    | 1.00        |
| H3FCANY  | 15668 | 0.33     | 0.47      | 0.00    | 1.00        |
| H4FCANY  | 14883 | 0.39     | 0.49      | 0.00    | 1.00        |
| H5FCANY  | 17048 | 0.32     | 0.47      | 0.00    | 1.00        |
| H1FCAMT  | 15513 | 23481.06 | 158530.73 | 0.00    | 8542800.00  |
| H2FCAMT  | 14028 | 33280.46 | 282892.18 | 0.00    | 26699024.00 |
| H3FCAMT  | 15314 | 7102.34  | 27010.39  | 0.00    | 1704000.00  |
| H4FCAMT  | 14593 | 9135.04  | 26314.98  | 0.00    | 1396321.88  |
| H1FCFLAG | 14931 | 0.05     | 0.22      | 0.00    | 1.00        |
| H2FCFLAG | 13450 | 0.06     | 0.24      | 0.00    | 1.00        |
| H3FCFLAG | 14570 | 0.04     | 0.19      | 0.00    | 1.00        |
| H4FCFLAG | 13964 | 0.02     | 0.14      | 0.00    | 1.00        |

### Categorical Variable Codes

| Value----- | H1FCANY | H2FCANY | H3FCANY | H4FCANY | H5FCANY |
|------------|---------|---------|---------|---------|---------|
| .d:DK      | 125     | 6       | 18      | 9       | 37      |
| .m:Missing | 11165   | 12800   | 11116   | 34      | 20      |
| .r:Refuse  | 36      | 5       | 37      | 19      | 9       |
| 0.No       | 10408   | 8011    | 10441   | 9143    | 11643   |
| 1.Yes      | 5105    | 6017    | 5227    | 5740    | 5405    |

| Value-----     | H1FCFLAG | H2FCFLAG | H3FCFLAG | H4FCFLAG |
|----------------|----------|----------|----------|----------|
| .d:DK          |          |          | 2        | 4        |
| .k:no children | 743      | 589      | 744      | 629      |
| .m:Missing     | 11165    | 12800    | 11521    | 347      |
| .r:Refuse      |          |          | 2        |          |
| 0.Not imputed  | 14186    | 12592    | 14052    | 13697    |
| 1.Imputed      | 745      | 858      | 518      | 267      |

### How Constructed

HwFCANY indicates whether the respondent and spouse received any financial help from their children/grandchildren in the last two years. Respondents are asked: "In the last two years, have you (or your spouse) received financial or in-kind support from any of your children and/or grandchildren (and those of your spouse)?" HwFCANY is coded as 0 if the respondent and spouse did not receive any financial

support from their children/grandchildren or if they have no living children, and is coded as 1 if they did receive financial support from their children/grandchildren.

HwFCAMT is the total imputed financial transfer amount the respondent and spouse received from their children/grandchildren in the last year. The monetary or in-kind transfers were reported in weekly, monthly, yearly, or as a unique transfer. At Waves 1 and 2, the amounts were imputed and calculated to a total amount in a 2-year period by the MHAS team and the imputed variables are available in the study website. Please see the 2001 ([here](#)) and 2003 ([here](#)) for more details on the imputation method used, variables imputed, and covariates included. At these early waves HwFCAMT represents the sum of the imputed amounts (up to seven different children/grandchildren) divided by 2, so that a yearly value is expressed.

At Waves 3 and 4, the amounts were imputed and calculated to a monthly amount by the MHAS team and the imputed variables are available in the study website. Please see the 2012 ([here](#)) and 2015 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included. In Waves 3 and 4, HwFCAMT represents the sum of the imputed amounts (up to seven different children/grandchildren) multiplied by 12, so that a yearly value is expressed. HwFCAMT is assigned a value of 0 if the respondent and spouse do not have any living children.

HwFCFLAG indicates whether the derived variable, HwFCAMT, used at least one imputed amount or not. HwFCFLAG is coded as 0 if none of the values were imputed and is coded as 1 if at least one of the values were imputed. HwFCFLAG is assigned special missing value .k if the respondent and spouse have no living children.

HwFCANY, HwFCAMT and HwFCFLAG are assigned special missing values .d or .r, if they answered don't know or refused, respectively. The variables are also assigned special missing value .m for the cases that failed to complete Section G (Help and Children). The variables are set to plain missing (.) for respondents who did not respond to the current wave.

## Cross Wave Differences in MHAS

As part of MHAS imputation process at Waves 1 and 2, the imputed values of financial help from children/grandchildren were left as two-year amounts. In Waves 3 and 4, the imputed values of financial help from children/grandchildren were transformed to monthly amounts during the imputation process. HwFCAMT accounts for this change and includes the values of financial help from children/grandchildren at a one-year level in all waves.

In Wave 5, the respondent is not asked the amount of monetary transfers from their children/grandchildren.

## Differences with the RAND HRS/Harmonized HRS

Comparable variables are not available in the RAND HRS, but are available in the RAND Family data.

The MHAS imputed all the variables used as components of RwFCAMT and RwTCFLAG. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), and 2015 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

## MHAS Variables Used

### Wave 1:

|          |                                |
|----------|--------------------------------|
| G17      | help from children             |
| G18      | help from children 5,000       |
| G18_1IMP | if imputed value               |
| G18_2IMP | if imputed value               |
| G18_3IMP | if imputed value               |
| G18_4IMP | if imputed value               |
| G18_5IMP | if imputed value               |
| G18_6IMP | if imputed value               |
| G18_7IMP | if imputed value               |
| IMAM18_1 | family help income_1 (imputed) |

|              |   |
|--------------|---|
| IMAM18_2     | family help income_2 (imputed)                          |
| IMAM18_3     | family help income_3 (imputed)                          |
| IMAM18_4     | family help income_4 (imputed)                          |
| IMAM18_5     | family help income_5 (imputed)                          |
| IMAM18_6     | family help income_6 (imputed)                          |
| IMAM18_7     | family help income_7 (imputed)                          |
| Wave 2:      |   |
| G17          | received financial support from (grand)children         |
| G17_1IMP     | if imputed value  |
| G17_2IMP     | if imputed value  |
| G17_3IMP     | if imputed value  |
| G17_4IMP     | if imputed value  |
| G17_5IMP     | if imputed value  |
| G17_6IMP     | if imputed value  |
| G17_7IMP     | if imputed value  |
| IMAM17_1     | family help income_1 (imputed)                          |
| IMAM17_2     | family help income_2 (imputed)                          |
| IMAM17_3     | family help income_3 (imputed)                          |
| IMAM17_4     | family help income_4 (imputed)                          |
| IMAM17_5     | family help income_5 (imputed)                          |
| IMAM17_6     | family help income_6 (imputed)                          |
| IMAM17_7     | family help income_7 (imputed)                          |
| Wave 3:      |   |
| G17_12       | Last 2 years:Respondent received financial assistance f |
| G19_1_IMP_12 |   |
| G19_2_IMP_12 |   |
| G19_3_IMP_12 |   |
| G19_4_IMP_12 |   |
| G19_5_IMP_12 |   |
| G19_6_IMP_12 |   |
| G19_7_IMP_12 |   |
| IMAMG19_1_12 | MonthlyReceived 1                                       |
| IMAMG19_2_12 | MonthlyReceived 2                                       |
| IMAMG19_3_12 | MonthlyReceived 3                                       |
| IMAMG19_4_12 | MonthlyReceived 4                                       |
| IMAMG19_5_12 | MonthlyReceived 5                                       |
| IMAMG19_6_12 | MonthlyReceived 6                                       |
| IMAMG19_7_12 | MonthlyReceived 7                                       |
| Wave 4:      |   |
| G17_15       | Last 2 years:Respondent received financial assistance f |
| G19_1_IMP_15 | Family help income_1 (Flag if imputed value)            |
| G19_2_IMP_15 | Family help income_2 (Flag if imputed value)            |
| G19_3_IMP_15 | Family help income_3 (Flag if imputed value)            |
| G19_4_IMP_15 | Family help income_4 (Flag if imputed value)            |
| G19_5_IMP_15 | Family help income_5 (Flag if imputed value)            |
| G19_6_IMP_15 | Family help income_6 (Flag if imputed value)            |
| G19_7_IMP_15 | Family help income_7 (Flag if imputed value)            |
| IMAMG19_1_15 | Family help income_1 (imputed)                          |
| IMAMG19_2_15 | Family help income_2 (imputed)                          |
| IMAMG19_3_15 | Family help income_3 (imputed)                          |
| IMAMG19_4_15 | Family help income_4 (imputed)                          |
| IMAMG19_5_15 | Family help income_5 (imputed)                          |
| IMAMG19_6_15 | Family help income_6 (imputed)                          |
| IMAMG19_7_15 | Family help income_7 (imputed)                          |
| Wave 5:      |   |
| G17_18       | Last 2 years:R/spouse received financial assistance fro |

### Financial Transfer to Children

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | H1TCANY  | h1tcany: w1 Any transfer to children               | Categ |
| 2    | H2TCANY  | h2tcany: w2 Any transfer to children               | Categ |
| 3    | H3TCANY  | h3tcany: w3 Any transfer to children               | Categ |
| 4    | H4TCANY  | h4tcany: w4 Any transfer to children               | Categ |
| 5    | H5TCANY  | h5tcany: w5 Any transfer to children               | Categ |
| 1    | H1TCAMT  | h1tcamt: w1 Financial transfer to children         | Cont  |
| 2    | H2TCAMT  | h2tcamt: w2 Financial transfer to children         | Cont  |
| 3    | H3TCAMT  | h3tcamt: w3 Financial transfer to children         | Cont  |
| 4    | H4TCAMT  | h4tcamt: w4 Financial transfer to children         | Cont  |
| 1    | H1TCFLAG | h1tcflag: w1 Financial transfer to children - Flag | Categ |
| 2    | H2TCFLAG | h2tcflag: w2 Financial transfer to children - Flag | Categ |
| 3    | H3TCFLAG | h3tcflag: w3 Financial transfer to children - Flag | Categ |
| 4    | H4TCFLAG | h4tcflag: w4 Financial transfer to children - Flag | Categ |

### Descriptive Statistics

| Variable | N     | Mean     | Std Dev   | Minimum | Maximum     |
|----------|-------|----------|-----------|---------|-------------|
| H1TCANY  | 15544 | 0.16     | 0.37      | 0.00    | 1.00        |
| H2TCANY  | 14039 | 0.17     | 0.38      | 0.00    | 1.00        |
| H3TCANY  | 15676 | 0.22     | 0.42      | 0.00    | 1.00        |
| H4TCANY  | 14883 | 0.24     | 0.42      | 0.00    | 1.00        |
| H5TCANY  | 17050 | 0.22     | 0.42      | 0.00    | 1.00        |
| H1TCAMT  | 15544 | 14304.41 | 131919.23 | 0.00    | 8736000.00  |
| H2TCAMT  | 14039 | 19906.13 | 446587.10 | 0.00    | 31200000.00 |
| H3TCAMT  | 15620 | 6201.96  | 27803.34  | 0.00    | 1260000.00  |
| H4TCAMT  | 14856 | 6076.07  | 29575.55  | 0.00    | 1000000.00  |
| H1TCFLAG | 14931 | 0.03     | 0.17      | 0.00    | 1.00        |
| H2TCFLAG | 13450 | 0.02     | 0.15      | 0.00    | 1.00        |
| H3TCFLAG | 14876 | 0.03     | 0.16      | 0.00    | 1.00        |
| H4TCFLAG | 14227 | 0.02     | 0.13      | 0.00    | 1.00        |

### Categorical Variable Codes

| Value-----     | H1TCANY  | H2TCANY  | H3TCANY  | H4TCANY  | H5TCANY |
|----------------|----------|----------|----------|----------|---------|
| .d:DK          | 89       |          | 17       | 12       | 21      |
| .m:Missing     | 11165    | 12800    | 11116    | 33       | 20      |
| .r:Refuse      | 41       |          | 30       | 18       | 23      |
| 0.No           | 13066    | 11629    | 12200    | 11367    | 13259   |
| 1.Yes          | 2478     | 2410     | 3476     | 3516     | 3791    |
| Value-----     | H1TCFLAG | H2TCFLAG | H3TCFLAG | H4TCFLAG |         |
| .d:DK          |          |          | 2        | 4        |         |
| .k:no children | 743      | 589      | 744      | 629      |         |
| .m:Missing     | 11165    | 12800    | 11214    | 86       |         |
| .r:Refuse      |          |          | 3        |          |         |
| 0.Not imputed  | 14466    | 13120    | 14486    | 13972    |         |
| 1.Imputed      | 465      | 330      | 390      | 255      |         |

### How Constructed

HwTCANY indicates whether the respondent and spouse gave any financial help to their children/grandchildren in the last two years. Respondents are asked: "In the last two years, have you (or your spouse) given financial or in-kind support to any of your children and/or grandchildren (and to those of your spouse)? Include help for education; exclude housing or shared meals and other basic daily

expenses". HwTCANY is coded as 0 if the respondent and spouse did not give any financial help to their children or if they have no living children, and is coded as 1 if they gave some financial help to their children.

HwTCAMT is the total imputed financial transfer amount the respondent and spouse gave to their children/grandchildren in the last year. The monetary or in-kind transfers were reported in weekly, monthly, yearly, or as a unique transfer. At Waves 1 and 2, the amounts were imputed and calculated to a total amount in a 2-year period by the MHAS team and the imputed variables are available in the study website. Please see the 2001 [\(here\)](#) and 2003 [\(here\)](#) for more details on the imputation method used, variables imputed, and covariates included. At these early waves HwTCAMT represents the sum of the imputed amounts (up to seven different children/grandchildren) divided by 2, so that a yearly value is expressed.

At Waves 3 and 4, the amounts were imputed and calculated to a monthly amount by the MHAS team and the imputed variables are available in the study website. Please see the 2012 [\(here\)](#) and 2015 [\(here\)](#) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included. In Waves 3 and 4, HwTCAMT represents the sum of the imputed amounts (up to seven different children/grandchildren) multiplied by 12, so that a yearly value is expressed. HwTCAMT is assigned a value of 0 if they have no living children.

HwTCFLAG indicates whether the derived variable, HwTCAMT, used at least one imputed amount or not. HwTCFLAG is coded as 0 if none of the values were imputed and is coded as 1 if at least one of the values were imputed. HwTCFLAG is assigned special missing value .k if the respondent and spouse had no living children.

HwTCANY, HwTCAMT and HwTCFLAG are assigned special missing values .d or .r, if they answered don't know or refused, respectively. The variables are also assigned special missing .m for the cases that failed to complete Section G (Help and Children). The variables are set to plain missing (.) for respondents who did not respond to the current wave.

## Cross Wave Differences in MHAS

As part of MHAS imputation process at Waves 1 and 2, the imputed values of financial help to children/grandchildren were left as two-year amounts. In Waves 3 and 4, the imputed values of financial help to children/grandchildren were transformed to monthly amounts during the imputation process. HwTCAMT accounts for this change and includes the values of financial help to children/grandchildren at a one-year level in all waves.

In Wave 5, the respondent is not asked the amount of monetary transfers to their children/grandchildren.

## Differences with the RAND HRS/Harmonized HRS

Comparable variables are not available in the RAND HRS, but are available in the RAND Family data.

The MHAS imputed all the variables used as components of RwTCAMT and RwTCFLAG. Please see the 2001 [\(here\)](#), 2003 [\(here\)](#), 2012 [\(here\)](#), and 2015 [\(here\)](#) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

## MHAS Variables Used

### Wave 1:

|          |                                |
|----------|--------------------------------|
| G17      | help from children             |
| G18      | help from children 5,000       |
| G18_1IMP | if imputed value               |
| G18_2IMP | if imputed value               |
| G18_3IMP | if imputed value               |
| G18_4IMP | if imputed value               |
| G18_5IMP | if imputed value               |
| G18_6IMP | if imputed value               |
| G18_7IMP | if imputed value               |
| IMAM18_1 | family help income_1 (imputed) |



|             |   |
|-------------|---|
| IMAM18_2    | family help income_2 (imputed)                          |
| IMAM18_3    | family help income_3 (imputed)                          |
| IMAM18_4    | family help income_4 (imputed)                          |
| IMAM18_5    | family help income_5 (imputed)                          |
| IMAM18_6    | family help income_6 (imputed)                          |
| IMAM18_7    | family help income_7 (imputed)                          |
| Wave 2:     |   |
| G17         | received financial support from (grand)children         |
| G17_1IMP    | if imputed value  |
| G17_2IMP    | if imputed value  |
| G17_3IMP    | if imputed value  |
| G17_4IMP    | if imputed value  |
| G17_5IMP    | if imputed value  |
| G17_6IMP    | if imputed value  |
| G17_7IMP    | if imputed value  |
| IMAM17_1    | family help income_1 (imputed)                          |
| IMAM17_2    | family help income_2 (imputed)                          |
| IMAM17_3    | family help income_3 (imputed)                          |
| IMAM17_4    | family help income_4 (imputed)                          |
| IMAM17_5    | family help income_5 (imputed)                          |
| IMAM17_6    | family help income_6 (imputed)                          |
| IMAM17_7    | family help income_7 (imputed)                          |
| Wave 3:     |   |
| G7_12       | Last 2 years:Did respondent/spouse financially assist c |
| G8B1_IMP_12 |   |
| G8B2_IMP_12 |   |
| G8B3_IMP_12 |   |
| G8B4_IMP_12 |   |
| G8B5_IMP_12 |   |
| G8B6_IMP_12 |   |
| G8B7_IMP_12 |   |
| IMAMG8B1_12 |   |
| IMAMG8B2_12 |   |
| IMAMG8B3_12 |   |
| IMAMG8B4_12 |   |
| IMAMG8B5_12 |   |
| IMAMG8B6_12 |   |
| IMAMG8B7_12 |   |
| Wave 4:     |   |
| G7_15       | Last 2 years:Did respondent/spouse financially assist c |
| G8B1_IMP_15 | Financial assistance given_1 (Flag if imputed value)    |
| G8B2_IMP_15 | Financial assistance given_2 (Flag if imputed value)    |
| G8B3_IMP_15 | Financial assistance given_3 (Flag if imputed value)    |
| G8B4_IMP_15 | Financial assistance given_4 (Flag if imputed value)    |
| G8B5_IMP_15 | Financial assistance given_5 (Flag if imputed value)    |
| G8B6_IMP_15 | Financial assistance given_6 (Flag if imputed value)    |
| G8B7_IMP_15 | Financial assistance given_7 (Flag if imputed value)    |
| IMAMG8B1_15 | Financial assistance given_1 (imputed)                  |
| IMAMG8B2_15 | Financial assistance given_2 (imputed)                  |
| IMAMG8B3_15 | Financial assistance given_3 (imputed)                  |
| IMAMG8B4_15 | Financial assistance given_4 (imputed)                  |
| IMAMG8B5_15 | Financial assistance given_5 (imputed)                  |
| IMAMG8B6_15 | Financial assistance given_6 (imputed)                  |
| IMAMG8B7_15 | Financial assistance given_7 (imputed)                  |
| Wave 5:     |   |
| G7_18       | Last 2 years:Did respondent/spouse financially assist c |

|                                      |
|--------------------------------------|
| <b>Financial Transfer to Parents</b> |
|--------------------------------------|

| Wave | Variable | Label   | Type  |
|------|----------|---|-------|
| 1    | R1TPANY  | r1tpany: w1 R Any transfer to parents               | Categ |
| 2    | R2TPANY  | r2tpany: w2 R Any transfer to parents               | Categ |
| 3    | R3TPANY  | r3tpany: w3 R Any transfer to parents               | Categ |
| 4    | R4TPANY  | r4tpany: w4 R Any transfer to parents               | Categ |
| 5    | R5TPANY  | r5tpany: w5 R Any transfer to parents               | Categ |
| 1    | S1TPANY  | s1tpany: w1 S Any transfer to parents               | Categ |
| 2    | S2TPANY  | s2tpany: w2 S Any transfer to parents               | Categ |
| 3    | S3TPANY  | s3tpany: w3 S Any transfer to parents               | Categ |
| 4    | S4TPANY  | s4tpany: w4 S Any transfer to parents               | Categ |
| 5    | S5TPANY  | s5tpany: w5 S Any transfer to parents               | Categ |
| 1    | R1TPAMT  | r1tpamt: w1 R Financial transfer amount to parents  | Cont  |
| 2    | R2TPAMT  | r2tpamt: w2 R Financial transfer amount to parents  | Cont  |
| 3    | R3TPAMT  | r3tpamt: w3 R Financial transfer amount to parents  | Cont  |
| 4    | R4TPAMT  | r4tpamt: w4 R Financial transfer amount to parents  | Cont  |
| 1    | S1TPAMT  | s1tpamt: w1 S Financial transfer amount to parents  | Cont  |
| 2    | S2TPAMT  | s2tpamt: w2 S Financial transfer amount to parents  | Cont  |
| 3    | S3TPAMT  | s3tpamt: w3 S Financial transfer amount to parents  | Cont  |
| 4    | S4TPAMT  | s4tpamt: w4 S Financial transfer amount to parents  | Cont  |
| 2    | R2TPFLAG | r2tpflag: w2 R Financial transfer to parents - Flag | Categ |
| 3    | R3TPFLAG | r3tpflag: w3 R Financial transfer to parents - Flag | Categ |
| 4    | R4TPFLAG | r4tpflag: w4 R Financial transfer to parents - Flag | Categ |
| 2    | S2TPFLAG | s2tpflag: w2 S Financial transfer to parents - Flag | Categ |
| 3    | S3TPFLAG | s3tpflag: w3 S Financial transfer to parents - Flag | Categ |
| 4    | S4TPFLAG | s4tpflag: w4 S Financial transfer to parents - Flag | Categ |

### Descriptive Statistics

| Variable | N     | Mean   | Std Dev | Minimum | Maximum   |
|----------|-------|--------|---------|---------|-----------|
| R1TPANY  | 14108 | 0.16   | 0.36    | 0.00    | 1.00      |
| R2TPANY  | 12500 | 0.14   | 0.35    | 0.00    | 1.00      |
| R3TPANY  | 7685  | 0.26   | 0.44    | 0.00    | 1.00      |
| R4TPANY  | 14439 | 0.13   | 0.33    | 0.00    | 1.00      |
| R5TPANY  | 16635 | 0.16   | 0.37    | 0.00    | 1.00      |
| S1TPANY  | 9965  | 0.18   | 0.38    | 0.00    | 1.00      |
| S2TPANY  | 8734  | 0.17   | 0.37    | 0.00    | 1.00      |
| S3TPANY  | 5837  | 0.26   | 0.44    | 0.00    | 1.00      |
| S4TPANY  | 9441  | 0.15   | 0.35    | 0.00    | 1.00      |
| S5TPANY  | 7297  | 0.12   | 0.32    | 0.00    | 1.00      |
| R1TPAMT  | 13810 | 432.06 | 7570.31 | 0.00    | 560251.50 |
| R2TPAMT  | 12502 | 678.07 | 5714.56 | 0.00    | 400000.00 |
| R3TPAMT  | 15723 | 554.68 | 3593.30 | 0.00    | 240000.00 |
| R4TPAMT  | 14763 | 596.14 | 3496.98 | 0.00    | 110000.00 |
| S1TPAMT  | 9724  | 524.56 | 8889.89 | 0.00    | 560251.50 |
| S2TPAMT  | 8735  | 813.71 | 6587.81 | 0.00    | 400000.00 |
| S3TPAMT  | 10592 | 600.90 | 3974.80 | 0.00    | 240000.00 |
| S4TPAMT  | 9650  | 630.90 | 3498.33 | 0.00    | 110000.00 |
| R2TPFLAG | 3799  | 0.12   | 0.33    | 0.00    | 1.00      |
| R3TPFLAG | 6298  | 0.06   | 0.25    | 0.00    | 1.00      |

|          |      |      |      |      |      |
|----------|------|------|------|------|------|
| R4TPFLAG | 4065 | 0.04 | 0.21 | 0.00 | 1.00 |
| S2TPFLAG | 3080 | 0.12 | 0.33 | 0.00 | 1.00 |
| S3TPFLAG | 4682 | 0.06 | 0.24 | 0.00 | 1.00 |
| S4TPFLAG | 3008 | 0.04 | 0.20 | 0.00 | 1.00 |

## Categorical Variable Codes

| Value-----                    | R1TPANY | R2TPANY | R3TPANY | R4TPANY | R5TPANY |
|-------------------------------|---------|---------|---------|---------|---------|
| .d:DK                         | 8       | 4       | 162     | 152     | 144     |
| .m:Missing                    | 33      | 22      | 6796    | 36      | 16      |
| .p:Proxy interview, not asked | 1032    | 1178    | 1071    | 145     | 296     |
| .r:Refuse                     | 5       |         | 9       | 7       | 23      |
| 0.No                          | 11918   | 10707   | 5671    | 12620   | 13951   |
| 1.Yes                         | 2190    | 1793    | 2014    | 1819    | 2684    |

| Value-----                    | S1TPANY | S2TPANY | S3TPANY | S4TPANY | S5TPANY |
|-------------------------------|---------|---------|---------|---------|---------|
| .d:DK                         | 7       | 3       | 116     | 99      | 41      |
| .m:Missing                    | 12      | 6       | 4075    | 8       | 2       |
| .p:Proxy interview, not asked | 660     | 821     | 558     | 100     | 112     |
| .r:Refuse                     | 4       |         | 6       | 4       | 9       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                      | 333     | 131     | 349     | 280     | 501     |
| 0.No                          | 8174    | 7257    | 4292    | 8045    | 6437    |
| 1.Yes                         | 1791    | 1477    | 1545    | 1396    | 860     |

| Value-----                    | R2TPFLAG | R3TPFLAG | R4TPFLAG |
|-------------------------------|----------|----------|----------|
| .m:Missing                    | 24       |          | 16       |
| .n:no parents                 | 8703     | 9425     | 10698    |
| .p:Proxy interview, not asked | 1178     |          |          |
| 0.Not imputed                 | 3336     | 5891     | 3884     |
| 1.Imputed                     | 463      | 407      | 181      |

| Value-----                    | S2TPFLAG | S3TPFLAG | S4TPFLAG |
|-------------------------------|----------|----------|----------|
| .m:Missing                    | 8        |          | 2        |
| .n:no parents                 | 5655     | 5910     | 6642     |
| .p:Proxy interview, not asked | 821      |          |          |
| .u:Unmar                      | 4009     | 4782     | 4847     |
| .v:SP NR                      | 131      | 349      | 280      |
| 0.Not imputed                 | 2705     | 4391     | 2881     |
| 1.Imputed                     | 375      | 291      | 127      |

## How Constructed

RwTPANY indicates whether the respondent and spouse gave any financial help to their parents in the last two years. Respondents are asked: "In the last 2 years, have you (and/or your spouse) given financial assistance to your parent(s)?" RwTPANY is coded as 0 if the respondent and spouse did not give any financial help to their parents or if they have no living parents, and is coded as 1 if they have given financial help to their parents.

In Wave 1, RwTPAMT is financial transfer amount the respondent and spouse gave to their parents in the last two years, divided by two. In Waves 2 through 4, the monetary or in-kind transfers were imputed by the MHAS team and the imputed variables are available in the study website. Please see the 2001 ([here](#)), 2003 ([here](#)), 2012 ([here](#)), and 2015 ([here](#)) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included. RwTPAMT is given a value of 0 if the respondent has no living parents.

RwTPFLAG indicates whether the derived variable, RwTPAMT, used an imputed amount or not. RwTPFLAG is coded as 0 if the amount was not imputed, and is coded as 1 if the amount was imputed. RwTPFLAG is assigned special missing .n if the respondent has no living parents. RwTPFLAG is only available starting in Wave 2.

RwTPANY, RwTPAMT and RwTPFLAG are assigned special missing values .d or .r, if they answered don't know or refused, respectively. The variables are also assigned special missing value .m for the cases that failed to complete Section F (Parents and Help to Parents). The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwTPANY, SwTPAMT and SwTPFLAG are taken from the Wave 'w' spouse's value for RwTPANY, RwTPAMT and RwTPFLAG. In addition to the special missing codes used in RwTPANY, RwTPAMT and RwTPFLAG, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

In Wave 1, RwTPAMT is the financial transfer amount the respondent and spouse gave to their parents in the last two years, divided by two.

In Waves 2 through 4, the monetary or in-kind transfers were imputed by the MHAS team and the imputed variables are available in the study website.

In Wave 5, the respondent is not asked the amount of monetary transfers to their parents.

## Differences with the RAND HRS/Harmonized HRS

Comparable variables are not available in the RAND HRS, but are available in the RAND Family data.

The MHAS imputed all the variables used as components of RwTPAMT and RwTPFLAG. Please see the 2001 [\(here\)](#), 2003 [\(here\)](#), 2012 [\(here\)](#), and 2015 [\(here\)](#) MHAS documents titled "Imputation of Non-Response on Economic Variables in the MHAS", available in the study website [www.MHASweb.org](http://www.MHASweb.org) for more details on the imputation method used, variables imputed, and covariates included.

## MHAS Variables Used

|            |   |
|------------|---|
| Wave 1:    |   |
| F34        | economic help to parents                                |
| F35        | help to parents 5,000                                   |
| F36        | amount help to parents                                  |
| Wave 2:    |   |
| F40        | financial assistance to parents in last two years       |
| F40IMP     | if imputed value  |
| IMAMF40    | economic help to parents (imputed)                      |
| Wave 3:    |   |
| F40_12     | Last 2 years:Did respondent/spouse provide...assistance |
| F41_IMP_12 |   |
| IMAMF41_12 | total expense for assisting parent(s)                   |
| Wave 4:    |   |
| F40_15     | In the last 2 years: Has respondent (and/or spouse) giv |
| F41_IMP_15 | Economic Help to Parents (Flag if imputed value)        |
| IMAMF41_15 | Economic Help to Parents (imputed)                      |
| Wave 5:    |   |
| F40_18     | In the last 2 years: Has R (and/or spouse) given any fi |

**Section H: Employment History**

Currently Working for Pay

| Wave | Variable | Label                                  | Type  |
|------|----------|--|-------|
| 1    | R1WORK   | r1work: w1 R Currently working for pay | Categ |
| 2    | R2WORK   | r2work: w2 R Currently working for pay | Categ |
| 3    | R3WORK   | r3work: w3 R Currently working for pay | Categ |
| 4    | R4WORK   | r4work: w4 R Currently working for pay | Categ |
| 5    | R5WORK   | r5work: w5 R Currently working for pay | Categ |
| 1    | S1WORK   | s1work: w1 S Currently working for pay | Categ |
| 2    | S2WORK   | s2work: w2 S Currently working for pay | Categ |
| 3    | S3WORK   | s3work: w3 S Currently working for pay | Categ |
| 4    | S4WORK   | s4work: w4 S Currently working for pay | Categ |
| 5    | S5WORK   | s5work: w5 S Currently working for pay | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1WORK   | 15094 | 0.44 | 0.50    | 0.00    | 1.00    |
| R2WORK   | 13652 | 0.42 | 0.49    | 0.00    | 1.00    |
| R3WORK   | 15712 | 0.36 | 0.48    | 0.00    | 1.00    |
| R4WORK   | 14679 | 0.38 | 0.49    | 0.00    | 1.00    |
| R5WORK   | 17067 | 0.41 | 0.49    | 0.00    | 1.00    |
| S1WORK   | 10601 | 0.48 | 0.50    | 0.00    | 1.00    |
| S2WORK   | 9537  | 0.46 | 0.50    | 0.00    | 1.00    |
| S3WORK   | 10586 | 0.40 | 0.49    | 0.00    | 1.00    |
| S4WORK   | 9594  | 0.42 | 0.49    | 0.00    | 1.00    |
| S5WORK   | 7443  | 0.36 | 0.48    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----            | R1WORK | R2WORK | R3WORK | R4WORK | R5WORK |
|-----------------------|--------|--------|--------|--------|--------|
| .d:DK                 | 21     | 17     | 3      | 53     | 7      |
| .m:Missing            | 42     | 29     |        | 40     | 18     |
| .r:Refuse             | 29     | 6      | 8      | 7      | 22     |
| 0.Not working for pay | 8426   | 7870   | 10027  | 9108   | 10016  |
| 1.Working for pay     | 6668   | 5782   | 5685   | 5571   | 7051   |
| Value-----            | S1WORK | S2WORK | S3WORK | S4WORK | S5WORK |
| .d:DK                 | 10     | 15     | 1      | 44     | 2      |
| .m:Missing            | 14     | 7      |        | 10     | 3      |
| .r:Refuse             | 23     | 5      | 5      | 4      | 13     |
| .u:Unmar              | 4205   | 4009   | 4782   | 4847   | 5227   |
| .v:SP NR              | 333    | 131    | 349    | 280    | 501    |
| 0.Not working for pay | 5550   | 5132   | 6379   | 5555   | 4778   |
| 1.Working for pay     | 5051   | 4405   | 4207   | 4039   | 2665   |

How Constructed

RwWORK indicates whether the respondent is working in the current wave. R1WORK is derived from the question: 'Last week did you... Worked, Did not work but you had a job, Looked for work, Were a student, Dedicated self to household chores, or Did not work?'. The 'Worked' and 'Did not work but had a job' answers were treated as currently 'Working for pay'. The rest of the answers were treated as 'Not working for pay'. Starting in Wave 2, RwWORK was derived from the question: 'Are you currently... Working, Looking for work, or Don't work'. The 'Looking for work' and 'Don't work' answers were treated as currently 'Not Working for pay'. RwWORK is coded as 0 if the respondent is not working and as 1 if the respondent is working. RwWORK is assigned special missing values .d or .r, if they answered don't know or refused, respectively. RwWORK is also assigned special missing value .m if the section was not completed. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwWORK is taken from the Wave 'w' spouse's value for RwWORK. In addition to the special missing codes used in RwWORK, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Cross Wave Differences in MHAS

The MHAS Employment Section changed between Wave 1, 2 and 3. First, the content of the section was revised and modified each wave. Second, the dynamics of the section (determined by the skip patterns) was modified depending on the type of interview: follow-up or new subject interviews, in particular for the 'Work History' and 'Principal Occupation' questions. Also, in Wave 1 respondents were asked 'Last week did you... Worked, Did not work but you had a job, Looked for work, Were a student, Dedicated self to household chores, or Did not work?'. After Wave 2, respondents were asked 'Are you currently... Working, Looking for work, or Don't work'.

Differences with the RAND HRS/Harmonized HRS

The questions used from the MHAS to determine this harmonized variable are significantly different from the questions used to determine the RAND HRS variable.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| I1      | ever had a job  |
| I2      | job without payment                                     |
| I5      | worked previous week                                    |
| Wave 2: |   |
| I16     | work status   |
| I3      | ever worked without pay                                 |
| Wave 3: |   |
| I16_12  | Current work status                                     |
| I3_12   | Have you ever/since last time we spoke, worked without  |
| Wave 4: |   |
| I16_15  | Current labor force status                              |
| I3_15   | Has respondent ever helped in a business, farm, or ranc |
| Wave 5: |   |
| I16_18  | Current labor force status                              |
| I3_18   | Has R ever helped in a business/farm/ranch without rece |

Whether Self-Employed

| Wave | Variable | Label                                | Type  |
|------|----------|--------------------------------------|-------|
| 1    | R1SLFEMP | r1slfemp: w1 R Whether Self-Employed | Categ |
| 2    | R2SLFEMP | r2slfemp: w2 R Whether Self-Employed | Categ |
| 3    | R3SLFEMP | r3slfemp: w3 R Whether Self-Employed | Categ |
| 4    | R4SLFEMP | r4slfemp: w4 R Whether Self-Employed | Categ |
| 5    | R5SLFEMP | r5slfemp: w5 R Whether Self-Employed | Categ |
| 1    | S1SLFEMP | s1slfemp: w1 S Whether Self-Employed | Categ |
| 2    | S2SLFEMP | s2slfemp: w2 S Whether Self-Employed | Categ |
| 3    | S3SLFEMP | s3slfemp: w3 S Whether Self-Employed | Categ |
| 4    | S4SLFEMP | s4slfemp: w4 S Whether Self-Employed | Categ |
| 5    | S5SLFEMP | s5slfemp: w5 S Whether Self-Employed | Categ |

Descriptive Statistics

| Variable | N    | Mean | Std Dev | Minimum | Maximum |
|----------|------|------|---------|---------|---------|
| R1SLFEMP | 6668 | 0.33 | 0.47    | 0.00    | 1.00    |
| R2SLFEMP | 1702 | 0.40 | 0.49    | 0.00    | 1.00    |
| R3SLFEMP | 5682 | 0.36 | 0.48    | 0.00    | 1.00    |
| R4SLFEMP | 5519 | 0.45 | 0.50    | 0.00    | 1.00    |
| R5SLFEMP | 7016 | 0.39 | 0.49    | 0.00    | 1.00    |
| S1SLFEMP | 5045 | 0.33 | 0.47    | 0.00    | 1.00    |
| S2SLFEMP | 1299 | 0.38 | 0.49    | 0.00    | 1.00    |
| S3SLFEMP | 4205 | 0.35 | 0.48    | 0.00    | 1.00    |
| S4SLFEMP | 3993 | 0.46 | 0.50    | 0.00    | 1.00    |
| S5SLFEMP | 2648 | 0.47 | 0.50    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----          | R1SLFEMP | R2SLFEMP | R3SLFEMP | R4SLFEMP | R5SLFEMP |
|---------------------|----------|----------|----------|----------|----------|
| .d:DK               | 17       | 30       | 4        | 103      | 9        |
| .m:Missing          | 42       | 29       |          | 40       | 18       |
| .r:Refuse           | 32       | 7        | 10       | 9        | 55       |
| .s:Skip             |          | 4066     |          |          |          |
| .w:not working      | 8427     | 7870     | 10027    | 9108     | 10016    |
| 0.Not self-employed | 4471     | 1018     | 3643     | 3016     | 4301     |
| 1.Self-employed     | 2197     | 684      | 2039     | 2503     | 2715     |
| Value-----          | S1SLFEMP | S2SLFEMP | S3SLFEMP | S4SLFEMP | S5SLFEMP |
| .d:DK               | 12       | 27       | 2        | 89       | 4        |
| .m:Missing          | 14       | 7        |          | 10       | 3        |
| .r:Refuse           | 27       | 6        | 6        | 5        | 28       |
| .s:Skip             |          | 3093     |          |          |          |
| .u:Unmar            | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR            | 333      | 131      | 349      | 280      | 501      |
| .w:not working      | 5550     | 5132     | 6379     | 5555     | 4778     |
| 0.Not self-employed | 3400     | 801      | 2722     | 2171     | 1408     |
| 1.Self-employed     | 1645     | 498      | 1483     | 1822     | 1240     |

How Constructed

RwSLFEMP indicates whether the respondent is self-employed in the current wave. RwSLFEMP is derived from the question: 'In your current primary job you are a(n)...' with the possible responses: boss, self-employed, employee in a co-op, employee with fixed salary, employee working on commission, non-family worker without pay, family worker without pay'. RwSLFEMP is coded as 0 if the respondent is not self-employed and coded as 1 if the respondent is self-employed. RwSLFEMP is set to .w, if the respondent is currently not working (that is if RWORK is 0). In Wave 2, RwSLFEMP is also set to special missing value .s to indicate that the 'Principal Occupation' questions are not available because they were skipped for



follow-up interviews. RWSLFEMP is also assigned special missing values .d or .r, if they answered don't know or refused, respectively. Other missing responses are assigned special missing value .m. RWSLFEMP is set to plain missing (.) for respondents who did not respond to the current wave.

SWSLFEMP is taken from the Wave 'w' spouse's value for RWSLFEMP. In addition to the special missing codes used in RWSLFEMP, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

The MHAS Employment Section changed between Wave 1, 2 and 3. The wording of the questions was modified depending on the type of interview: follow-up or new subject interviews, in particular for the 'Work History' questions. Also the dynamics of the section, determined by the skip patterns, was modified across these waves. In Wave 2, the 'Work History' and 'Principal Occupation' questions are only asked to new subjects. The number of questions included in the section also changed after Wave 2.

## Differences with the RAND HRS/Harmonized HRS

The questions used from the MHAS to determine this harmonized variable are significantly different from the questions used to determine the RAND HRS variable.

## MHAS Variables Used

|         |   |
|---------|---|
| Wave 1: |   |
| I1      | ever had a job  |
| I10     | main position   |
| I2      | job without payment                                     |
| Wave 2: |   |
| I16     | work status   |
| I19     | current work roles similar to past roles                |
| I21     | type of employee  |
| I7      | type of employee  |
| Wave 3: |   |
| I16_12  | Current work status                                     |
| I19_12  | Current work activities are similar to activities over  |
| I21_12  | Current job: position at work                           |
| I3_12   | Have you ever/since last time we spoke, worked without  |
| I7_12   | In this main job, what has been (was) your position at  |
| Wave 4: |   |
| I16_15  | Current labor force status                              |
| I19_15  | Current occupation: Are activities at respondent's cure |
| I21_15  | Respondent's position in his/her current primary job    |
| I3_15   | Has respondent ever helped in a business, farm, or ranc |
| I7_15   | Respondent's position in this primary job               |
| Wave 5: |   |
| I16_18  | Current labor force status                              |
| I19_18  | Are activities at R's current job like those done in ma |
| I21_18  | R's position in his/her current primary job             |
| I3_18   | Has R ever helped in a business/farm/ranch without rece |
| I7_18   | R's position in this primary job                        |

Labor Force Status

| Wave | Variable | Label                             | Type  |
|------|----------|-----------------------------------|-------|
| 1    | R1LBRF_M | r1lbrf_m: w1 R Labor force status | Categ |
| 2    | R2LBRF_M | r2lbrf_m: w2 R Labor force status | Categ |
| 3    | R3LBRF_M | r3lbrf_m: w3 R Labor force status | Categ |
| 4    | R4LBRF_M | r4lbrf_m: w4 R Labor force status | Categ |
| 5    | R5LBRF_M | r5lbrf_m: w5 R Labor force status | Categ |
| 1    | S1LBRF_M | s1lbrf_m: w1 S Labor force status | Categ |
| 2    | S2LBRF_M | s2lbrf_m: w2 S Labor force status | Categ |
| 3    | S3LBRF_M | s3lbrf_m: w3 S Labor force status | Categ |
| 4    | S4LBRF_M | s4lbrf_m: w4 S Labor force status | Categ |
| 5    | S5LBRF_M | s5lbrf_m: w5 S Labor force status | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1LBRF_M | 15094 | 3.42 | 2.18    | 1.00    | 6.00    |
| R2LBRF_M | 13659 | 2.99 | 1.84    | 1.00    | 5.00    |
| R3LBRF_M | 15715 | 3.17 | 1.78    | 1.00    | 5.00    |
| R4LBRF_M | 14701 | 3.06 | 1.76    | 1.00    | 5.00    |
| R5LBRF_M | 17068 | 2.96 | 1.78    | 1.00    | 5.00    |
| S1LBRF_M | 10601 | 3.28 | 2.21    | 1.00    | 6.00    |
| S2LBRF_M | 9543  | 2.85 | 1.84    | 1.00    | 5.00    |
| S3LBRF_M | 10588 | 3.05 | 1.80    | 1.00    | 5.00    |
| S4LBRF_M | 9611  | 2.92 | 1.78    | 1.00    | 5.00    |
| S5LBRF_M | 7444  | 3.11 | 1.74    | 1.00    | 5.00    |

Categorical Variable Codes

| Value-----                        | R1LBRF_M | R2LBRF_M | R3LBRF_M | R4LBRF_M | R5LBRF_M |
|-----------------------------------|----------|----------|----------|----------|----------|
| .d:DK                             | 21       | 11       | 3        | 32       | 7        |
| .m:Missing                        | 42       | 29       |          | 40       | 18       |
| .r:Refuse                         | 29       | 5        | 5        | 6        | 21       |
| 1.Working                         | 6667     | 5782     | 5685     | 5571     | 7051     |
| 2.Unemployed                      |          | 284      | 255      | 206      | 289      |
| 3.Retired                         |          | 1305     | 1869     | 2106     | 2133     |
| 4.Disabled                        |          | 835      | 1555     | 1473     | 1517     |
| 5.Not in labor force              | 5551     | 5453     | 6351     | 5345     | 6078     |
| 6.Unemployed, Retired or Disabled | 2876     |          |          |          |          |
| Value-----                        | S1LBRF_M | S2LBRF_M | S3LBRF_M | S4LBRF_M | S5LBRF_M |
| .d:DK                             | 10       | 10       | 1        | 27       | 2        |
| .m:Missing                        | 14       | 7        |          | 10       | 3        |
| .r:Refuse                         | 23       | 4        | 3        | 4        | 12       |
| .u:Unmar                          | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                          | 333      | 131      | 349      | 280      | 501      |
| 1.Working                         | 5051     | 4405     | 4207     | 4039     | 2665     |
| 2.Unemployed                      |          | 212      | 184      | 139      | 128      |
| 3.Retired                         |          | 878      | 1204     | 1305     | 1146     |
| 4.Disabled                        |          | 516      | 900      | 789      | 708      |
| 5.Not in labor force              | 3529     | 3532     | 4093     | 3339     | 2797     |
| 6.Unemployed, Retired or Disabled | 2021     |          |          |          |          |

How Constructed

RwLBRF\_M is an MHAS specific variable; it summarizes the labor force status for the respondent at each wave indicating one of the following statuses: 1 working, 2 unemployed, 3 retired, 4 disabled, 5 not in the labor force. In Wave 1, RwLBRF\_M includes an additional status that indicates if the respondent is

either unemployed, retired, or disabled. This extra category had to be created because the questions included in Wave 1, did not allow to distinguish between categories 2, 3 and 4.

RwLBRF\_M is derived from different questions that are available each wave. These questions allow us to establish if the respondent has ever worked and if they are currently working. An additional question also indicates the main reason the respondent is not currently working. The following are the different reasons for not currently working: dedicated to household chores, retired, old age, sick or temporarily disabled, unable to work for rest of life, and doesn't have customers or can't find work. The reason for not working question is not included in Wave 1.

If the respondent indicates they are currently working, RwLBRF\_M is set to working. If the respondent indicates they are currently looking for work, or does not work but 'doesn't have customers or can't find work', RwLBRF\_M is set to unemployed. If the respondent indicates they are retired, regardless if they are currently working, RwLBRF\_M is set to retired. If the respondent is 'sick or temporarily disabled' or 'unable to work for rest of life', RwLBRF\_M is set to disabled. Otherwise, RwLBRF\_M is set to "not in the labor force".

RwLBRF\_M is assigned special missing values .d or .r, if they answered don't know or refused, respectively. RwLBRF\_M is also assigned the special missing value .m if the section was not completed. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwLBRF\_M summarizes the labor force status for the respondent's spouse or partner. SwLBRF\_M is taken from the Wave 'w' spouse's value for RwLBRF\_M. In addition to the special missing codes used in RwLBRF\_M, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

The MHAS Employment Section changed between Wave 1, 2 and 3. The wording of the questions was modified depending on the type of interview: follow-up or new subject interviews, in particular for the 'Work History' questions. Also the dynamics of the section, determined by the skip patterns, was modified across these waves. In Wave 2, the 'Work History' and 'Principal Occupation' questions are only asked to new subjects. The number of questions included in the section also changed after Wave 2.

In particular, the reason for not working question is not included in Wave 1. This affects the derivation of RwLBRF\_M and an additional category had to be created because it was not possible to distinguish between unemployed, retired and disabled.

## Differences with the RAND HRS/Harmonized HRS

The questions used from the MHAS to determine this harmonized variable are significantly different from the questions used to determine the RAND HRS variable. Also, the reason for not working question is not asked if the respondent reported they are currently working.

## MHAS Variables Used

|          |  |
|----------|--|
| Wave 1:  |  |
| I1       | ever had a job   |
| I2       | job without payment                                    |
| I5       | worked previous week                                   |
| Wave 2:  |  |
| I16      | work status  |
| I26      | main reason for not working                            |
| I3       | ever worked without pay                                |
| Wave 3:  |  |
| I16_12   | Current work status                                    |
| I26_2_12 | Reason for not working - retired                       |
| I26_4_12 | Reason for not working - sick or temporary disability  |
| I26_5_12 | Reason for not working - unable to work rest of life   |
| I26_6_12 | Reason for not working - no customers or work          |
| I3_12    | Have you ever/since last time we spoke, worked without |
| Wave 4:  |  |

|          |   |
|----------|---|
| I16_15   | Current labor force status                              |
| I26_2_15 | Reason respondent does not work: Retired                |
| I26_4_15 | Reason respondent does not work: Sick or temporarily di |
| I26_5_15 | Reason respondent does not work: Unable to work for res |
| I26_6_15 | Reason respondent does not work: Doesn't have customers |
| I3_15    | Has respondent ever helped in a business, farm, or ranc |

Wave 5:

|          |   |
|----------|---|
| I16_18   | Current labor force status                              |
| I26_2_18 | Reason R does not work: Retired                         |
| I26_4_18 | Reason R does not work: Sick or temporarily disabled    |
| I26_5_18 | Reason R does not work: Unable to work for rest of life |
| I26_6_18 | Reason R does not work: Doesn't have customers or can't |
| I3_18    | Has R ever helped in a business/farm/ranch without rece |

In the Labor Force

| Wave | Variable | Label                             | Type  |
|------|----------|-----------------------------------|-------|
| 2    | R2INLBRF | r2inlbrf: w2 R In the Labor Force | Categ |
| 3    | R3INLBRF | r3inlbrf: w3 R In the Labor Force | Categ |
| 4    | R4INLBRF | r4inlbrf: w4 R In the Labor Force | Categ |
| 5    | R5INLBRF | r5inlbrf: w5 R In the Labor Force | Categ |
| 2    | S2INLBRF | s2inlbrf: w2 S In the Labor Force | Categ |
| 3    | S3INLBRF | s3inlbrf: w3 S In the Labor Force | Categ |
| 4    | S4INLBRF | s4inlbrf: w4 S In the Labor Force | Categ |
| 5    | S5INLBRF | s5inlbrf: w5 S In the Labor Force | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R2INLBRF | 13659 | 0.44 | 0.50    | 0.00    | 1.00    |
| R3INLBRF | 15715 | 0.38 | 0.48    | 0.00    | 1.00    |
| R4INLBRF | 14701 | 0.39 | 0.49    | 0.00    | 1.00    |
| R5INLBRF | 17068 | 0.43 | 0.50    | 0.00    | 1.00    |
| S2INLBRF | 9543  | 0.48 | 0.50    | 0.00    | 1.00    |
| S3INLBRF | 10588 | 0.41 | 0.49    | 0.00    | 1.00    |
| S4INLBRF | 9611  | 0.43 | 0.50    | 0.00    | 1.00    |
| S5INLBRF | 7444  | 0.38 | 0.48    | 0.00    | 1.00    |

Categorical Variable Codes

| Value----- | R2INLBRF | R3INLBRF | R4INLBRF | R5INLBRF |
|------------|----------|----------|----------|----------|
| .d:DK      | 11       | 3        | 32       | 6        |
| .m:Missing | 29       |          | 40       | 18       |
| .r:Refuse  | 5        | 5        | 6        | 22       |
| 0.No       | 7593     | 9775     | 8924     | 9728     |
| 1.Yes      | 6066     | 5940     | 5777     | 7340     |

| Value----- | S2INLBRF | S3INLBRF | S4INLBRF | S5INLBRF |
|------------|----------|----------|----------|----------|
| .d:DK      | 10       | 1        | 27       | 2        |
| .m:Missing | 7        |          | 10       | 3        |
| .r:Refuse  | 4        | 3        | 4        | 12       |
| .u:Unmar   | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR   | 131      | 349      | 280      | 501      |
| 0.No       | 4926     | 6197     | 5433     | 4651     |
| 1.Yes      | 4617     | 4391     | 4178     | 2793     |

How Constructed

RwINLBRF is an indicator for whether the respondent is considered part of the labor force as defined by the Bureau of Labor Statistics (BLS). Briefly, this definition considers those who are working for pay or those who are not working but actively seeking work as part of the labor force.

RwINLBRF is derived using the summary of the labor force status variable for the respondent at each wave, RwLBRF\_M. RwLBRF\_M indicates one of the following statuses: 1 working, 2 unemployed, 3 retired, 4 disabled, 5 not in the labor force. Since the questions included in Wave 1 did not allow to distinguish between categories unemployed, retired, and disabled status, RwINLBRF is only available starting Wave 2. Reflecting the BLS definition of being in the labor force, RwINLBRF is categorized as 1 if the respondent is working or unemployed and RwINLBRF is categorized as 2 for all other labor force statuses.

RwINLBRF is assigned special missing values .d or .r, if they answered don't know or refused, respectively. RwINLBRF is also assigned the special missing value .m if the section was not completed. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SWINLBRF is an indicator for whether the respondent's spouse is considered part of the labor force. SWINLBRF is taken from the Wave 'w' spouse's value for RWINLBRF. In addition to the special missing codes used in RWINLBRF, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

The MHAS Employment Section changed between Wave 1, 2 and 3. The wording of the questions was modified depending on the type of interview: follow-up or new subject interviews, in particular for the 'Work History' questions. Also the dynamics of the section, determined by the skip patterns, was modified across these waves. In Wave 2, the 'Work History' and 'Principal Occupation' questions are only asked to new subjects. The number of questions included in the section also changed after Wave 2.

Since the questions included in Wave 1 did not allow us to distinguish between the categories of unemployed, retired, and disabled statuses, RWINLBRF is only available starting in Wave 2.

## Differences with the RAND HRS/Harmonized HRS

The questions used from the MHAS to determine this harmonized variable are significantly different from the questions used to determine the RAND HRS variable.

## MHAS Variables Used

### Wave 2:

|     |                             |
|-----|-----------------------------|
| I16 | work status                 |
| I26 | main reason for not working |
| I3  | ever worked without pay     |

### Wave 3:

|          |  |
|----------|--|
| I16_12   | Current work status                                    |
| I26_2_12 | Reason for not working - retired                       |
| I26_4_12 | Reason for not working - sick or temporary disability  |
| I26_5_12 | Reason for not working - unable to work rest of life   |
| I26_6_12 | Reason for not working - no customers or work          |
| I26_8_12 | Reason for not working - RF                            |
| I26_9_12 | Reason for not working - DK                            |
| I3_12    | Have you ever/since last time we spoke, worked without |

### Wave 4:

|          |   |
|----------|---|
| I16_15   | Current labor force status                              |
| I26_2_15 | Reason respondent does not work: Retired                |
| I26_4_15 | Reason respondent does not work: Sick or temporarily di |
| I26_5_15 | Reason respondent does not work: Unable to work for res |
| I26_6_15 | Reason respondent does not work: Doesn't have customers |
| I26_8_15 | Reason respondent does not work: RF                     |
| I26_9_15 | Reason respondent does not work: DK                     |
| I3_15    | Has respondent ever helped in a business, farm, or ranc |

### Wave 5:

|          |   |
|----------|---|
| I16_18   | Current labor force status                              |
| I26_2_18 | Reason R does not work: Retired                         |
| I26_4_18 | Reason R does not work: Sick or temporarily disabled    |
| I26_5_18 | Reason R does not work: Unable to work for rest of life |
| I26_6_18 | Reason R does not work: Doesn't have customers or can't |
| I26_8_18 | Reason R does not work: RF                              |
| I26_9_18 | Reason R does not work: DK                              |
| I3_18    | Has R ever helped in a business/farm/ranch without rece |

Unemployment Status

| Wave | Variable | Label                    | Type  |
|------|----------|--------------------------|-------|
| 1    | R1UNEMP  | r1unemp: w1 R Unemployed | Categ |
| 2    | R2UNEMP  | r2unemp: w2 R Unemployed | Categ |
| 3    | R3UNEMP  | r3unemp: w3 R Unemployed | Categ |
| 4    | R4UNEMP  | r4unemp: w4 R Unemployed | Categ |
| 5    | R5UNEMP  | r5unemp: w5 R Unemployed | Categ |
| 1    | S1UNEMP  | s1unemp: w1 S Unemployed | Categ |
| 2    | S2UNEMP  | s2unemp: w2 S Unemployed | Categ |
| 3    | S3UNEMP  | s3unemp: w3 S Unemployed | Categ |
| 4    | S4UNEMP  | s4unemp: w4 S Unemployed | Categ |
| 5    | S5UNEMP  | s5unemp: w5 S Unemployed | Categ |

Descriptive Statistics

| Variable | N    | Mean | Std Dev | Minimum | Maximum |
|----------|------|------|---------|---------|---------|
| R1UNEMP  | 6728 | 0.01 | 0.09    | 0.00    | 1.00    |
| R2UNEMP  | 6104 | 0.05 | 0.22    | 0.00    | 1.00    |
| R3UNEMP  | 5982 | 0.05 | 0.22    | 0.00    | 1.00    |
| R4UNEMP  | 5808 | 0.04 | 0.20    | 0.00    | 1.00    |
| R5UNEMP  | 7386 | 0.05 | 0.21    | 0.00    | 1.00    |
| S1UNEMP  | 5094 | 0.01 | 0.09    | 0.00    | 1.00    |
| S2UNEMP  | 4643 | 0.05 | 0.22    | 0.00    | 1.00    |
| S3UNEMP  | 4421 | 0.05 | 0.21    | 0.00    | 1.00    |
| S4UNEMP  | 4200 | 0.04 | 0.19    | 0.00    | 1.00    |
| S5UNEMP  | 2809 | 0.05 | 0.22    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----                  | R1UNEMP | R2UNEMP | R3UNEMP | R4UNEMP | R5UNEMP |
|-----------------------------|---------|---------|---------|---------|---------|
| .d:DK                       | 21      | 11      | 3       | 32      | 7       |
| .m:Missing                  | 42      | 29      |         | 40      | 18      |
| .r:Refuse                   | 29      | 5       | 5       | 6       | 21      |
| .x:Not working/never worked | 8366    | 7555    | 9733    | 8893    | 9682    |
| 0.No                        | 6668    | 5782    | 5685    | 5571    | 7051    |
| 1.Yes                       | 60      | 322     | 297     | 237     | 335     |

| Value-----                  | S1UNEMP | S2UNEMP | S3UNEMP | S4UNEMP | S5UNEMP |
|-----------------------------|---------|---------|---------|---------|---------|
| .d:DK                       | 10      | 10      | 1       | 27      | 2       |
| .m:Missing                  | 14      | 7       |         | 10      | 3       |
| .r:Refuse                   | 23      | 4       | 3       | 4       | 12      |
| .u:Unmar                    | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR                    | 333     | 131     | 349     | 280     | 501     |
| .x:Not working/never worked | 5507    | 4900    | 6167    | 5411    | 4635    |
| 0.No                        | 5051    | 4405    | 4207    | 4039    | 2665    |
| 1.Yes                       | 43      | 238     | 214     | 161     | 144     |

How Constructed

RwUNEMP indicates whether the respondent is considered unemployed, including the respondents that report they are not working but seeking work as unemployed. The derivation uses questions about current work status and reason for not working.

If the respondent reports they are currently 'looking for work', RwUNEMP is set to 'unemployed'. If the respondent indicates they 'do not work' and the reason for not working is 'doesn't have customers or can't find work', RwUNEMP is also set to unemployed. Otherwise, RwUNEMP is set to 0.

RwUNEMP is assigned special missing values .d or .r, if they answered don't know or refused, respectively. If the respondent is not working and the reason for not working isn't 'doesn't have customers or can't find work' or if they have never worked, RwUNEMP is also assigned special missing values .x. RwUNEMP is also assigned the special missing value .m if the section was not completed. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwUNEMP is taken from the Wave 'w' spouse's value for RwUNEMP. In addition to the special missing codes used in RwUNEMP, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

The MHAS Employment Section changed between Wave 1, 2 and 3. The wording of the questions was modified depending on the type of interview: follow-up or new subject interviews, in particular for the 'Work History' questions. Also the dynamics of the section, determined by the skip patterns, was modified across these waves. In Wave 2, the 'Work History' and 'Principal Occupation' questions are only asked to new subjects. The number of questions included in the section also changed after Wave 2.

In particular, the reason for not working question is not included in Wave 1. This affects the derivation of the RwlBRF\_M and an additional category had to be created because it was not possible to distinguish between unemployed, retired, and disabled. Also, in Wave 1 respondents were asked 'Last week did you... Worked, Did not work but you had a job, Looked for work, Were a student, Dedicated self to household chores, or Did not work?'. After Wave 2, respondents were asked 'Are you currently... Working, Looking for work, or Don't work'.

## Differences with the RAND HRS/Harmonized HRS

The questions used from the MHAS to determine this harmonized variable are significantly different from the questions used to determine the RAND HRS variable. Also different to the HRS, the reason for not working question is not asked if the respondent reported they are currently working.

## MHAS Variables Used

|          |   |
|----------|---|
| Wave 1:  |   |
| I1       | ever had a job  |
| I2       | job without payment                                     |
| I5       | worked previous week                                    |
| Wave 2:  |   |
| I16      | work status   |
| I26      | main reason for not working                             |
| I3       | ever worked without pay                                 |
| Wave 3:  |   |
| I16_12   | Current work status                                     |
| I26_6_12 | Reason for not working - no customers or work           |
| I3_12    | Have you ever/since last time we spoke, worked without  |
| Wave 4:  |   |
| I16_15   | Current labor force status                              |
| I26_6_15 | Reason respondent does not work: Doesn't have customers |
| I3_15    | Has respondent ever helped in a business, farm, or ranc |
| Wave 5:  |   |
| I16_18   | Current labor force status                              |
| I26_6_18 | Reason R does not work: Doesn't have customers or can't |
| I3_18    | Has R ever helped in a business/farm/ranch without rece |



## Retired Employment Status

| Wave | Variable | Label                                    | Type  |
|------|----------|--|-------|
| 2    | R2RETEMP | r2retemp: w2 R Retired employment status | Categ |
| 3    | R3RETEMP | r3retemp: w3 R Retired employment status | Categ |
| 4    | R4RETEMP | r4retemp: w4 R Retired employment status | Categ |
| 5    | R5RETEMP | r5retemp: w5 R Retired employment status | Categ |
| 2    | S2RETEMP | s2retemp: w2 S Retired employment status | Categ |
| 3    | S3RETEMP | s3retemp: w3 S Retired employment status | Categ |
| 4    | S4RETEMP | s4retemp: w4 S Retired employment status | Categ |
| 5    | S5RETEMP | s5retemp: w5 S Retired employment status | Categ |

### Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R2RETEMP | 13632 | 0.10 | 0.29    | 0.00    | 1.00    |
| R3RETEMP | 15714 | 0.15 | 0.41    | 0.00    | 2.00    |
| R4RETEMP | 14695 | 0.17 | 0.43    | 0.00    | 2.00    |
| R5RETEMP | 17068 | 0.15 | 0.42    | 0.00    | 2.00    |
| S2RETEMP | 9517  | 0.09 | 0.29    | 0.00    | 1.00    |
| S3RETEMP | 10587 | 0.14 | 0.39    | 0.00    | 2.00    |
| S4RETEMP | 9607  | 0.16 | 0.40    | 0.00    | 2.00    |
| S5RETEMP | 7444  | 0.19 | 0.45    | 0.00    | 2.00    |

### Categorical Variable Codes

| Value-----                 | R2RETEMP | R3RETEMP | R4RETEMP | R5RETEMP |
|----------------------------|----------|----------|----------|----------|
| .d:DK                      | 14       | 3        | 38       | 7        |
| .m:Missing                 | 52       |          | 40       | 18       |
| .r:Refuse                  | 6        | 6        | 6        | 21       |
| 0.Working                  | 12327    | 13736    | 12496    | 14830    |
| 1.Retired                  | 1305     | 1628     | 1891     | 1856     |
| 2.Retired and other status |          | 350      | 308      | 382      |

| Value-----                 | S2RETEMP | S3RETEMP | S4RETEMP | S5RETEMP |
|----------------------------|----------|----------|----------|----------|
| .d:DK                      | 12       | 1        | 31       | 2        |
| .m:Missing                 | 30       |          | 10       | 3        |
| .r:Refuse                  | 5        | 4        | 4        | 12       |
| .u:Unmar                   | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                   | 131      | 349      | 280      | 501      |
| 0.Working                  | 8639     | 9315     | 8252     | 6239     |
| 1.Retired                  | 878      | 1086     | 1204     | 1022     |
| 2.Retired and other status |          | 186      | 151      | 183      |

### How Constructed

RwRETEMP is derived from two different questions available only starting in Wave 2. Also, starting in Wave 3 the respondent can report a retired status alone or in addition to other statuses, such as disabled, doesn't have customers or can't find work, or dedicated to household chores. In Wave 1, RwRETEMP is only set to 1 if the respondent reports a retired status. Likewise in Wave 1, RwRETEMP is only set to 0 if no retirement status is reported at all. However, starting in Wave 2, RwRETEMP is set to 1 if the respondent reports only a retired status, to 2 if they report being retired in addition to other statuses, or to 0 if no retirement status is reported at all.

RwRETEMP is assigned special missing values .d or .r, if they answered don't know or refused, respectively. RwRETEMP is also assigned the special missing value .m if the section was not completed. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwRETEMP is taken from the Wave 'w' spouse's value for RwRETEMP. In addition to the special missing codes used in RwRETEMP, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

The MHAS Employment Section changed between Wave 1, 2 and 3. The wording of the questions was modified depending on the type of interview: follow-up or new subject interviews, in particular for the 'Work History' questions. Also the dynamics of the section, determined by the skip patterns, was modified across these waves. In Wave 2, the 'Work History' and 'Principal Occupation' questions are only asked to new subjects. The number of questions included in the section also changed after Wave 2.

In particular, the reason for not working question is not included in Wave 1. This affects the derivation of the RwLBRF\_M and an additional category had to be created because it was not possible to distinguish between unemployed, retired and disabled.

## Differences with the RAND HRS/Harmonized HRS

The questions used from the MHAS to determine this harmonized variable are significantly different from the questions used to determine the RAND HRS variable. Also different to the HRS, the reason for not working question is not asked if the respondent reported he/she is currently working.

## MHAS Variables Used

### Wave 2:

|     |                             |
|-----|-----------------------------|
| I16 | work status                 |
| I26 | main reason for not working |
| I3  | ever worked without pay     |

### Wave 3:

|          |  |
|----------|--|
| I16_12   | Current work status                                    |
| I26_1_12 | Reason for not working - dedicated to household chores |
| I26_2_12 | Reason for not working - retired                       |
| I26_3_12 | Reason for not working - old age                       |
| I26_4_12 | Reason for not working - sick or temporary disability  |
| I26_5_12 | Reason for not working - unable to work rest of life   |
| I26_6_12 | Reason for not working - no customers or work          |
| I26_7_12 | Reason for not working - other                         |
| I3_12    | Have you ever/since last time we spoke, worked without |

### Wave 4:

|          |   |
|----------|---|
| I16_15   | Current labor force status                              |
| I26_1_15 | Reason respondent does not work: Dedicated to household |
| I26_2_15 | Reason respondent does not work: Retired                |
| I26_3_15 | Reason respondent does not work: Old age                |
| I26_4_15 | Reason respondent does not work: Sick or temporarily di |
| I26_5_15 | Reason respondent does not work: Unable to work for res |
| I26_6_15 | Reason respondent does not work: Doesn't have customers |
| I26_7_15 | Reason respondent does not work: Other                  |
| I3_15    | Has respondent ever helped in a business, farm, or ranc |

### Wave 5:

|          |   |
|----------|---|
| I16_18   | Current labor force status                              |
| I26_1_18 | Reason R does not work: Dedicated to household chores   |
| I26_2_18 | Reason R does not work: Retired                         |
| I26_3_18 | Reason R does not work: Old age                         |
| I26_4_18 | Reason R does not work: Sick or temporarily disabled    |
| I26_5_18 | Reason R does not work: Unable to work for rest of life |
| I26_6_18 | Reason R does not work: Doesn't have customers or can't |
| I26_7_18 | Reason R does not work: Other                           |
| I3_18    | Has R ever helped in a business/farm/ranch without rece |

|                          |
|--------------------------|
| <b>Hours at Main Job</b> |
|--------------------------|

| Wave | Variable  | Label  | Type |
|------|-----------|--|------|
| 1    | R1JHOURSD | r1jhoursd: w1 R Hours/day worked at main job | Cont |
| 1    | S1JHOURSD | s1jhoursd: w1 S Hours/day worked at main job | Cont |
| 2    | R2JHOURS  | r2jhours: w2 R Hours/week worked at main job | Cont |
| 3    | R3JHOURS  | r3jhours: w3 R Hours/week worked at main job | Cont |
| 4    | R4JHOURS  | r4jhours: w4 R Hours/week worked at main job | Cont |
| 5    | R5JHOURS  | r5jhours: w5 R Hours/week worked at main job | Cont |
| 2    | S2JHOURS  | s2jhours: w2 S Hours/week worked at main job | Cont |
| 3    | S3JHOURS  | s3jhours: w3 S Hours/week worked at main job | Cont |
| 4    | S4JHOURS  | s4jhours: w4 S Hours/week worked at main job | Cont |
| 5    | S5JHOURS  | s5jhours: w5 S Hours/week worked at main job | Cont |

### Descriptive Statistics

| Variable  | N     | Mean  | Std Dev | Minimum | Maximum |
|-----------|-------|-------|---------|---------|---------|
| R1JHOURSD | 6590  | 8.13  | 2.98    | 1.00    | 24.00   |
| S1JHOURSD | 4990  | 8.30  | 2.96    | 1.00    | 24.00   |
| R2JHOURS  | 5782  | 44.03 | 20.29   | 1.00    | 99.00   |
| R3JHOURS  | 16771 | 14.91 | 24.25   | 0.00    | 168.00  |
| R4JHOURS  | 17613 | 13.31 | 22.86   | 0.00    | 168.00  |
| R5JHOURS  | 16718 | 18.71 | 25.85   | 0.00    | 168.00  |
| S2JHOURS  | 4405  | 45.32 | 19.96   | 1.00    | 99.00   |
| S3JHOURS  | 4180  | 45.27 | 20.78   | 0.00    | 168.00  |
| S4JHOURS  | 4234  | 41.21 | 22.25   | 0.00    | 168.00  |
| S5JHOURS  | 2638  | 43.74 | 21.07   | 0.00    | 168.00  |

### How Constructed

RwJHOURSD is the number of hours per day the respondent works in a normal day, and it ranges from 0 to 24. RwJHOURSD was only determined for Wave 1 using the following question: 'About how many hours do you work in a usual day?'. Respondents were not asked to provide the number of hours per day they worked each day in a normal week, but only to indicate a number of hours in one normal day as an average. RwJHOURSD is set to .w, if the respondent is currently not working (that is if RWORK is 0). RwJHOURSD is also assigned special missing values .d or .r, if they answered don't know or refused, respectively. Other missing responses are assigned special missing value .m. RwJHOURSD is set to plain missing (.) for respondents who did not respond to the current wave.

While in Wave 1 it was only possible to determine the number of hours in a normal day, after Wave 2, the question was changed indicating the number of hours per day, in a normal week, for each day of the week. Therefore, a second variable RwJHOURS was created to indicate the number of hours per week the respondents work.

RwJHOURS indicates the number of hours per week the respondent works in a normal week, at their main job, and it has possible values from 0 to 168. After Wave 2, Respondents were asked 'Normally, which days and how many hours do you spend at your primary job?'. Respondents are then asked to give a number of hours for each day of week. RwJHOURS is the sum of the number of hours for each day of the week the respondent reported normally working. RwJHOURS is set to .w, if the respondent is currently not working (that is if RWORK is 0). RwJHOURS is also assigned special missing values .d or .r, if they answered don't know or refused, respectively. Other missing responses are assigned special missing value .m. RwJHOURS is set to plain missing (.) for respondents who did not respond to the current wave.

SwJHOURS and SwJHOURSD are taken from the Wave 'w' spouse's value for RwJHOURS and RwJHOURSD. In addition to the special missing codes used in RwJHOURS and RwJHOURSD, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

The MHAS Employment Section changed between Wave 1, 2 and 3. The wording of the questions was modified depending on the type of interview: follow-up or new subject interviews, in particular for the 'Work History' questions. Also the dynamics of the section, determined by the skip patterns, was modified across these waves. In Wave 2, the 'Work History' and 'Principal Occupation' questions are only asked to new subjects. The number of questions included in the section also changed after Wave 2.

In Wave 1, respondents were only asked to indicate a number of hours in one normal day (as an average). After Wave 2, the question was changed and respondents were asked to indicate the number of hours per day, in a normal week, for each day of the week. Therefore, two different variables were created, RwJHOURSD and RwJHOURS, to indicate the number of hours per day or per week (respectively) the respondents work.

## Differences with the RAND HRS/Harmonized HRS

In the HRS, hours worked per week was collocated at all waves. Unlike the HRS, in the MHAS hours worked per week was only collected since Wave 2.

## MHAS Variables Used

### Wave 1:

|    |                      |
|----|----------------------|
| I1 | ever had a job       |
| I2 | job without payment  |
| I5 | worked previous week |
| I6 | hours worked         |

### Wave 2:

|     |                          |
|-----|--------------------------|
| I16 | work status              |
| I17 | when work at primary job |
| I3  | ever worked without pay  |

### Wave 3:

|          |  |
|----------|--|
| I16_12   | Current work status                                    |
| I17_1_12 | Normally: hours worked primary job - Monday            |
| I17_2_12 | Normally: hours worked primary job - Tuesday           |
| I17_3_12 | Normally: hours worked primary job - Wednesday         |
| I17_4_12 | Normally: hours worked primary job - Thursday          |
| I17_5_12 | Normally: hours worked primary job - Friday            |
| I17_6_12 | Normally: hours worked primary job - Saturday          |
| I17_7_12 | Normally: hours worked primary job - Sunday            |
| I3_12    | Have you ever/since last time we spoke, worked without |

### Wave 4:

|          |   |
|----------|---|
| I16_15   | Current labor force status                              |
| I17_1_15 | Regularly, number of hours worked at primary job - Mond |
| I17_2_15 | Regularly, number of hours worked at primary job - Tues |
| I17_3_15 | Regularly, number of hours worked at primary job - Wedn |
| I17_4_15 | Regularly, number of hours worked at primary job - Thur |
| I17_5_15 | Regularly, number of hours worked at primary job - Frid |
| I17_6_15 | Regularly, number of hours worked at primary job - Satu |
| I17_7_15 | Regularly, number of hours worked at primary job - Sund |
| I3_15    | Has respondent ever helped in a business, farm, or ranc |

### Wave 5:

|          |   |
|----------|---|
| I16_18   | Current labor force status                              |
| I17_1_18 | Regularly, number of hours worked at primary job - Mond |
| I17_2_18 | Regularly, number of hours worked at primary job - Tues |
| I17_3_18 | Regularly, number of hours worked at primary job - Wedn |
| I17_4_18 | Regularly, number of hours worked at primary job - Thur |
| I17_5_18 | Regularly, number of hours worked at primary job - Frid |

|          |   |
|----------|---|
| I17_6_18 | Regularly, number of hours worked at primary job - Satu |
| I17_7_18 | Regularly, number of hours worked at primary job - Sund |
| I3_18    | Has R ever helped in a business/farm/ranch without rece |

|                                      |
|--------------------------------------|
| <b>Main Activity Years of Tenure</b> |
|--------------------------------------|

| Wave | Variable | Label                            | Type |
|------|----------|----------------------------------|------|
| 1    | R1JCTEN  | r1jcten: w1 R Current job tenure | Cont |
| 2    | R2JCTEN  | r2jcten: w2 R Current job tenure | Cont |
| 3    | R3JCTEN  | r3jcten: w3 R Current job tenure | Cont |
| 4    | R4JCTEN  | r4jcten: w4 R Current job tenure | Cont |
| 5    | R5JCTEN  | r5jcten: w5 R Current job tenure | Cont |
| 1    | S1JCTEN  | s1jcten: w1 S Current job tenure | Cont |
| 2    | S2JCTEN  | s2jcten: w2 S Current job tenure | Cont |
| 3    | S3JCTEN  | s3jcten: w3 S Current job tenure | Cont |
| 4    | S4JCTEN  | s4jcten: w4 S Current job tenure | Cont |
| 5    | S5JCTEN  | s5jcten: w5 S Current job tenure | Cont |

### Descriptive Statistics

| Variable | N    | Mean  | Std Dev | Minimum | Maximum |
|----------|------|-------|---------|---------|---------|
| R1JCTEN  | 6561 | 25.92 | 14.67   | 0.00    | 85.00   |
| R2JCTEN  | 5709 | 24.54 | 17.13   | 1.00    | 80.00   |
| R3JCTEN  | 5604 | 25.15 | 16.79   | 1.00    | 87.00   |
| R4JCTEN  | 5505 | 24.55 | 18.04   | 1.00    | 85.00   |
| R5JCTEN  | 6873 | 23.71 | 16.70   | 1.00    | 93.00   |
| S1JCTEN  | 4965 | 25.82 | 14.34   | 0.00    | 85.00   |
| S2JCTEN  | 4350 | 24.70 | 17.02   | 1.00    | 77.00   |
| S3JCTEN  | 4148 | 25.60 | 16.69   | 1.00    | 85.00   |
| S4JCTEN  | 3982 | 25.27 | 18.13   | 1.00    | 82.00   |
| S5JCTEN  | 2604 | 26.70 | 18.63   | 1.00    | 93.00   |

### How Constructed

RwJCTEN is the respondent's number of years of tenure on their current job. RwJCTEN is set to .w, if the respondent is currently not working (that is if RwwORK is 0). RwJCTEN is set to .i, if the number of years is greater than the respondent's age in the current wave. RwJCTEN is also assigned special missing values .d or .r, if they answered don't know or refused, respectively. Other missing responses are assigned special missing value .m. RwJCTEN is set to plain missing (.) for respondents who did not respond to the current wave.

SwJCTEN is taken from the Wave 'w' spouse's value for RwJCTEN. In addition to the special missing codes used in RwJCTEN, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

### Cross Wave Differences in MHAS

The MHAS Employment Section changed between Wave 1, 2 and 3. The wording of the questions was modified depending on the type of interview: follow-up or new subject interviews, in particular for the 'Work History' questions. Also the dynamics of the section, determined by the skip patterns, was modified across these waves. In Wave 2, the 'Work History' and 'Principal Occupation' questions are only asked to new subjects. The number of questions included in the section also changed after Wave 2. Despite the differences across waves, the changes in the questions and dynamics of the section did not affect the outcome of RwJCTEN.

### Differences with the RAND HRS/Harmonized HRS

No differences known.

**MHAS Variables Used**

## Wave 1:

I1 ever had a job  
 I13 years in main job  
 I2 job without payment  
 I5 worked previous week

## Wave 2:

I16 work status  
 I24 number of years at current primary job  
 I3 ever worked without pay

## Wave 3:

I16\_12 Current work status  
 I24\_12 Number of years has worked on this type of activities/j  
 I3\_12 Have you ever/since last time we spoke, worked without

## Wave 4:

I10\_15 Number of years respondent has worked doing these type  
 I16\_15 Current labor force status  
 I19\_15 Current occupation: Are activities at respondent's cure  
 I24\_15 Number of years respondent has worked doing these type  
 I3\_15 Has respondent ever helped in a business, farm, or ranc

## Wave 5:

I10\_18 Number of years R has worked doing these type of activi  
 I16\_18 Current labor force status  
 I19\_18 Are activities at R's current job like those done in ma  
 I24\_18 Number of years R has worked doing these type of activi  
 I3\_18 Has R ever helped in a business/farm/ranch without rece

### Job Allows Move to Less Demanding Work

| Wave | Variable | Label   | Type  |
|------|----------|---|-------|
| 2    | R2JREDHR | r2jredhr: w2 R Job allows move to less demanding work | Categ |
| 3    | R3JREDHR | r3jredhr: w3 R Job allows move to less demanding work | Categ |
| 4    | R4JREDHR | r4jredhr: w4 R Job allows move to less demanding work | Categ |
| 5    | R5JREDHR | r5jredhr: w5 R Job allows move to less demanding work | Categ |
| 2    | S2JREDHR | s2jredhr: w2 S Job allows move to less demanding work | Categ |
| 3    | S3JREDHR | s3jredhr: w3 S Job allows move to less demanding work | Categ |
| 4    | S4JREDHR | s4jredhr: w4 S Job allows move to less demanding work | Categ |
| 5    | S5JREDHR | s5jredhr: w5 S Job allows move to less demanding work | Categ |

### Descriptive Statistics

| Variable | N    | Mean | Std Dev | Minimum | Maximum |
|----------|------|------|---------|---------|---------|
| R2JREDHR | 5264 | 0.54 | 0.50    | 0.00    | 1.00    |
| R3JREDHR | 5354 | 0.46 | 0.50    | 0.00    | 1.00    |
| R4JREDHR | 5392 | 0.47 | 0.50    | 0.00    | 1.00    |
| R5JREDHR | 6651 | 0.44 | 0.50    | 0.00    | 1.00    |
| S2JREDHR | 3965 | 0.53 | 0.50    | 0.00    | 1.00    |
| S3JREDHR | 3937 | 0.45 | 0.50    | 0.00    | 1.00    |
| S4JREDHR | 3897 | 0.47 | 0.50    | 0.00    | 1.00    |
| S5JREDHR | 2492 | 0.49 | 0.50    | 0.00    | 1.00    |

### Categorical Variable Codes

| Value-----                    | R2JREDHR | R3JREDHR | R4JREDHR | R5JREDHR |
|-------------------------------|----------|----------|----------|----------|
| .d:DK                         | 36       | 11       | 55       | 25       |
| .m:Missing                    | 26       |          | 40       | 17       |
| .p:Proxy interview, not asked | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     | 21       | 9        | 8        | 41       |
| .x:Not working/never worked   | 7179     | 9074     | 8355     | 9052     |
| 0.No                          | 2424     | 2901     | 2833     | 3692     |
| 1.Yes                         | 2840     | 2453     | 2559     | 2959     |

| Value-----                    | S2JREDHR | S3JREDHR | S4JREDHR | S5JREDHR |
|-------------------------------|----------|----------|----------|----------|
| .d:DK                         | 27       | 6        | 47       | 8        |
| .m:Missing                    | 6        |          | 10       | 2        |
| .p:Proxy interview, not asked | 821      | 726      | 470      | 560      |
| .r:Refuse                     | 14       | 6        | 5        | 17       |
| .u:Unmar                      | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 131      | 349      | 280      | 501      |
| .x:Not working/never worked   | 4731     | 5917     | 5223     | 4382     |
| 0.No                          | 1872     | 2167     | 2075     | 1283     |
| 1.Yes                         | 2093     | 1770     | 1822     | 1209     |

### How Constructed

RwJREDHR indicates if the respondent could reduce the number of hours at work if they wanted, even if the salary would be reduced as well, and is set to 0.No or 1.Yes. RwJREDHR is only available starting in Wave 2. RwJREDHR is set to .x, if the respondent is currently not working (that is if RWORK is 0). RwJREDHR is also assigned special missing values .d or .r, if they answered don't know or refused, respectively and it is also set to .p for proxy interviews. Other missing responses are assigned special missing value .m. The variable is set to plain missing (.) for respondents who did not respond to the current wave.

SwJREDHR is taken from the Wave 'w' spouse's value for RwJREDHR. In addition to the special missing codes used in RwJREDHR, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.



Cross Wave Differences in MHAS

The MHAS Employment Section changed between Wave 1, 2 and 3. Starting in Wave 2, the question regarding the possibility of reducing the number of hours was added to the 'Current Work' questions.

Differences with the RAND HRS/Harmonized HRS

The Harmonized HRS includes RwJGRREDHRA, which indicates the respondent's agreement that they would prefer to gradually reduce their hours. RwJREDHR indicates whether the respondent could reduce the number of hours of work if they wanted to. As such, these variables are not directly comparable and thus use different variable names.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 2: |   |
| I16     | work status   |
| I18     | possible to decrease work hours                         |
| I3      | ever worked without pay                                 |
| Wave 3: |   |
| I16_12  | Current work status                                     |
| I18_12  | If you wanted, could you decrease work hours            |
| I3_12   | Have you ever/since last time we spoke, worked without  |
| Wave 4: |   |
| I16_15  | Current labor force status                              |
| I18_15  | If respondent wanted to, could he/she decrease the numb |
| I3_15   | Has respondent ever helped in a business, farm, or ranc |
| Wave 5: |   |
| I16_18  | Current labor force status                              |
| I18_18  | If R wanted to, could he/she decrease hours worked, eve |
| I3_18   | Has R ever helped in a business/farm/ranch without rece |

Occupation Code for Job with Longest Reported Tenure

| Wave | Variable  | Label                                       | Type  |
|------|-----------|---|-------|
| 1    | R1JLOCC_M | r1jlocc_m: w1 R Longest job occupation code | Categ |
| 2    | R2JLOCC_M | r2jlocc_m: w2 R Longest job occupation code | Categ |
| 3    | R3JLOCC_M | r3jlocc_m: w3 R Longest job occupation code | Categ |
| 4    | R4JLOCC_M | r4jlocc_m: w4 R Longest job occupation code | Categ |
| 5    | R5JLOCC_M | r5jlocc_m: w5 R Longest job occupation code | Categ |
| 1    | S1JLOCC_M | s1jlocc_m: w1 S Longest job occupation code | Categ |
| 2    | S2JLOCC_M | s2jlocc_m: w2 S Longest job occupation code | Categ |
| 3    | S3JLOCC_M | s3jlocc_m: w3 S Longest job occupation code | Categ |
| 4    | S4JLOCC_M | s4jlocc_m: w4 S Longest job occupation code | Categ |
| 5    | S5JLOCC_M | s5jlocc_m: w5 S Longest job occupation code | Categ |

Descriptive Statistics

| Variable  | N    | Mean  | Std Dev | Minimum | Maximum |
|-----------|------|-------|---------|---------|---------|
| R1JLOCC_M | 6667 | 9.62  | 4.60    | 1.00    | 19.00   |
| R2JLOCC_M | 1771 | 12.11 | 4.37    | 1.00    | 19.00   |
| R3JLOCC_M | 8460 | 10.49 | 4.81    | 1.00    | 18.00   |
| R4JLOCC_M | 5641 | 10.35 | 4.73    | 1.00    | 18.00   |
| R5JLOCC_M | 8040 | 10.42 | 4.80    | 1.00    | 18.00   |
| S1JLOCC_M | 5051 | 9.31  | 4.48    | 1.00    | 19.00   |
| S2JLOCC_M | 1363 | 11.96 | 4.38    | 1.00    | 19.00   |
| S3JLOCC_M | 6165 | 10.15 | 4.73    | 1.00    | 18.00   |
| S4JLOCC_M | 4085 | 9.98  | 4.62    | 1.00    | 18.00   |
| S5JLOCC_M | 2654 | 9.91  | 4.59    | 1.00    | 18.00   |

Categorical Variable Codes

| Value-----                               | R1JLOCC_M | R2JLOCC_M | R3JLOCC_M | R4JLOCC_M | R5JLOCC_M |
|--|-----------|-----------|-----------|-----------|-----------|
| .c: Job not classifiable                 |           |           | 57        | 84        | 70        |
| .d:DK                                    | 21        | 17        | 3         | 53        | 7         |
| .m:Missing                               | 42        | 30        | 1         | 42        | 22        |
| .r:Refuse                                | 29        | 6         | 6         | 6         | 18        |
| .s:Skip                                  |           | 4066      |           | 2         | 4         |
| .w:not working                           | 8427      | 7814      | 7196      | 8951      | 8953      |
| 1.Professionals                          | 222       | 13        | 267       | 187       | 226       |
| 2.Technicians                            | 186       | 25        | 204       | 126       | 320       |
| 3.Educators                              | 235       | 22        | 362       | 187       | 304       |
| 4.Workers in Art, Shows, and Sports      | 49        | 10        | 43        | 30        | 42        |
| 5.Officials and Directors Public, Privat | 154       | 52        | 163       | 126       | 91        |
| 6.Workers in Agriculture, Livestock, For | 1410      | 146       | 1198      | 932       | 1090      |
| 7.Bosses/Supervisors etc in Artistic, In | 87        | 16        | 93        | 58        | 91        |
| 8.Artisans and Workers in Production, Re | 1251      | 275       | 1535      | 1088      | 1558      |
| 9.Operators of Fixed Machinery and Equip | 169       | 29        | 213       | 67        | 233       |
| 10.Asst/Laborers etc in Ind. Production, | 170       | 41        | 191       | 80        | 164       |
| 11.Drivers and Asst Drivers of Mobile Ma | 339       | 63        | 385       | 268       | 364       |
| 12.Department Heads/Coordinators/Supervi | 127       | 17        | 117       | 72        | 111       |
| 13.Administrative Support Staff          | 292       | 80        | 517       | 232       | 443       |
| 14.Merchants and Sales Representatives   | 831       | 375       | 904       | 732       | 880       |
| 15.Traveling Salespeople and Traveling S | 207       | 135       | 473       | 412       | 456       |
| 16.Workers in the Service Industry       | 348       | 219       | 797       | 567       | 796       |
| 17.Domestic Workers                      | 420       | 137       | 748       | 358       | 671       |
| 18.Safety and Security Personnel         | 135       | 92        | 250       | 119       | 200       |
| 19.Other Workers                         | 35        | 24        |           |           |           |
| Value-----                               | S1JLOCC_M | S2JLOCC_M | S3JLOCC_M | S4JLOCC_M | S5JLOCC_M |
| .c: Job not classifiable                 |           |           | 46        | 71        | 29        |
| .d:DK                                    | 10        | 15        | 1         | 44        | 2         |
| .m:Missing                               | 14        | 8         | 1         | 11        | 6         |

|  |  |      |      |      |      |      |
|--|--|------|------|------|------|------|
| .r:Refuse                                |  | 23   | 5    | 3    | 4    | 13   |
| .s:Skip                                  |  |      | 3093 |      | 2    | 3    |
| .u:Unmar                                 |  | 4205 | 4009 | 4782 | 4847 | 5227 |
| .v:SP NR                                 |  | 333  | 131  | 349  | 280  | 501  |
| .w:not working                           |  | 5550 | 5080 | 4376 | 5435 | 4754 |
| 1.Professionals                          |  | 185  | 9    | 203  | 144  | 57   |
| 2.Technicians                            |  | 136  | 23   | 145  | 81   | 98   |
| 3.Educators                              |  | 180  | 14   | 269  | 136  | 70   |
| 4.Workers in Art, Shows, and Sports      |  | 39   | 5    | 33   | 24   | 14   |
| 5.Officials and Directors Public, Privat |  | 125  | 42   | 130  | 94   | 42   |
| 6.Workers in Agriculture, Livestock, For |  | 1141 | 125  | 963  | 775  | 560  |
| 7.Bosses/Supervisors etc in Artistic, In |  | 76   | 15   | 75   | 47   | 22   |
| 8.Artisans and Workers in Production, Re |  | 967  | 210  | 1175 | 810  | 564  |
| 9.Operators of Fixed Machinery and Equip |  | 137  | 25   | 177  | 58   | 42   |
| 10.Asst/Laborers etc in Ind. Production, |  | 134  | 34   | 148  | 63   | 39   |
| 11.Drivers and Asst Drivers of Mobile Ma |  | 298  | 59   | 336  | 231  | 117  |
| 12.Department Heads/Coordinators/Supervi |  | 96   | 14   | 86   | 57   | 32   |
| 13.Administrative Support Staff          |  | 209  | 66   | 346  | 158  | 97   |
| 14.Merchants and Sales Representatives   |  | 604  | 279  | 625  | 499  | 306  |
| 15.Traveling Salespeople and Traveling S |  | 136  | 94   | 317  | 280  | 188  |
| 16.Workers in the Service Industry       |  | 240  | 169  | 518  | 353  | 223  |
| 17.Domestic Workers                      |  | 211  | 86   | 416  | 183  | 122  |
| 18.Safety and Security Personnel         |  | 112  | 73   | 203  | 92   | 61   |
| 19.Other Workers                         |  | 25   | 21   |      |      |      |

## How Constructed

RwJLOCC\_M is the occupation code for the primary job performed most of their life. RwJLOCC\_M was determined using the Mexican Classification of Occupations provided for the 2001 and 2003 data, and available at the MHAS website using the following links: [\(here\)](#) and [\(here\)](#).

RwJLOCC\_M is set to .w, if the respondent is currently not working (that is if RwWORK is 0). In Wave 2, RwJLOCC\_M is also set to special missing value .s to indicate that the 'Principal Occupation' questions are not available because they were skipped for follow-up interviews. RwJLOCC\_M is also assigned special missing values .d or .r, if they answered don't know or refused, respectively. Other missing responses are assigned special missing value .m. RwJLOCC\_M is set to plain missing (.) for respondents who did not respond to the current wave.

SwJLOCC\_M is taken from the Wave 'w' spouse's value for RwJLOCC\_M. In addition to the special missing codes used in RwJLOCC\_M, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

The MHAS Employment Section changed between Wave 1, 2 and 3. The wording of the questions was modified depending on the type of interview: follow-up or new subject interviews, in particular for the 'Work History' questions. Also the dynamics of the section, determined by the skip patterns, was modified across these waves. In Wave 2, the 'Work History' and 'Principal Occupation' questions are only asked to new subjects. The number of questions included in the section also changed after Wave 2.

## Differences with the RAND HRS/Harmonized HRS

The questions used from the MHAS to determine this harmonized variable are significantly different from the questions used to determine the RAND HRS variable.

RwJLOCC\_M was determined using the occupation codes provided in the MHAS raw variables and the occupations classification from the Mexican Classification of Occupations provided for the 2001 and 2003 data. Since the codes included in the Mexican classification of occupations are particular to Mexico and considered different from the set of codes used to create the RAND HRS variable, RwJLOCC\_M was created as an MHAS specific variable.

## MHAS Variables Used

Wave 1:  
I1 ever had a job

|         |   |
|---------|---|
| I2      | job without payment                                     |
| I5      | worked previous week                                    |
| I9      | main job  |
| Wave 2: |   |
| I19     | current work roles similar to past roles                |
| I20     | principal functions in current primary job              |
| I3      | ever worked without pay                                 |
| I6      | principal functions at primary job                      |
| Wave 3: |   |
| I20_12  |   |
| I3_12   | Have you ever/since last time we spoke, worked without  |
| I6_12   |   |
| Wave 4: |   |
| I16_15  | Current labor force status                              |
| I19_15  | Current occupation: Are activities at respondent's cure |
| I20_15  | Classification of occupation for respondent's current p |
| I3_15   | Has respondent ever helped in a business, farm, or ranc |
| I6_15   | Classification of occupation for respondent's primary j |
| Wave 5: |   |
| I16_18  | Current labor force status                              |
| I19_18  | Are activities at R's current job like those done in ma |
| I20_18  | Classification of occupation for R's current primary jo |
| I3_18   | Has R ever helped in a business/farm/ranch without rece |
| I6_18   | Classification of occupation for R's primary job        |

|                            |
|----------------------------|
| <b>Year Last Job Ended</b> |
|----------------------------|

| Wave | Variable | Label                              | Type |
|------|----------|------------------------------------|------|
| 2    | R2JLASTY | r2jlasty: w2 R Year last job ended | Cont |
| 3    | R3JLASTY | r3jlasty: w3 R Year last job ended | Cont |
| 4    | R4JLASTY | r4jlasty: w4 R Year last job ended | Cont |
| 5    | R5JLASTY | r5jlasty: w5 R Year last job ended | Cont |
| 2    | S2JLASTY | s2jlasty: w2 S Year last job ended | Cont |
| 3    | S3JLASTY | s3jlasty: w3 S Year last job ended | Cont |
| 4    | S4JLASTY | s4jlasty: w4 S Year last job ended | Cont |
| 5    | S5JLASTY | s5jlasty: w5 S Year last job ended | Cont |

### Descriptive Statistics

| Variable | N    | Mean    | Std Dev | Minimum | Maximum |
|----------|------|---------|---------|---------|---------|
| R2JLASTY | 2353 | 1988.76 | 13.97   | 1917.00 | 2003.00 |
| R3JLASTY | 2429 | 1991.43 | 19.54   | 1907.00 | 2012.00 |
| R4JLASTY | 3698 | 1988.66 | 23.09   | 1922.00 | 2015.00 |
| R5JLASTY | 2887 | 1993.47 | 21.97   | 1918.00 | 2019.00 |
| S2JLASTY | 1515 | 1988.87 | 13.88   | 1917.00 | 2003.00 |
| S3JLASTY | 1656 | 1992.38 | 18.69   | 1907.00 | 2012.00 |
| S4JLASTY | 2253 | 1990.50 | 22.11   | 1932.00 | 2015.00 |
| S5JLASTY | 1132 | 1992.56 | 22.86   | 1932.00 | 2019.00 |

### How Constructed

RwJLASTY is the year when the respondent last worked. RwJLASTY is not available for Wave 1. In Wave 2, RwJLASTY is the year reported by the respondent. Starting in Wave 3, RwJLASTY is the year reported by the respondent or it is calculated using the reported number of years since they last worked and the year of the interview. RwJLASTY is set to .s, if the respondent is currently working (that is if RwwORK is 1) and .n if the respondent has never worked. It is also set to .p for proxy interviews. RwJLASTY is set to .i if the year is after the year of the current interview. RwJLASTY is also assigned special missing values .d, or .r, if they answered don't know or refused, respectively. Other missing responses are assigned special missing value .m. RwJLASTY is set to plain missing (.) for respondents who did not respond to the current wave.

SwJLASTY is taken from the Wave 'w' spouse's value for RwJLASTY. In addition to the special missing codes used in RwJLASTY, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

### Cross Wave Differences in MHAS

The MHAS Employment Section changed between Wave 1, 2 and 3. The wording of the questions was modified depending on the type of interview: follow-up or new subject interviews, in particular for the 'Work History' questions. Also the dynamics of the section, determined by the skip patterns, was modified across these waves. In Wave 2, the 'Work History' and 'Principal Occupation' questions are only asked to new subjects. The number of questions included in the section also changed after Wave 2.

### Differences with the RAND HRS/Harmonized HRS

The questions used from the MHAS to determine this harmonized variable are slightly different from the questions used to determine the RAND HRS variable. In the MHAS, the question regarding the year last job ended is only asked if the respondent reported they are not currently working and is skipped for proxy interviews, without regard to the working status reported in the previous interview (if any). However, in the HRS, in an interview where the respondent is not working they are asked when the previous interview job ended.

**MHAS Variables Used****Wave 2:**

|     |                         |
|-----|-------------------------|
| I16 | work status             |
| I27 | ever worked without pay |
| I29 | when leave last job     |
| I3  | ever worked without pay |

**Wave 3:**

|           |  |
|-----------|--|
| A2A2_3_12 | Correct year of birth                                  |
| AA2_3_12  | Year of birth  |
| I16_12    | Current work status                                    |
| I27_12    | (Follow-up person) Ever worked without pay             |
| I29_1_12  | In what year did you leave your last job               |
| I29_2_12  | How many years ago did you leave your last job         |
| I3_12     | Have you ever/since last time we spoke, worked without |

**Wave 4:**

|           |   |
|-----------|---|
| A2A2_3_15 | Correct year of birth                                   |
| AA2_3_15  | Year of birth   |
| I16_15    | Current labor force status                              |
| I27_15    | (Only for follow-up interviews) Has respondent ever wor |
| I29_1_15  | Year the respondent left his/her last job               |
| I29_2_15  | How many years ago did respondent leave his/her last jo |
| I3_15     | Has respondent ever helped in a business, farm, or ranc |

**Wave 5:**

|           |   |
|-----------|---|
| A2A2_3_18 | Correct year of birth                                   |
| AA2_3_18  | Year of birth   |
| I16_18    | Current labor force status                              |
| I27_18    | (Follow-ups only) R ever worked in firm/self-employed a |
| I29_1_18  | Year the R left his/her last job                        |
| I29_2_18  | How many years ago did R leave his/her last job         |
| I3_18     | Has R ever helped in a business/farm/ranch without rece |

Reason Job Ended

| Wave | Variable  | Label                                 | Type  |
|------|-----------|---------------------------------------|-------|
| 2    | R2JRSLEFT | r2jrsleft: w2 R Reason last job ended | Categ |
| 3    | R3JRSLEFT | r3jrsleft: w3 R Reason last job ended | Categ |
| 4    | R4JRSLEFT | r4jrsleft: w4 R Reason last job ended | Categ |
| 5    | R5JRSLEFT | r5jrsleft: w5 R Reason last job ended | Categ |
| 2    | S2JRSLEFT | s2jrsleft: w2 S Reason last job ended | Categ |
| 3    | S3JRSLEFT | s3jrsleft: w3 S Reason last job ended | Categ |
| 4    | S4JRSLEFT | s4jrsleft: w4 S Reason last job ended | Categ |
| 5    | S5JRSLEFT | s5jrsleft: w5 S Reason last job ended | Categ |

Descriptive Statistics

| Variable  | N    | Mean | Std Dev | Minimum | Maximum |
|-----------|------|------|---------|---------|---------|
| R2JRSLEFT | 2433 | 4.15 | 2.21    | 1.00    | 8.00    |
| R3JRSLEFT | 2505 | 4.34 | 2.44    | 1.00    | 8.00    |
| R4JRSLEFT | 3748 | 4.16 | 2.45    | 1.00    | 8.00    |
| R5JRSLEFT | 3068 | 4.13 | 2.34    | 1.00    | 8.00    |
| S2JRSLEFT | 1558 | 4.05 | 2.20    | 1.00    | 8.00    |
| S3JRSLEFT | 1707 | 4.30 | 2.45    | 1.00    | 8.00    |
| S4JRSLEFT | 2281 | 4.09 | 2.47    | 1.00    | 8.00    |
| S5JRSLEFT | 1192 | 3.87 | 2.40    | 1.00    | 8.00    |

Categorical Variable Codes

| Value-----                    | R2JRSLEFT | R3JRSLEFT | R4JRSLEFT | R5JRSLEFT |
|-------------------------------|-----------|-----------|-----------|-----------|
| .d:DK                         | 6         | 3         | 44        | 15        |
| .m:Missing                    | 26        |           | 40        | 17        |
| .n:never worked               | 4752      | 6566      | 4606      | 5941      |
| .p:Proxy interview, not asked | 1178      | 1275      | 929       | 1328      |
| .r:Refuse                     | 4         | 11        | 7         | 48        |
| .w:working                    | 5305      | 5363      | 5405      | 6697      |
| 1.Retired                     | 536       | 543       | 962       | 714       |
| 3.Laid off                    | 259       | 393       | 430       | 411       |
| 4.Health reason               | 552       | 437       | 835       | 735       |
| 5.Family reason               | 705       | 548       | 727       | 623       |
| 8.Other                       | 381       | 584       | 794       | 585       |

| Value-----                    | S2JRSLEFT | S3JRSLEFT | S4JRSLEFT | S5JRSLEFT |
|-------------------------------|-----------|-----------|-----------|-----------|
| .d:DK                         | 4         | 1         | 39        | 1         |
| .m:Missing                    | 6         |           | 10        | 2         |
| .n:never worked               | 3182      | 4208      | 2941      | 3181      |
| .p:Proxy interview, not asked | 821       | 726       | 470       | 560       |
| .r:Refuse                     | 1         | 7         | 4         | 18        |
| .u:Unmar                      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      | 131       | 349       | 280       | 501       |
| .w:working                    | 3992      | 3943      | 3907      | 2507      |
| 1.Retired                     | 367       | 387       | 623       | 345       |
| 3.Laid off                    | 177       | 273       | 255       | 162       |
| 4.Health reason               | 331       | 272       | 490       | 291       |
| 5.Family reason               | 459       | 382       | 439       | 179       |
| 8.Other                       | 224       | 393       | 474       | 215       |

How Constructed

RwJRSLEFT indicates the reason the respondent left their last job and is only available starting in Wave 2. Starting in Wave 2, this question is asked to every respondent, from the follow-up and new sample, that is not working and has ever worked. RwJRSLEFT is set to 1. if the respondent retired, 2. if fired, 3. if laid off (including source of work closed, temporary work ended, or business moved), 4. for health

reason or due to sickness, 5. for family reason or to care for children, 6. if got a new job, 7. if respondent quit, and 8. if any other reason (including made too little money, schedule was inconvenient, job was not related to studies or training). `RwJRSLEFT` is set to `.w`, if the respondent is currently working (that is if `RwWORK` is 1) and `.n` if the respondent reported in the current wave that they have never worked. It is also set to `.p` for proxy interviews. `RwJRSLEFT` is also assigned special missing values `.d`, or `.r`, if they answered don't know or refused, respectively. Other missing responses are assigned special missing value `.m`. The variable is set to plain missing (`.`) for respondents who did not respond to the current wave.

`SwJRSLEFT` are taken from the Wave 'w' spouse's value for `RwJRSLEFT`. In addition to the special missing codes used in `RwJRSLEFT`, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of `.u` is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of `.v` is used.

## Cross Wave Differences in MHAS

The MHAS Employment Section changed between Wave 1, 2 and 3. Starting in Wave 2, the 'Reason the Respondent left last job' questions were added for both follow-up and new sample interviews.

## Differences with the RAND HRS/Harmonized HRS

The questions used from the MHAS to determine this harmonized variable are slightly different from the questions used to determine the RAND HRS variable. In the MHAS, the question regarding the year last job ended is only asked if the respondent reported they are not currently working and is skipped for proxy interviews, without regard to the working status reported in the previous interview (if any). However, in the HRS, in an interview where the respondent is not working they are asked when the previous interview job ended.

## MHAS Variables Used

### Wave 2:

|     |                             |
|-----|-----------------------------|
| I16 | work status                 |
| I27 | ever worked without pay     |
| I28 | reason for leaving last job |
| I3  | ever worked without pay     |

### Wave 3:

|           |   |
|-----------|---|
| I16_12    | Current work status                                     |
| I27_12    | (Follow-up person) Ever worked without pay              |
| I28_01_12 | Reason left last job - work closed/bankrupt             |
| I28_02_12 | Reason left last job - it was temporary                 |
| I28_03_12 | Reason left last job - the business moved               |
| I28_04_12 | Reason left last job - made too little money            |
| I28_05_12 | Reason left last job - inconvenient work schedule       |
| I28_06_12 | Reason left last job - not related to training/studies  |
| I28_07_12 | Reason left last job - to care for children/family memb |
| I28_08_12 | Reason left last job - due to sickness                  |
| I28_09_12 | Reason left last job - retirement                       |
| I28_10_12 | Reason left last job - other                            |
| I28_88_12 | Reason left last job - RF                               |
| I28_99_12 | Reason left last job - DK                               |
| I3_12     | Have you ever/since last time we spoke, worked without  |

### Wave 4:

|           |   |
|-----------|---|
| I16_15    | Current labor force status                              |
| I27_15    | (Only for follow-up interviews) Has respondent ever wor |
| I28_01_15 | Reason respondent left his/her last job: Source of work |
| I28_02_15 | Reason respondent left his/her last job: It was tempora |
| I28_03_15 | Reason respondent left his/her last job: The business m |
| I28_04_15 | Reason respondent left his/her last job: Made too littl |
| I28_05_15 | Reason respondent left his/her last job: The work sched |
| I28_06_15 | Reason respondent left his/her last job: It wasn't rela |
| I28_07_15 | Reason respondent left his/her last job: To care for ch |
| I28_08_15 | Reason respondent left his/her last job: Due to sicknes |
| I28_09_15 | Reason respondent left his/her last job: Retirement     |



|           |   |
|-----------|---|
| I28_10_15 | Reason respondent left his/her last job: Other          |
| I28_88_15 | Reason respondent left his/her last job: RF             |
| I28_99_15 | Reason respondent left his/her last job: DK             |
| I3_15     | Has respondent ever helped in a business, farm, or ranc |

Wave 5:

|           |   |
|-----------|---|
| I16_18    | Current labor force status                              |
| I27_18    | (Follow-ups only) R ever worked in firm/self-employed a |
| I28_01_18 | Reason R left last job: Source of work closed down/cut  |
| I28_02_18 | Reason R left his/her last job: It was temporary and th |
| I28_03_18 | Reason R left his/her last job: The business moved      |
| I28_04_18 | Reason R left his/her last job: Made too little money   |
| I28_05_18 | Reason R left his/her last job: The work schedule was i |
| I28_06_18 | Reason R left his/her last job: It wasn't related to hi |
| I28_07_18 | Reason R left his/her last job: To care for children or |
| I28_08_18 | Reason R left his/her last job: Due to sickness         |
| I28_09_18 | Reason R left his/her last job: Retirement              |
| I28_10_18 | Reason R left his/her last job: Other                   |
| I28_88_18 | Reason R left his/her last job: RF                      |
| I28_99_18 | Reason R left his/her last job: DK                      |
| I3_18     | Has R ever helped in a business/farm/ranch without rece |

**Section I: Retirement**

|  |
|--|
| <b>Whether Retired: Retirement year, if says retired</b> |
|--|

| Wave | Variable | Label  | Type |
|------|----------|--|------|
| 2    | R2RETYR  | r2retyr: w2 R Whether retired: Retirement year | Cont |
| 3    | R3RETYR  | r3retyr: w3 R Whether retired: Retirement year | Cont |
| 4    | R4RETYR  | r4retyr: w4 R Whether retired: Retirement year | Cont |
| 5    | R5RETYR  | r5retyr: w5 R Whether retired: Retirement year | Cont |
| 2    | S2RETYR  | s2retyr: w2 S Whether retired: Retirement year | Cont |
| 3    | S3RETYR  | s3retyr: w3 S Whether retired: Retirement year | Cont |
| 4    | S4RETYR  | s4retyr: w4 S Whether retired: Retirement year | Cont |
| 5    | S5RETYR  | s5retyr: w5 S Whether retired: Retirement year | Cont |

### Descriptive Statistics

| Variable | N    | Mean    | Std Dev | Minimum | Maximum |
|----------|------|---------|---------|---------|---------|
| R2RETYR  | 596  | 1993.20 | 7.58    | 1957.00 | 2003.00 |
| R3RETYR  | 654  | 1998.40 | 15.56   | 1935.00 | 2012.00 |
| R4RETYR  | 1245 | 2001.56 | 13.42   | 1941.00 | 2015.00 |
| R5RETYR  | 861  | 2002.69 | 16.55   | 1942.00 | 2018.00 |
| S2RETYR  | 406  | 1994.31 | 6.79    | 1957.00 | 2003.00 |
| S3RETYR  | 452  | 1998.45 | 16.16   | 1935.00 | 2012.00 |
| S4RETYR  | 773  | 2002.99 | 12.63   | 1941.00 | 2015.00 |
| S5RETYR  | 401  | 2002.82 | 15.80   | 1942.00 | 2018.00 |

### How Constructed

RwRETYR is derived only for respondents who reported they are retired, and it is only available starting in Wave 2. In Wave 2, it is directly taken from the year reported by the respondent. However, starting in Wave 3 the respondent was allowed to give the year of retirement or the number of years they have been retired. If the respondent reported the number of years, RwRETYR was derived using the year of the interview and the reported number of years since retirement.

RwRETYR is assigned special missing values .d or .r, if they answered don't know or refused, respectively. It is assigned .p for proxy interviews. RwRETYR is set to special missing value .n if the respondent reported they have never worked, is currently unemployed, or is currently working. RwRETYR is also assigned the special missing value .m if the section was not completed. RwRETYR is set to plain missing (.) for respondents who did not respond to the current wave.

SwRETYR is taken from the Wave 'w' spouse's value for RwRETYR. In addition to the special missing codes used in RwRETYR, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

### Cross Wave Differences in MHAS

The MHAS Employment section changed between Wave 1, 2 and 3. The wording of the questions was modified depending on the type of interview: follow-up or new subject interviews, in particular for the 'Work History' questions. Also the dynamics of the section, determined by the skip patterns, was modified across these waves. In Wave 2, the 'Work History' and 'Principal Occupation' questions are only asked to new subjects. The number of questions included in the section also changed after Wave 2.

The retirement questions are only included after Wave 2. In addition, starting at Wave 3 respondents are allowed to give either the year of retirement or the number of years since they retired.

### Differences with the RAND HRS/Harmonized HRS

The questions used from the MHAS to determine this harmonized variable are significantly different from

the questions used to determine the RAND HRS variable. MHAS does not consider any different retirement statuses such as partial retirement. Also, MHAS does not ask any questions regarding the probability of retirement or expectations related to the respondents' future retirement.

## MHAS Variables Used

### Wave 2:

|     |                             |
|-----|-----------------------------|
| I16 | work status                 |
| I26 | main reason for not working |
| I28 | reason for leaving last job |
| I29 | when leave last job         |
| I3  | ever worked without pay     |

### Wave 3:

|           |  |
|-----------|--|
| I16_12    | Current work status                                    |
| I26_2_12  | Reason for not working - retired                       |
| I27_12    | (Follow-up person) Ever worked without pay             |
| I28_09_12 | Reason left last job - retirement                      |
| I29_1_12  | In what year did you leave your last job               |
| I29_2_12  | How many years ago did you leave your last job         |
| I2_12     | Have you ever/since last time we spoke, worked for pay |
| I3_12     | Have you ever/since last time we spoke, worked without |

### Wave 4:

|           |   |
|-----------|---|
| I16_15    | Current labor force status                              |
| I26_2_15  | Reason respondent does not work: Retired                |
| I27_15    | (Only for follow-up interviews) Has respondent ever wor |
| I28_09_15 | Reason respondent left his/her last job: Retirement     |
| I29_1_15  | Year the respondent left his/her last job               |
| I29_2_15  | How many years ago did respondent leave his/her last jo |
| I2_15     | Has respondent ever had a job for which he/she received |
| I3_15     | Has respondent ever helped in a business, farm, or ranc |

### Wave 5:

|           |   |
|-----------|---|
| I16_18    | Current labor force status                              |
| I26_2_18  | Reason R does not work: Retired                         |
| I27_18    | (Follow-ups only) R ever worked in firm/self-employed a |
| I28_09_18 | Reason R left his/her last job: Retirement              |
| I29_1_18  | Year the R left his/her last job                        |
| I29_2_18  | How many years ago did R leave his/her last job         |
| I2_18     | Has R ever had a job for which he/she received a paymen |
| I3_18     | Has R ever helped in a business/farm/ranch without rece |

### Whether Retired: Retirement age, if says retired

| Wave | Variable | Label  | Type |
|------|----------|--|------|
| 2    | R2RETAGE | r2retage: w2 R Whether retired: Retirement age | Cont |
| 3    | R3RETAGE | r3retage: w3 R Whether retired: Retirement age | Cont |
| 4    | R4RETAGE | r4retage: w4 R Whether retired: Retirement age | Cont |
| 5    | R5RETAGE | r5retage: w5 R Whether retired: Retirement age | Cont |
| 2    | S2RETAGE | s2retage: w2 S Whether retired: Retirement age | Cont |
| 3    | S3RETAGE | s3retage: w3 S Whether retired: Retirement age | Cont |
| 4    | S4RETAGE | s4retage: w4 S Whether retired: Retirement age | Cont |
| 5    | S5RETAGE | s5retage: w5 S Whether retired: Retirement age | Cont |

### Descriptive Statistics

| Variable | N    | Mean  | Std Dev | Minimum | Maximum |
|----------|------|-------|---------|---------|---------|
| R2RETAGE | 595  | 58.57 | 9.31    | 21.00   | 89.00   |
| R3RETAGE | 653  | 51.87 | 15.30   | 0.00    | 82.00   |
| R4RETAGE | 1245 | 56.94 | 12.75   | 0.00    | 89.00   |
| R5RETAGE | 858  | 53.79 | 15.87   | 1.00    | 86.00   |
| S2RETAGE | 405  | 58.41 | 8.57    | 31.00   | 85.00   |
| S3RETAGE | 451  | 51.41 | 15.90   | 0.00    | 81.00   |
| S4RETAGE | 773  | 57.29 | 12.58   | 0.00    | 89.00   |
| S5RETAGE | 401  | 56.43 | 15.15   | 1.00    | 86.00   |

### How Constructed

RwRETAGE indicates the age the respondent retired, is derived only for respondents who reported they are retired, and it is only available starting in Wave 2. In Wave 2, it is derived using the year of retirement reported by the respondent and the birth year (taken from RABYEAR). Starting in Wave 3 the respondent was allowed to give the year of retirement or the number of years they have been retired. If the respondent reported their year of retirement, RwRETAGE is derived in the same way it was constructed in Wave 2, using the year of retirement reported by the respondent and the birth year (taken from RABYEAR). However, if the respondent reported the number of years, RwRETAGE was derived using the age and the reported number of years since retirement.

RwRETAGE is assigned special missing values .d or .r, if they answered don't know or refused, respectively. It is assigned .p for proxy interviews. RwRETAGE is set to special missing value .n if the respondent reported they have never worked, is currently unemployed, or is currently working. RwRETAGE is also assigned the special missing value .m if the section was not completed. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwRETAGE is taken from the Wave 'w' spouse's value for RwRETAGE. In addition to the special missing codes used in RwRETAGE, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

### Cross Wave Differences in MHAS

The MHAS Employment section changed between Wave 1, 2 and 3. The wording of the questions was modified depending on the type of interview: follow-up or new subject interviews, in particular for the 'Work History' questions. Also the dynamics of the section, determined by the skip patterns, was modified across these waves. In Wave 2, the 'Work History' and 'Principal Occupation' questions are only asked to new subjects. The number of questions included in the section also changed after Wave 2.

The retirement questions are only included after Wave 2. In addition, starting at Wave 3 respondents are allowed to give either the year of retirement or the number of years since they retired.

## Differences with the RAND HRS/Harmonized HRS

The questions used from the MHAS to determine this harmonized variable are significantly different from the questions used to determine the RAND HRS variable. MHAS does not consider any different retirement statuses such as partial retirement. Also, MHAS does not ask any questions regarding the probability of retirement or expectations related to the respondents' future retirement.

## MHAS Variables Used

### Wave 2:

|       |                             |
|-------|-----------------------------|
| AA2_2 | dob - month                 |
| AA2_3 | dob - year                  |
| I16   | work status                 |
| I26   | main reason for not working |
| I28   | reason for leaving last job |
| I29   | when leave last job         |
| I3    | ever worked without pay     |

### Wave 3:

|           |  |
|-----------|--|
| A2A2_2_12 | Correct month of birth                                 |
| A2A2_3_12 | Correct year of birth                                  |
| AA2_2_12  | Month of birth   |
| AA2_3_12  | Year of birth  |
| I16_12    | Current work status                                    |
| I26_2_12  | Reason for not working - retired                       |
| I27_12    | (Follow-up person) Ever worked without pay             |
| I28_09_12 | Reason left last job - retirement                      |
| I29_1_12  | In what year did you leave your last job               |
| I29_2_12  | How many years ago did you leave your last job         |
| I2_12     | Have you ever/since last time we spoke, worked for pay |
| I3_12     | Have you ever/since last time we spoke, worked without |

### Wave 4:

|           |   |
|-----------|---|
| A2A2_2_15 | Correct month of birth                                  |
| A2A2_3_15 | Correct year of birth                                   |
| AA2_2_15  | Month of birth  |
| AA2_3_15  | Year of birth   |
| I16_15    | Current labor force status                              |
| I26_2_15  | Reason respondent does not work: Retired                |
| I27_15    | (Only for follow-up interviews) Has respondent ever wor |
| I28_09_15 | Reason respondent left his/her last job: Retirement     |
| I29_1_15  | Year the respondent left his/her last job               |
| I29_2_15  | How many years ago did respondent leave his/her last jo |
| I2_15     | Has respondent ever had a job for which he/she received |
| I3_15     | Has respondent ever helped in a business, farm, or ranc |

### Wave 5:

|           |   |
|-----------|---|
| A2A2_2_18 | Correct month of birth                                  |
| A2A2_3_18 | Correct year of birth                                   |
| AA2_2_18  | Month of birth  |
| AA2_3_18  | Year of birth   |
| I16_18    | Current labor force status                              |
| I26_2_18  | Reason R does not work: Retired                         |
| I27_18    | (Follow-ups only) R ever worked in firm/self-employed a |
| I28_09_18 | Reason R left his/her last job: Retirement              |
| I29_1_18  | Year the R left his/her last job                        |
| I29_2_18  | How many years ago did R leave his/her last job         |
| I2_18     | Has R ever had a job for which he/she received a paymen |
| I3_18     | Has R ever helped in a business/farm/ranch without rece |

**Section J: Pension**

### Whether Receives Public Pension

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1PUBPEN | r1pubpen: w1 R Whether receives public pension | Categ |
| 2    | R2PUBPEN | r2pubpen: w2 R Whether receives public pension | Categ |
| 3    | R3PUBPEN | r3pubpen: w3 R Whether receives public pension | Categ |
| 4    | R4PUBPEN | r4pubpen: w4 R Whether receives public pension | Categ |
| 5    | R5PUBPEN | r5pubpen: w5 R Whether receives public pension | Categ |
| 1    | S1PUBPEN | s1pubpen: w1 S Whether receives public pension | Categ |
| 2    | S2PUBPEN | s2pubpen: w2 S Whether receives public pension | Categ |
| 3    | S3PUBPEN | s3pubpen: w3 S Whether receives public pension | Categ |
| 4    | S4PUBPEN | s4pubpen: w4 S Whether receives public pension | Categ |
| 5    | S5PUBPEN | s5pubpen: w5 S Whether receives public pension | Categ |

### Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1PUBPEN | 15326 | 0.13 | 0.33    | 0.00    | 1.00    |
| R2PUBPEN | 13665 | 0.16 | 0.36    | 0.00    | 1.00    |
| R3PUBPEN | 15691 | 0.19 | 0.39    | 0.00    | 1.00    |
| R4PUBPEN | 14718 | 0.22 | 0.42    | 0.00    | 1.00    |
| R5PUBPEN | 16819 | 0.19 | 0.39    | 0.00    | 1.00    |
| S1PUBPEN | 10833 | 0.10 | 0.30    | 0.00    | 1.00    |
| S2PUBPEN | 9551  | 0.12 | 0.33    | 0.00    | 1.00    |
| S3PUBPEN | 10581 | 0.15 | 0.36    | 0.00    | 1.00    |
| S4PUBPEN | 9643  | 0.18 | 0.39    | 0.00    | 1.00    |
| S5PUBPEN | 7447  | 0.20 | 0.40    | 0.00    | 1.00    |

### Categorical Variable Codes

| Value----- | R1PUBPEN | R2PUBPEN | R3PUBPEN | R4PUBPEN | R5PUBPEN |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 2        | 5        | 18       | 17       | 261      |
| .m:Missing | 59       | 31       | 2        | 34       | 20       |
| .r:Refuse  | 3        | 3        | 12       | 10       | 14       |
| 0.No       | 13355    | 11544    | 12781    | 11429    | 13573    |
| 1.Yes      | 1971     | 2121     | 2910     | 3289     | 3246     |

| Value----- | S1PUBPEN | S2PUBPEN | S3PUBPEN | S4PUBPEN | S5PUBPEN |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 1        | 3        | 3        | 2        | 9        |
| .m:Missing | 16       | 8        | 2        | 4        |          |
| .r:Refuse  | 2        | 2        | 6        | 3        | 5        |
| .u:Unmar   | 4051     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR   | 283      | 131      | 349      | 280      | 501      |
| 0.No       | 9759     | 8362     | 8987     | 7862     | 5928     |
| 1.Yes      | 1074     | 1189     | 1594     | 1781     | 1519     |

### How Constructed

RwPUBPEN indicates whether the respondent is currently receiving any public pension, from retirement or widowhood. Public pension refers only to retirement and it includes pensions from IMSS, ISSSTE, or other public institution (PEMEX, DEFENSE, NAVY, CFE, BANXICO). Other pensions such as Disability or Work Accident, or Other Pensions are included in the MHAS but not in the construction of RwPUBPEN.

A value 0 indicates the respondent is not receiving any public pension. A value of 1 indicates the respondent is receiving at least one public pension. RwPUBPEN is assigned special missing values .d or .r, if they answered don't know or refused, respectively. RwPUBPEN is also assigned the special missing



value .m if the section was not completed. The variable is set to plain missing (.) for respondents who did not respond to the current wave.

SwPUBPEN indicates whether the current wave's spouse is receiving any public pension, and is taken from the spouse's values of RwpUBPEN. In addition to the special missing codes used in RwpUBPEN, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Pension questions are asked only to the financial respondent about the financial respondent's pension income and, if married, the financial respondent's spouse's pension income. If the respondent is the financial respondent, then measures concerning the financial respondent are assigned to the respondent and those about the financial respondent's spouse are assigned to the respondent's spouse. However, if the respondent's spouse is the financial respondent, then measures about the financial respondent are assigned to the respondent's spouse and those concerning the financial respondent's spouse are assigned to the respondent.

## Cross Wave Differences in MHAS

The pension income questions in the MHAS, from Section K (Pension, Income and Assets), changed across waves. In Waves 1 and 2, the financial respondent had the option to report only one pension. In Waves 3 and 4 they can report up to three different pensions, for both retirement and widowhood pensions. Starting in Wave 5 they can report up to two different pensions, for both retirement and widowhood pensions.

## Differences with the RAND HRS/Harmonized HRS

RwpUBPEN in the MHAS is comparable to RASSRECV in the RAND HRS. While RwpUBPEN indicates whether the MHAS respondent is receiving any public pension at each wave, RASSRECV indicates whether the respondent to HRS received social security income at any wave. Components included in Harmonized MHAS and RAND HRS are slightly different for public pensions representing different institutional arrangements in each country. However, we kept the concepts included as comparable as possible. In the MHAS, any public pension includes pensions from IMSS, ISSSTE, or other public institution (PEMEX, DEFENSE, NAVY, CFE, BANXICO).

## MHAS Variables Used

|             |   |
|-------------|---|
| Wave 1:     |   |
| K55A        | retirement pension                                      |
| K56_1       | source of retirement pension                            |
| K61A        | spouse received retirement pension                      |
| K62_1       | source of retirement pension of spouse                  |
| Wave 2:     |   |
| K58A        | retirement pension                                      |
| K59A        | source of retirement pension                            |
| K64C        | spouse received retirement pension                      |
| K65C        | source of retirement pension of spouse                  |
| Wave 3:     |   |
| K58A_12     | Last year: Respondent retirement income pension         |
| K59_1_01_12 | Respondent's retirement pension source_IMSS             |
| K59_1_02_12 | Respondent's retirement pension source_ISSSTE           |
| K59_1_03_12 | Respondent's retirement pension source_Other Public Sec |
| K64C_12     | Last year: Respondent's spouse received retirement pen  |
| K65_1_01_12 | Spouse's retirement pension source_IMSS                 |
| K65_1_02_12 | Spouse's retirement pension source_ISSSTE               |
| K65_1_03_12 | Spouse's retirement pension source_Other Public Service |
| Wave 4:     |   |
| K58A_15     | Last year: Did respondent receive pension income from r |
| K59_1_01_15 | Respondent's retirement pension source: IMSS            |
| K59_1_02_15 | Respondent's retirement pension source: ISSSTE          |
| K59_1_03_15 | Respondent's retirement pension source: Other Public    |
| K59_2_01_15 | Respondent's widowhood pension source: IMSS             |
| K59_2_02_15 | Respondent's widowhood pension source: ISSSTE           |

|             |   |
|-------------|---|
| K59_2_03_15 | Respondent's widowhood pension source: Other Public     |
| K64C_15     | Last year: Did respondent's spouse receive retirement p |
| K65_1_01_15 | Spouse's retirement pension source: IMSS                |
| K65_1_02_15 | Spouse's retirement pension source: ISSSTE              |
| K65_1_03_15 | Spouse's retirement pension source: Other Public        |
| K65_2_01_15 | Spouse's widowhood pension income source: IMSS          |
| K65_2_02_15 | Spouse's widowhood pension income source: ISSSTE        |
| K65_2_03_15 | Spouse's widowhood pension income source: Other Public  |

Wave 5:

|            |  |
|------------|--|
| K58A_18    | Last year: Did respondent receive pension income from r  |
| K59_1_1_18 | Respondent's retirement pension source (First Pension)   |
| K59_1_2_18 | Respondent's retirement pension source (Second Pension)  |
| K59_2_1_18 | Respondent's widowhood pension source (First Pension)    |
| K59_2_2_18 | Respondent's widowhood pension source (Second Pension)   |
| K64C_18    | Last year: Did respondent's spouse receive retirement p  |
| K65_1_1_18 | Spouse's retirement pension source (First Pension)       |
| K65_1_2_18 | Spouse's retirement pension source (Second Pension)      |
| K65_2_1_18 | Spouse's widowhood pension income source (First Pension) |
| K65_2_2_18 | Spouse's widowhood pension income source (Second Pensio  |

Whether Receives Private Pension

| Wave | Variable | Label   | Type  |
|------|----------|---|-------|
| 1    | R1PENINC | r1peninc: w1 R Whether receives private pension | Categ |
| 2    | R2PENINC | r2peninc: w2 R Whether receives private pension | Categ |
| 3    | R3PENINC | r3peninc: w3 R Whether receives private pension | Categ |
| 4    | R4PENINC | r4peninc: w4 R Whether receives private pension | Categ |
| 5    | R5PENINC | r5peninc: w5 R Whether receives private pension | Categ |
| 1    | S1PENINC | s1peninc: w1 S Whether receives private pension | Categ |
| 2    | S2PENINC | s2peninc: w2 S Whether receives private pension | Categ |
| 3    | S3PENINC | s3peninc: w3 S Whether receives private pension | Categ |
| 4    | S4PENINC | s4peninc: w4 S Whether receives private pension | Categ |
| 5    | S5PENINC | s5peninc: w5 S Whether receives private pension | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1PENINC | 15326 | 0.00 | 0.04    | 0.00    | 1.00    |
| R2PENINC | 13665 | 0.00 | 0.04    | 0.00    | 1.00    |
| R3PENINC | 15691 | 0.00 | 0.04    | 0.00    | 1.00    |
| R4PENINC | 14718 | 0.00 | 0.04    | 0.00    | 1.00    |
| R5PENINC | 16819 | 0.00 | 0.04    | 0.00    | 1.00    |
| S1PENINC | 10833 | 0.00 | 0.04    | 0.00    | 1.00    |
| S2PENINC | 9551  | 0.00 | 0.04    | 0.00    | 1.00    |
| S3PENINC | 10581 | 0.00 | 0.03    | 0.00    | 1.00    |
| S4PENINC | 9643  | 0.00 | 0.02    | 0.00    | 1.00    |
| S5PENINC | 7447  | 0.00 | 0.04    | 0.00    | 1.00    |

Categorical Variable Codes

| Value----- | R1PENINC | R2PENINC | R3PENINC | R4PENINC | R5PENINC |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 2        | 5        | 18       | 17       | 261      |
| .m:Missing | 59       | 31       | 2        | 34       | 20       |
| .r:Refuse  | 3        | 3        | 12       | 10       | 14       |
| 0.No       | 15299    | 13646    | 15669    | 14699    | 16790    |
| 1.Yes      | 27       | 19       | 22       | 19       | 29       |
| Value----- | S1PENINC | S2PENINC | S3PENINC | S4PENINC | S5PENINC |
| .d:DK      | 1        | 3        | 3        | 2        | 9        |
| .m:Missing | 16       | 8        | 2        | 4        |          |
| .r:Refuse  | 2        | 2        | 6        | 3        | 5        |
| .u:Unmar   | 4051     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR   | 283      | 131      | 349      | 280      | 501      |
| 0.No       | 10819    | 9538     | 10572    | 9637     | 7434     |
| 1.Yes      | 14       | 13       | 9        | 6        | 13       |

How Constructed

RwPENINC indicates whether the respondent is currently receiving a private pension, from retirement or widowhood. Other pensions such as Disability or Work Accident, or Other Pensions are included in the MHAS but not in the construction of RwPENINC.

A value of 0 indicates that the respondent is not currently receiving any private pension. A value of 1 indicates that the respondent is currently receiving a private pension. RwPENINC is assigned special missing values .d or .r, if they answered don't know or refused, respectively. RwPENINC is also assigned the special missing value .m if the section was not completed. The variable is set to plain missing (.) for respondents who did not respond to the current wave.

SwPENINC indicates whether the current wave's spouse is receiving a private pension, and is taken from the spouse's values of RwpENINC. In addition to the special missing codes used in RwpENINC, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Pension questions are asked only to the financial respondent about the financial respondent's pension income and, if married, the financial respondent's spouse's pension income. If the respondent is the financial respondent, then measures concerning the financial respondent are assigned to the respondent and those about the financial respondent's spouse are assigned to the respondent's spouse. However, if the respondent's spouse is the financial respondent, then measures about the financial respondent are assigned to the respondent's spouse and those concerning the financial respondent's spouse are assigned to the respondent.

## Cross Wave Differences in MHAS

The pension income questions in the MHAS, from Section K (Pension, Income and Assets), changed across waves. In Waves 1 and 2, the financial respondent had the option to report only one pension. In Waves 3 and 4 they can report up to three different pensions, for both retirement and widowhood pensions. Starting in Wave 5 they can report up to two different pensions, for both retirement and widowhood pensions.

## Differences with the RAND HRS/Harmonized HRS

Components included in Harmonized MHAS and RAND HRS are slightly different for private pensions representing different institutional arrangements in each country. However, we kept the concepts included as comparable as possible.

## MHAS Variables Used

|             |   |
|-------------|---|
| Wave 1:     |   |
| K55A        | retirement pension                                      |
| K56_1       | source of retirement pension                            |
| K61A        | spouse received retirement pension                      |
| K62_1       | source of retirement pension of spouse                  |
| Wave 2:     |   |
| K58A        | retirement pension                                      |
| K59A        | source of retirement pension                            |
| K64C        | spouse received retirement pension                      |
| K65C        | source of retirement pension of spouse                  |
| Wave 3:     |   |
| K58A_12     | Last year: Respondent retirement income pension         |
| K59_1_04_12 | Respondent's retirement pension source_Private          |
| K64C_12     | Last year: Respondent's spouse received retirement pen  |
| K65_1_04_12 | Spouse's retirement pension source_Private              |
| Wave 4:     |   |
| K58A_15     | Last year: Did respondent receive pension income from r |
| K59_1_04_15 | Respondent's retirement pension source: Private         |
| K59_2_04_15 | Respondent's widowhood pension source: Private          |
| K64C_15     | Last year: Did respondent's spouse receive retirement p |
| K65_1_04_15 | Spouse's retirement pension source: Private             |
| K65_2_04_15 | Spouse's widowhood pension income source: Private       |
| Wave 5:     |   |
| K58A_18     | Last year: Did respondent receive pension income from r |
| K59_1_1_18  | Respondent's retirement pension source (First Pension)  |
| K59_1_2_18  | Respondent's retirement pension source (Second Pension) |
| K59_2_1_18  | Respondent's widowhood pension source (First Pension)   |
| K59_2_2_18  | Respondent's widowhood pension source (Second Pension)  |
| K64C_18     | Last year: Did respondent's spouse receive retirement p |
| K65_1_1_18  | Spouse's retirement pension source (First Pension)      |
| K65_1_2_18  | Spouse's retirement pension source (Second Pension)     |

|            |   |
|------------|---|
| K65_2_1_18 | Spouse's widowhood pension income source (First Pension |
| K65_2_2_18 | Spouse's widowhood pension income source (Second Pensio |

Whether Receives Other Pension

| Wave | Variable | Label   | Type  |
|------|----------|---|-------|
| 1    | R1OPEN   | r1open: w1 R Whether receives any other pension | Categ |
| 2    | R2OPEN   | r2open: w2 R Whether receives any other pension | Categ |
| 3    | R3OPEN   | r3open: w3 R Whether receives any other pension | Categ |
| 4    | R4OPEN   | r4open: w4 R Whether receives any other pension | Categ |
| 5    | R5OPEN   | r5open: w5 R Whether receives any other pension | Categ |
| 1    | S1OPEN   | s1open: w1 S Whether receives any other pension | Categ |
| 2    | S2OPEN   | s2open: w2 S Whether receives any other pension | Categ |
| 3    | S3OPEN   | s3open: w3 S Whether receives any other pension | Categ |
| 4    | S4OPEN   | s4open: w4 S Whether receives any other pension | Categ |
| 5    | S5OPEN   | s5open: w5 S Whether receives any other pension | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1OPEN   | 15326 | 0.01 | 0.09    | 0.00    | 1.00    |
| R2OPEN   | 13665 | 0.01 | 0.10    | 0.00    | 1.00    |
| R3OPEN   | 15691 | 0.01 | 0.10    | 0.00    | 1.00    |
| R4OPEN   | 14718 | 0.01 | 0.11    | 0.00    | 1.00    |
| R5OPEN   | 16819 | 0.02 | 0.13    | 0.00    | 1.00    |
| S1OPEN   | 10833 | 0.01 | 0.09    | 0.00    | 1.00    |
| S2OPEN   | 9551  | 0.01 | 0.10    | 0.00    | 1.00    |
| S3OPEN   | 10581 | 0.01 | 0.09    | 0.00    | 1.00    |
| S4OPEN   | 9643  | 0.01 | 0.10    | 0.00    | 1.00    |
| S5OPEN   | 7447  | 0.02 | 0.12    | 0.00    | 1.00    |

Categorical Variable Codes

| Value----- | R1OPEN | R2OPEN | R3OPEN | R4OPEN | R5OPEN |
|------------|--------|--------|--------|--------|--------|
| .d:DK      | 2      | 5      | 18     | 17     | 261    |
| .m:Missing | 59     | 31     | 2      | 34     | 20     |
| .r:Refuse  | 3      | 3      | 12     | 10     | 14     |
| 0.No       | 15188  | 13519  | 15517  | 14548  | 16539  |
| 1.Yes      | 138    | 146    | 174    | 170    | 280    |
| Value----- | S1OPEN | S2OPEN | S3OPEN | S4OPEN | S5OPEN |
| .d:DK      | 1      | 3      | 3      | 2      | 9      |
| .m:Missing | 16     | 8      | 2      | 4      |        |
| .r:Refuse  | 2      | 2      | 6      | 3      | 5      |
| .u:Unmar   | 4051   | 4009   | 4782   | 4847   | 5227   |
| .v:SP NR   | 283    | 131    | 349    | 280    | 501    |
| 0.No       | 10754  | 9463   | 10486  | 9546   | 7333   |
| 1.Yes      | 79     | 88     | 95     | 97     | 114    |

How Constructed

RwOPEN indicates whether the respondent is currently receiving any retirement or widowhood pension not already included in public and private pensions (RwPUBPEN and RwPENINC). RwOPEN considers pensions from the US Social Security, other institutions (different from the ones included in RwPUBPEN and RwPENINC), and a pension from an individual. Other pensions such as Disability or Work Accident, or Other Pensions are included in the MHAS but not in the construction of RwOPEN.

A value of 0 indicates the respondent is not receiving any other pension. A value of 1 indicates the respondent is receiving at least one other pension. RwOPEN is assigned special missing values .d or .r, if they answered don't know or refused, respectively. RwOPEN is also assigned the special missing value

.m if the section was not completed. The variable is set to plain missing (.) for respondents who did not respond to the current wave.

SWOPEN indicates whether the current wave's spouse is receiving any other pension, and is taken from the spouse's values of RWOPEN. In addition to the special missing codes used in RWOPEN, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Pension questions are asked only to the financial respondent about the financial respondent's pension income and, if married, the financial respondent's spouse's pension income. If the respondent is the financial respondent, then measures concerning the financial respondent are assigned to the respondent and those about the financial respondent's spouse are assigned to the respondent's spouse. However, if the respondent's spouse is the financial respondent, then measures about the financial respondent are assigned to the respondent's spouse and those concerning the financial respondent's spouse are assigned to the respondent.

## Cross Wave Differences in MHAS

The pension income questions in the MHAS, from Section K (Pension, Income and Assets), changed across waves. In Waves 1 and 2, the financial respondent had the option to report only one pension. However, starting in Wave 3 they can report up to three different pensions, for both retirement and widowhood pensions.

## Differences with the RAND HRS/Harmonized HRS

Components included in Harmonized MHAS and RAND HRS are slightly different representing different institutional arrangements in each country. In the MHAS, RWOPEN was created to supplement the information in RWPUBPEN and RWPENINC. In particular, to include other institutional arrangements such as the US Social Security, other institutions (different from the ones included in RWPUBPEN and RWPENINC), and a pension from an individual.

## MHAS Variables Used

|             |  |
|-------------|--|
| Wave 1:     |  |
| K55A        | retirement pension   |
| K56_1       | source of retirement pension                               |
| K61A        | spouse received retirement pension                         |
| K62_1       | source of retirement pension of spouse                     |
| Wave 2:     |  |
| K58A        | retirement pension   |
| K59A        | source of retirement pension                               |
| K64C        | spouse received retirement pension                         |
| K65C        | source of retirement pension of spouse                     |
| Wave 3:     |  |
| K58A_12     | Last year: Respondent retirement income pension            |
| K59_1_05_12 | Respondent's retirement pension source_US Social Security  |
| K59_1_06_12 | Respondent's retirement pension source_Other Institution   |
| K59_1_07_12 | Respondent's retirement pension source_A Person            |
| K64C_12     | Last year: Respondent's spouse received retirement pension |
| K65_1_05_12 | Spouse's retirement pension source_US Social Security      |
| K65_1_06_12 | Spouse's retirement pension source_Other Institution       |
| K65_1_07_12 | Spouse's retirement pension source_A Person                |
| Wave 4:     |  |
| K58A_15     | Last year: Did respondent receive pension income from r    |
| K59_1_05_15 | Respondent's retirement pension source: US Social Security |
| K59_1_06_15 | Respondent's retirement pension source: Other Institution  |
| K59_1_07_15 | Respondent's retirement pension source: A Person           |
| K59_2_05_15 | Respondent's widowhood pension source: US Social Security  |
| K59_2_06_15 | Respondent's widowhood pension source: Other Institution   |
| K59_2_07_15 | Respondent's widowhood pension source: A Person            |
| K64C_15     | Last year: Did respondent's spouse receive retirement p    |

|             |   |
|-------------|---|
| K65_1_05_15 | Spouse's retirement pension source: US Social Security  |
| K65_1_06_15 | Spouse's retirement pension source: Other Institution   |
| K65_1_07_15 | Spouse's retirement pension source: A Person            |
| K65_2_05_15 | Spouse's widowhood pension income source: US Social Sec |
| K65_2_06_15 | Spouse's widowhood pension income source: Other Institu |
| K65_2_07_15 | Spouse's widowhood pension income source: A Person      |

Wave 5:

|            |  |
|------------|--|
| K58A_18    | Last year: Did respondent receive pension income from r  |
| K59_1_1_18 | Respondent's retirement pension source (First Pension)   |
| K59_1_2_18 | Respondent's retirement pension source (Second Pension)  |
| K59_2_1_18 | Respondent's widowhood pension source (First Pension)    |
| K59_2_2_18 | Respondent's widowhood pension source (Second Pension)   |
| K64C_18    | Last year: Did respondent's spouse receive retirement p  |
| K65_1_1_18 | Spouse's retirement pension source (First Pension)       |
| K65_1_2_18 | Spouse's retirement pension source (Second Pension)      |
| K65_2_1_18 | Spouse's widowhood pension income source (First Pension) |
| K65_2_2_18 | Spouse's widowhood pension income source (Second Pensio  |



### Age When Started to Receive a Public Pension

| Wave | Variable | Label   | Type |
|------|----------|---|------|
| 1    | R1PUBAGE | r1pubage: w1 R Age when started to receive public pension | Cont |
| 2    | R2PUBAGE | r2pubage: w2 R Age when started to receive public pension | Cont |
| 5    | R5PUBAGE | r5pubage: w5 R Age when started to receive public pension | Cont |
| 1    | S1PUBAGE | s1pubage: w1 S Age when started to receive public pension | Cont |
| 2    | S2PUBAGE | s2pubage: w2 S Age when started to receive public pension | Cont |
| 5    | S5PUBAGE | s5pubage: w5 S Age when started to receive public pension | Cont |

### Descriptive Statistics

| Variable | N    | Mean  | Std Dev | Minimum | Maximum |
|----------|------|-------|---------|---------|---------|
| R1PUBAGE | 1866 | 58.42 | 9.76    | 9.00    | 89.00   |
| R2PUBAGE | 1983 | 58.05 | 9.39    | 8.00    | 93.00   |
| R5PUBAGE | 2305 | 59.70 | 9.89    | 10.00   | 99.00   |
| S1PUBAGE | 1023 | 58.27 | 8.65    | 9.00    | 87.00   |
| S2PUBAGE | 1124 | 58.04 | 8.40    | 8.00    | 83.00   |
| S5PUBAGE | 752  | 58.68 | 8.86    | 10.00   | 82.00   |

### How Constructed

RwPUBAGE indicates the age when the respondent started receiving a public pension, from retirement or widowhood. RwPUBAGE was derived using the year the respondent reported they started to receive a pension and the respondent's birth year or age, if they currently receive a public pension. RwPUBAGE is assigned special missing values .d or .r, if they answered don't know or refused, respectively. RwPUBAGE is also assigned special missing values .n if the respondent is currently not receiving a public pension and .i if the year reported is beyond each wave (i.e. higher than 2001 in Wave 1). It is also assigned the special missing value .m if the section was not completed. The variable is set to plain missing (.) for respondents who did not respond to the current wave.

SwPUBAGE indicates the current wave's spouse age when they started receiving a public pension, and is taken from the spouse's values of RwPUBAGE. In addition to the special missing codes used in RwPUBAGE, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Pension questions are asked only to the financial respondent about the financial respondent's pension income and, if married, the financial respondent's spouse's pension income. If the respondent is the financial respondent, then measures concerning the financial respondent are assigned to the respondent and those about the financial respondent's spouse are assigned to the respondent's spouse. However, if the respondent's spouse is the financial respondent, then measures about the financial respondent are assigned to the respondent's spouse and those concerning the financial respondent's spouse are assigned to the respondent.

### Cross Wave Differences in MHAS

The pension income information is obtained from the MHAS, Section K (Pension, Income and Assets) changed across waves. In Waves 1 and 2, the financial respondent had the option to report only one pension. In Waves 3 and 4 they can report up to three different pensions, for both retirement and widowhood pensions. Starting in Wave 5 they can report up to two different pensions, for both retirement and widowhood pensions.

In Waves 1 to 3, the financial respondent could only give information about the year they started receiving the pension, the income received, and whether the spouse (if married) could continue to receive the pension after the death of the respondent for one pension. Since at Waves 3 and 4 respondents can

report up to three different pensions, for both retirement and widowhood pensions, and it was not possible to trace if the reported years belong to a public, private, or other pension, RWPUBAGE was not created in those waves. Starting in Wave 5, since respondents were able to report up to two pensions and it was possible to correctly identify the year for each type of pension, RWPUBAGE was constructed again.

### Differences with the RAND HRS/Harmonized HRS

Components included in RWPUBAGE in the Harmonized MHAS and RWSAGEB in the RAND HRS are slightly different for public pensions representing different institutional arrangements in each country. However, we kept the concepts included as comparable as possible.

### MHAS Variables Used

#### Wave 1:

|       |  |
|-------|--|
| K56_1 | source of retirement pension           |
| K56_2 | source of widowhood pension            |
| K57_1 | start of retirement pension            |
| K62_1 | source of retirement pension of spouse |
| K62_2 | source of widowhood pension of spouse  |
| K63_1 | start of retirement pension of spouse  |

#### Wave 2:

|      |  |
|------|--|
| K59A | source of retirement pension           |
| K59B | source of widowhood pension            |
| K60A | start of retirement pension            |
| K65C | source of retirement pension of spouse |
| K65D | source of widowhood pension of spouse  |
| K66C | start of retirement pension of spouse  |

#### Wave 5:

|            |   |
|------------|---|
| K58A_18    | Last year: Did respondent receive pension income from r |
| K59_1_1_18 | Respondent's retirement pension source (First Pension)  |
| K59_1_2_18 | Respondent's retirement pension source (Second Pension) |
| K59_2_1_18 | Respondent's widowhood pension source (First Pension)   |
| K59_2_2_18 | Respondent's widowhood pension source (Second Pension)  |
| K60_1_1_18 | Year respondent started to receive his/her (first) reti |
| K60_1_2_18 | Year respondent started to receive his/her (second) ret |
| K60_2_1_18 | Year respondent started to receive (first) widowhood pe |
| K60_2_2_18 | Year respondent started to receive (second) widowhood p |
| K64C_18    | Last year: Did respondent's spouse receive retirement p |
| K65_1_1_18 | Spouse's retirement pension source (First Pension)      |
| K65_1_2_18 | Spouse's retirement pension source (Second Pension)     |
| K65_2_1_18 | Spouse's widowhood pension income source (First Pension |
| K65_2_2_18 | Spouse's widowhood pension income source (Second Pensio |
| K66_1_1_18 | Year spouse started to receive (first) retirement pensi |
| K66_1_2_18 | Year spouse started to receive (second) retirement pens |
| K66_2_1_18 | Year spouse started to receive (first) widowhood pensio |
| K66_2_2_18 | Year spouse started to receive (second) widowhood pensi |

### Age When Started to Receive a Private Pension

| Wave | Variable | Label  | Type |
|------|----------|--|------|
| 1    | R1PENAGE | r1penage: w1 R Age when started to receive private pension | Cont |
| 2    | R2PENAGE | r2penage: w2 R Age when started to receive private pension | Cont |
| 5    | R5PENAGE | r5penage: w5 R Age when started to receive private pension | Cont |
| 1    | S1PENAGE | s1penage: w1 S Age when started to receive private pension | Cont |
| 2    | S2PENAGE | s2penage: w2 S Age when started to receive private pension | Cont |
| 5    | S5PENAGE | s5penage: w5 S Age when started to receive private pension | Cont |

### Descriptive Statistics

| Variable | N  | Mean  | Std Dev | Minimum | Maximum |
|----------|----|-------|---------|---------|---------|
| R1PENAGE | 26 | 54.12 | 8.89    | 31.00   | 70.00   |
| R2PENAGE | 17 | 58.41 | 10.95   | 37.00   | 82.00   |
| R5PENAGE | 13 | 54.77 | 9.90    | 39.00   | 81.00   |
| S1PENAGE | 14 | 53.36 | 8.50    | 31.00   | 68.00   |
| S2PENAGE | 12 | 59.83 | 12.33   | 37.00   | 82.00   |
| S5PENAGE | 4  | 63.00 | 13.29   | 49.00   | 81.00   |

### How Constructed

RwPENAGE indicates the age when the respondent started receiving a private pension, from retirement or widowhood. RwPENAGE was derived using the year the respondent reported they started to receive a pension and the respondent's birth year or age, if they currently receives a private pension. RwPENAGE is assigned special missing values .d or .r, if they answered don't know or refused, respectively. RwPENAGE is also assigned special missing values .n if the respondent is currently not receiving a private pension and .i if the year reported is beyond each wave (i.e. higher than 2001 in Wave 1). It is also assigned the special missing value .m if the section was not completed. The variable is set to plain missing (.) for respondents who did not respond to the current wave.

SwPENAGE indicates the current wave's spouse age when they started receiving a private pension, and is taken from the spouse's values of RwPENAGE. In addition to the special missing codes used in RwPENAGE, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Pension questions are asked only to the financial respondent about the financial respondent's pension income and, if married, the financial respondent's spouse's pension income. If the respondent is the financial respondent, then measures concerning the financial respondent are assigned to the respondent and those about the financial respondent's spouse are assigned to the respondent's spouse. However, if the respondent's spouse is the financial respondent, then measures about the financial respondent are assigned to the respondent's spouse and those concerning the financial respondent's spouse are assigned to the respondent.

### Cross Wave Differences in MHAS

The pension income information is obtained from the MHAS, Section K (Pension, Income and Assets) changed across waves. In Waves 1 and 2, the financial respondent had the option to report only one pension. In Waves 3 and 4 they can report up to three different pensions, for both retirement and widowhood pensions. Starting in Wave 5 they can report up to two different pensions.

In Waves 1 to 3, the financial respondent could only give information about the year they started receiving the pension, the income received, and whether the spouse (if married) could continue after the death of the respondent for one pension. Since at Waves 3 and 4 respondents can report up to three different pensions, for both retirement and widowhood pensions, and it was not possible to trace if the

reported years belong to a public, private, or other pension, RWPENAGE was not created in Waves 3 and 4. Starting in Wave 5, since respondents were able to report up to two pensions and it was possible to correctly identify the year for each type of pension, RWPENAGE was constructed again.

## Differences with the RAND HRS/Harmonized HRS

Components included in Harmonized MHAS and RAND HRS are slightly different for private pensions representing different institutional arrangements in each country. However, we kept the concepts included as comparable as possible.

## MHAS Variables Used

### Wave 1:

|       |  |
|-------|--|
| K56_1 | source of retirement pension           |
| K56_2 | source of widowhood pension            |
| K57_1 | start of retirement pension            |
| K62_1 | source of retirement pension of spouse |
| K62_2 | source of widowhood pension of spouse  |
| K63_1 | start of retirement pension of spouse  |

### Wave 2:

|      |  |
|------|--|
| K59A | source of retirement pension           |
| K59B | source of widowhood pension            |
| K60A | start of retirement pension            |
| K65C | source of retirement pension of spouse |
| K65D | source of widowhood pension of spouse  |
| K66C | start of retirement pension of spouse  |

### Wave 5:

|            |   |
|------------|---|
| K58A_18    | Last year: Did respondent receive pension income from r |
| K59_1_1_18 | Respondent's retirement pension source (First Pension)  |
| K59_1_2_18 | Respondent's retirement pension source (Second Pension) |
| K59_2_1_18 | Respondent's widowhood pension source (First Pension)   |
| K59_2_2_18 | Respondent's widowhood pension source (Second Pension)  |
| K60_1_1_18 | Year respondent started to receive his/her (first) reti |
| K60_1_2_18 | Year respondent started to receive his/her (second) ret |
| K60_2_1_18 | Year respondent started to receive (first) widowhood pe |
| K60_2_2_18 | Year respondent started to receive (second) widowhood p |
| K64C_18    | Last year: Did respondent's spouse receive retirement p |
| K65_1_1_18 | Spouse's retirement pension source (First Pension)      |
| K65_1_2_18 | Spouse's retirement pension source (Second Pension)     |
| K65_2_1_18 | Spouse's widowhood pension income source (First Pension |
| K65_2_2_18 | Spouse's widowhood pension income source (Second Pensio |
| K66_1_1_18 | Year spouse started to receive (first) retirement pensi |
| K66_1_2_18 | Year spouse started to receive (second) retirement pens |
| K66_2_1_18 | Year spouse started to receive (first) widowhood pensio |
| K66_2_2_18 | Year spouse started to receive (second) widowhood pensi |

Whether Current Public Pension(s) Can Continue

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1SSIC   | r1ssic: w1 R Whether current public pension can continue | Categ |
| 2    | R2SSIC   | r2ssic: w2 R Whether current public pension can continue | Categ |
| 5    | R5SSIC   | r5ssic: w5 R Whether current public pension can continue | Categ |
| 1    | S1SSIC   | s1ssic: w1 S Whether current public pension can continue | Categ |
| 2    | S2SSIC   | s2ssic: w2 S Whether current public pension can continue | Categ |
| 5    | S5SSIC   | s5ssic: w5 S Whether current public pension can continue | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1SSIC   | 10625 | 0.07 | 0.26    | 0.00    | 1.00    |
| R2SSIC   | 9484  | 0.10 | 0.30    | 0.00    | 1.00    |
| R5SSIC   | 11021 | 0.13 | 0.33    | 0.00    | 1.00    |
| S1SSIC   | 10625 | 0.07 | 0.26    | 0.00    | 1.00    |
| S2SSIC   | 9484  | 0.10 | 0.30    | 0.00    | 1.00    |
| S5SSIC   | 7370  | 0.17 | 0.38    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----     | R1SSIC | R2SSIC | R5SSIC |
|----------------|--------|--------|--------|
| .d:DK          | 112    | 68     | 353    |
| .m:Missing     | 16     | 8      |        |
| .n:not married | 4538   | 4140   | 5728   |
| .r:Refuse      | 83     | 4      | 12     |
| 0.No           | 9861   | 8512   | 9636   |
| 1.Yes          | 764    | 972    | 1385   |

| Value----- | S1SSIC | S2SSIC | S5SSIC |
|------------|--------|--------|--------|
| .d:DK      | 112    | 68     | 85     |
| .m:Missing | 16     | 8      |        |
| .r:Refuse  | 83     | 4      | 6      |
| .u:Unmar   | 4065   | 4009   | 5227   |
| .v:SP NR   | 285    | 131    | 501    |
| 0.No       | 9861   | 8512   | 6122   |
| 1.Yes      | 764    | 972    | 1248   |

How Constructed

RwSSIC indicates whether the respondent's spouse could receive part of the respondent's current public pension(s), from retirement or widowhood, if the respondent were to die. RwSSIC is coded as 0 for no and 1 for yes. RwSSIC is assigned special missing values .d or .r, if they answered don't know or refused, respectively. RwSSIC is assigned special missing value .n if the respondent is currently not married. It is also assigned the special missing value .m if the section was not completed. The variable is set to plain missing (.) for respondents who did not respond to the current wave.

SwSSIC indicates whether the current wave's spouse's public pension(s) can continue if the respondent's spouse were to die, and is taken from the spouse's values of RwSSIC. In addition to the special missing codes used in RwSSIC, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Pension questions are asked only to the financial respondent about the financial respondent's pension income and, if married, the financial respondent's spouse's pension income. If the respondent is the financial respondent, then measures concerning the financial respondent are assigned to the respondent

and those about the financial respondent's spouse are assigned to the respondent's spouse. However, if the respondent's spouse is the financial respondent, then measures about the financial respondent are assigned to the respondent's spouse and those concerning the financial respondent's spouse are assigned to the respondent.

## Cross Wave Differences in MHAS

The pension income information is obtained from the MHAS, Section K (Pension, Income and Assets) changed across waves. In Waves 1 and 2, the financial respondent had the option to report only one pension. In Waves 3 and 4 they can report up to three different pensions, for both retirement and widowhood pensions. Starting in Wave 5 they can report up to two different pensions, for both retirement and widowhood pensions.

In Waves 1 and 2, the financial respondent could only give information regarding the year they started receiving the pension, the income received, and whether the spouse (if married) could continue to receive the pension after the death of the respondent for one pension. In Waves 3 and 4 respondents can report up to three different pensions, for both retirement and widowhood pensions, and it was not possible to trace if the variables belong to a public, private, or other pension. As such, it was not possible to create RwSSIC in Waves 3 and 4. Starting in Wave 5 respondents can report up to two different pensions, and it was possible to trace if the variables belonged to a public, private, or other pension, and so RwSSIC is available again.

## Differences with the RAND HRS/Harmonized HRS

Components included in Harmonized MHAS and RAND HRS are slightly different for private pensions representing different institutional arrangements in each country. However, we kept the concepts included as comparable as possible.

## MHAS Variables Used

### Wave 1:

|       |   |
|-------|---|
| K55A  | retirement pension                                      |
| K56_1 | source of retirement pension                            |
| K60_1 | retirement pension goes to spouse                       |
| K61A  | spouse received retirement pension                      |
| K62_1 | source of retirement pension of spouse                  |
| K66_1 | would you receive spouse's retirement pension if he/she |

### Wave 2:

|      |  |
|------|--|
| K58A | retirement pension                     |
| K59A | source of retirement pension           |
| K64C | spouse received retirement pension     |
| K65C | source of retirement pension of spouse |

### Wave 5:

|            |   |
|------------|---|
| K58A_18    | Last year: Did respondent receive pension income from r |
| K59_1_1_18 | Respondent's retirement pension source (First Pension)  |
| K59_1_2_18 | Respondent's retirement pension source (Second Pension) |
| K59_2_1_18 | Respondent's widowhood pension source (First Pension)   |
| K59_2_2_18 | Respondent's widowhood pension source (Second Pension)  |
| K63_1_1_18 | At death: Could this (first) retirement pension go to s |
| K63_1_2_18 | At death: Could this (second) retirement pension go to  |
| K63_2_1_18 | At death: Could this (first) widowhood pension go to sp |
| K63_2_2_18 | At death: Could this (second) widowhood pension go to s |
| K64C_18    | Last year: Did respondent's spouse receive retirement p |
| K65_1_1_18 | Spouse's retirement pension source (First Pension)      |
| K65_1_2_18 | Spouse's retirement pension source (Second Pension)     |
| K65_2_1_18 | Spouse's widowhood pension income source (First Pension |
| K65_2_2_18 | Spouse's widowhood pension income source (Second Pensio |
| K69_1_1_18 | At spouse's death: Could respondent receive this (first |
| K69_1_2_18 | At spouse's death: Could respondent receive this (secon |
| K69_2_1_18 | At spouses' death: Could respondent receive this (first |
| K69_2_2_18 | At spouses' death: Could respondent receive this (secon |

Whether Current Private Pension Can Continue

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1PENIC  | r1penic: w1 R Whether current private pension can continue | Categ |
| 2    | R2PENIC  | r2penic: w2 R Whether current private pension can continue | Categ |
| 5    | R5PENIC  | r5penic: w5 R Whether current private pension can continue | Categ |
| 1    | S1PENIC  | s1penic: w1 S Whether current private pension can continue | Categ |
| 2    | S2PENIC  | s2penic: w2 S Whether current private pension can continue | Categ |
| 5    | S5PENIC  | s5penic: w5 S Whether current private pension can continue | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1PENIC  | 10831 | 0.00 | 0.03    | 0.00    | 1.00    |
| R2PENIC  | 9551  | 0.00 | 0.03    | 0.00    | 1.00    |
| R5PENIC  | 11109 | 0.00 | 0.03    | 0.00    | 1.00    |
| S1PENIC  | 10831 | 0.00 | 0.03    | 0.00    | 1.00    |
| S2PENIC  | 9551  | 0.00 | 0.03    | 0.00    | 1.00    |
| S5PENIC  | 7442  | 0.00 | 0.03    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----     | R1PENIC | R2PENIC | R5PENIC |
|----------------|---------|---------|---------|
| .d:DK          | 2       | 3       | 265     |
| .m:Missing     | 16      | 8       |         |
| .n:not married | 4538    | 4140    | 5728    |
| .r:Refuse      | 3       | 2       | 12      |
| 0.No           | 10820   | 9541    | 11099   |
| 1.Yes          | 11      | 10      | 10      |

| Value----- | S1PENIC | S2PENIC | S5PENIC |
|------------|---------|---------|---------|
| .d:DK      | 2       | 3       | 13      |
| .m:Missing | 16      | 8       |         |
| .r:Refuse  | 3       | 2       | 6       |
| .u:Unmar   | 4051    | 4009    | 5227    |
| .v:SP NR   | 283     | 131     | 501     |
| 0.No       | 10820   | 9541    | 7433    |
| 1.Yes      | 11      | 10      | 9       |

How Constructed

RwPENIC indicates whether the respondent's spouse could receive part of the respondent's current private pension, from retirement or widowhood, if the respondent were to die. RwPENIC is coded as 0 for no and 1 for yes. RwPENIC is assigned special missing values .d or .r, if they answered don't know or refused, respectively. RwPENIC is assigned special missing value .n if the respondent is currently not married. It is also assigned the special missing value .m if the section was not completed. The variable is set to plain missing (.) for respondents who did not respond to the current wave.

SwPENIC indicates whether the current wave's spouse's private pension can continue if the respondent's spouse were to die, and is taken from the spouse's values of RwPENIC. In addition to the special missing codes used in RwPENIC, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

Pension questions are asked only to the financial respondent about the financial respondent's pension income and, if married, the financial respondent's spouse's pension income. If the respondent is the financial respondent, then measures concerning the financial respondent are assigned to the respondent

and those about the financial respondent's spouse are assigned to the respondent's spouse. However, if the respondent's spouse is the financial respondent, then measures about the financial respondent are assigned to the respondent's spouse and those concerning the financial respondent's spouse are assigned to the respondent.

## Cross Wave Differences in MHAS

The pension income information is obtained from the MHAS, Section K (Pension, Income and Assets) changed across waves. In Waves 1 and 2, the financial respondent had the option to report only one pension. In Waves 3 and 4 they can report up to three different pensions, for both retirement and widowhood pensions. Starting in Wave 5 they can report up to two different pensions, for both retirement and widowhood pensions.

In Waves 1 and 2, the financial respondent could only give information regarding the year they started receiving the pension, the income received, and whether the spouse (if married) could continue after the death of the respondent for one pension. In Waves 3 and 4 respondents can report up to three different pensions, for both retirement and widowhood pensions, and it was not possible to trace if the variables belong to a public, private, or other pension. As such, it was not possible to create RwPENIC in Waves 3 and 4. Starting in Wave 5 respondents can report up to two different pensions and it was possible to trace if the variables belonged to a public, private, or other pension, and so RwPENIC is available again.

## Differences with the RAND HRS/Harmonized HRS

Components included in Harmonized MHAS and RAND HRS are slightly different for private pensions representing different institutional arrangements in each country. However, we kept the concepts included as comparable as possible.

## MHAS Variables Used

### Wave 1:

|       |   |
|-------|---|
| K55A  | retirement pension                                      |
| K56_1 | source of retirement pension                            |
| K60_1 | retirement pension goes to spouse                       |
| K61A  | spouse received retirement pension                      |
| K62_1 | source of retirement pension of spouse                  |
| K66_1 | would you receive spouse's retirement pension if he/she |

### Wave 2:

|      |  |
|------|--|
| K58A | retirement pension                     |
| K59A | source of retirement pension           |
| K64C | spouse received retirement pension     |
| K65C | source of retirement pension of spouse |

### Wave 5:

|            |   |
|------------|---|
| K58A_18    | Last year: Did respondent receive pension income from r |
| K59_1_1_18 | Respondent's retirement pension source (First Pension)  |
| K59_1_2_18 | Respondent's retirement pension source (Second Pension) |
| K59_2_1_18 | Respondent's widowhood pension source (First Pension)   |
| K59_2_2_18 | Respondent's widowhood pension source (Second Pension)  |
| K63_1_1_18 | At death: Could this (first) retirement pension go to s |
| K63_1_2_18 | At death: Could this (second) retirement pension go to  |
| K63_2_1_18 | At death: Could this (first) widowhood pension go to sp |
| K63_2_2_18 | At death: Could this (second) widowhood pension go to s |
| K64C_18    | Last year: Did respondent's spouse receive retirement p |
| K65_1_1_18 | Spouse's retirement pension source (First Pension)      |
| K65_1_2_18 | Spouse's retirement pension source (Second Pension)     |
| K65_2_1_18 | Spouse's widowhood pension income source (First Pension |
| K65_2_2_18 | Spouse's widowhood pension income source (Second Pensio |
| K69_1_1_18 | At spouse's death: Could respondent receive this (first |
| K69_1_2_18 | At spouse's death: Could respondent receive this (secon |
| K69_2_1_18 | At spouses' death: Could respondent receive this (first |
| K69_2_2_18 | At spouses' death: Could respondent receive this (secon |



**Section K: Physical Measures**

|   |
|---|
| <b>Height, Weight, Waist and Hip Circumference Measurements</b> |
|---|

| Wave | Variable  | Label  | Type  |
|------|-----------|--|-------|
| 1    | R1MHEIGHT | r1mheight: w1 R Measured Height in meters                    | Cont  |
| 2    | R2MHEIGHT | r2mheight: w2 R Measured Height in meters                    | Cont  |
| 3    | R3MHEIGHT | r3mheight: w3 R Measured Height in meters                    | Cont  |
| 1    | S1MHEIGHT | s1mheight: w1 S Measured Height in meters                    | Cont  |
| 2    | S2MHEIGHT | s2mheight: w2 S Measured Height in meters                    | Cont  |
| 3    | S3MHEIGHT | s3mheight: w3 S Measured Height in meters                    | Cont  |
| 1    | R1HTCOMP  | r1htcomp: w1 R willing & able to complete height measurement | Categ |
| 2    | R2HTCOMP  | r2htcomp: w2 R willing & able to complete height measurement | Categ |
| 3    | R3HTCOMP  | r3htcomp: w3 R willing & able to complete height measurement | Categ |
| 1    | S1HTCOMP  | s1htcomp: w1 S willing & able to complete height measurement | Categ |
| 2    | S2HTCOMP  | s2htcomp: w2 S willing & able to complete height measurement | Categ |
| 3    | S3HTCOMP  | s3htcomp: w3 S willing & able to complete height measurement | Categ |
| 1    | R1MWEIGHT | r1mweight: w1 R Measured Weight in kilograms                 | Cont  |
| 2    | R2MWEIGHT | r2mweight: w2 R Measured Weight in kilograms                 | Cont  |
| 3    | R3MWEIGHT | r3mweight: w3 R Measured Weight in kilograms                 | Cont  |
| 1    | S1MWEIGHT | s1mweight: w1 S Measured Weight in kilograms                 | Cont  |
| 2    | S2MWEIGHT | s2mweight: w2 S Measured Weight in kilograms                 | Cont  |
| 3    | S3MWEIGHT | s3mweight: w3 S Measured Weight in kilograms                 | Cont  |
| 1    | R1WTCOMP  | r1wtcomp: w1 R willing & able to complete weight measurement | Categ |
| 2    | R2WTCOMP  | r2wtcomp: w2 R willing & able to complete weight measurement | Categ |
| 3    | R3WTCOMP  | r3wtcomp: w3 R willing & able to complete weight measurement | Categ |
| 1    | S1WTCOMP  | s1wtcomp: w1 S willing & able to complete weight measurement | Categ |
| 2    | S2WTCOMP  | s2wtcomp: w2 S willing & able to complete weight measurement | Categ |
| 3    | S3WTCOMP  | s3wtcomp: w3 S willing & able to complete weight measurement | Categ |
| 1    | R1MBMI    | r1mbmi: w1 R Measured Body Mass Index=kg/m2                  | Cont  |
| 2    | R2MBMI    | r2mbmi: w2 R Measured Body Mass Index=kg/m2                  | Cont  |
| 3    | R3MBMI    | r3mbmi: w3 R Measured Body Mass Index=kg/m2                  | Cont  |
| 1    | S1MBMI    | s1mbmi: w1 S Measured Body Mass Index=kg/m2                  | Cont  |
| 2    | S2MBMI    | s2mbmi: w2 S Measured Body Mass Index=kg/m2                  | Cont  |
| 3    | S3MBMI    | s3mbmi: w3 S Measured Body Mass Index=kg/m2                  | Cont  |
| 1    | R1MBMICAT | r1mbmicat: w1 R Measured Body Mass Index Categorization      | Categ |
| 2    | R2MBMICAT | r2mbmicat: w2 R Measured Body Mass Index Categorization      | Categ |
| 3    | R3MBMICAT | r3mbmicat: w3 R Measured Body Mass Index Categorization      | Categ |
| 1    | S1MBMICAT | s1mbmicat: w1 S Measured Body Mass Index Categorization      | Categ |
| 2    | S2MBMICAT | s2mbmicat: w2 S Measured Body Mass Index Categorization      | Categ |
| 3    | S3MBMICAT | s3mbmicat: w3 S Measured Body Mass Index Categorization      | Categ |
| 1    | R1MWAIST  | r1mwaist: w1 R Measured Waist Circumference in cm            | Cont  |
| 2    | R2MWAIST  | r2mwaist: w2 R Measured Waist Circumference in cm            | Cont  |
| 3    | R3MWAIST  | r3mwaist: w3 R Measured Waist Circumference in cm            | Cont  |
| 1    | S1MWAIST  | s1mwaist: w1 S Measured Waist Circumference in cm            | Cont  |
| 2    | S2MWAIST  | s2mwaist: w2 S Measured Waist Circumference in cm            | Cont  |
| 3    | S3MWAIST  | s3mwaist: w3 S Measured Waist Circumference in cm            | Cont  |
| 1    | R1WATCOMP | r1watcomp: w1 R willing & able to complete waist measurement | Categ |
| 2    | R2WATCOMP | r2watcomp: w2 R willing & able to complete waist measurement | Categ |
| 3    | R3WATCOMP | r3watcomp: w3 R willing & able to complete waist measurement | Categ |

|   |            |  |       |
|---|------------|--|-------|
| 1 | S1WATCOMP  | s1watcomp: w1 S willing & able to complete waist measurement | Categ |
| 2 | S2WATCOMP  | s2watcomp: w2 S willing & able to complete waist measurement | Categ |
| 3 | S3WATCOMP  | s3watcomp: w3 S willing & able to complete waist measurement | Categ |
| 1 | R1MHIP     | r1mhip: w1 R Measured Hip Circumference in cm                | Cont  |
| 2 | R2MHIP     | r2mhip: w2 R Measured Hip Circumference in cm                | Cont  |
| 3 | R3MHIP     | r3mhip: w3 R Measured Hip Circumference in cm                | Cont  |
| 1 | S1MHIP     | s1mhip: w1 S Measured Hip Circumference in cm                | Cont  |
| 2 | S2MHIP     | s2mhip: w2 S Measured Hip Circumference in cm                | Cont  |
| 3 | S3MHIP     | s3mhip: w3 S Measured Hip Circumference in cm                | Cont  |
| 1 | R1HIPCOMP  | r1hipcomp: w1 R willing & able to complete hip measurement   | Categ |
| 2 | R2HIPCOMP  | r2hipcomp: w2 R willing & able to complete hip measurement   | Categ |
| 3 | R3HIPCOMP  | r3hipcomp: w3 R willing & able to complete hip measurement   | Categ |
| 1 | S1HIPCOMP  | s1hipcomp: w1 S willing & able to complete hip measurement   | Categ |
| 2 | S2HIPCOMP  | s2hipcomp: w2 S willing & able to complete hip measurement   | Categ |
| 3 | S3HIPCOMP  | s3hipcomp: w3 S willing & able to complete hip measurement   | Categ |
| 1 | R1MWHRATIO | r1mwhratio: w1 R Measured Waist to Hip Ratio                 | Cont  |
| 2 | R2MWHRATIO | r2mwhratio: w2 R Measured Waist to Hip Ratio                 | Cont  |
| 3 | R3MWHRATIO | r3mwhratio: w3 R Measured Waist to Hip Ratio                 | Cont  |
| 1 | S1MWHRATIO | s1mwhratio: w1 S Measured Waist to Hip Ratio                 | Cont  |
| 2 | S2MWHRATIO | s2mwhratio: w2 S Measured Waist to Hip Ratio                 | Cont  |
| 3 | S3MWHRATIO | s3mwhratio: w3 S Measured Waist to Hip Ratio                 | Cont  |

## Descriptive Statistics

| Variable  | N    | Mean  | Std Dev | Minimum | Maximum |
|-----------|------|-------|---------|---------|---------|
| R1MHEIGHT | 2537 | 1.57  | 0.10    | 0.98    | 2.00    |
| R2MHEIGHT | 2220 | 1.56  | 0.10    | 1.00    | 1.98    |
| R3MHEIGHT | 2049 | 1.55  | 0.10    | 1.28    | 1.90    |
| S1MHEIGHT | 1776 | 1.59  | 0.10    | 0.98    | 1.94    |
| S2MHEIGHT | 1550 | 1.58  | 0.10    | 1.00    | 1.98    |
| S3MHEIGHT | 1394 | 1.56  | 0.09    | 1.33    | 1.90    |
| R1HTCOMP  | 2813 | 0.90  | 0.30    | 0.00    | 1.00    |
| R2HTCOMP  | 2361 | 0.94  | 0.24    | 0.00    | 1.00    |
| R3HTCOMP  | 2086 | 0.98  | 0.13    | 0.00    | 1.00    |
| S1HTCOMP  | 1965 | 0.90  | 0.29    | 0.00    | 1.00    |
| S2HTCOMP  | 1635 | 0.95  | 0.22    | 0.00    | 1.00    |
| S3HTCOMP  | 1411 | 0.99  | 0.11    | 0.00    | 1.00    |
| R1MWEIGHT | 2537 | 68.68 | 14.15   | 24.00   | 150.00  |
| R2MWEIGHT | 2225 | 68.49 | 14.47   | 30.00   | 173.00  |
| R3MWEIGHT | 2057 | 69.65 | 14.98   | 32.35   | 150.00  |
| S1MWEIGHT | 1777 | 70.79 | 14.03   | 24.00   | 150.00  |
| S2MWEIGHT | 1557 | 70.43 | 14.34   | 35.00   | 173.00  |
| S3MWEIGHT | 1399 | 71.24 | 15.05   | 33.50   | 150.00  |
| R1WTCOMP  | 2813 | 0.90  | 0.30    | 0.00    | 1.00    |
| R2WTCOMP  | 2361 | 0.94  | 0.23    | 0.00    | 1.00    |
| R3WTCOMP  | 2086 | 0.99  | 0.12    | 0.00    | 1.00    |
| S1WTCOMP  | 1965 | 0.90  | 0.29    | 0.00    | 1.00    |
| S2WTCOMP  | 1635 | 0.95  | 0.21    | 0.00    | 1.00    |
| S3WTCOMP  | 1411 | 0.99  | 0.09    | 0.00    | 1.00    |

|            |      |        |       |       |        |
|------------|------|--------|-------|-------|--------|
| R1MBMI     | 2527 | 27.82  | 5.23  | 8.71  | 90.84  |
| R2MBMI     | 2216 | 27.99  | 5.41  | 14.54 | 73.61  |
| R3MBMI     | 2048 | 28.89  | 5.28  | 15.74 | 53.33  |
| S1MBMI     | 1770 | 28.18  | 5.28  | 8.71  | 90.84  |
| S2MBMI     | 1549 | 28.25  | 5.39  | 14.54 | 73.61  |
| S3MBMI     | 1394 | 29.05  | 5.30  | 15.74 | 53.33  |
| R1MBMICAT  | 2527 | 3.07   | 0.97  | 1.00  | 6.00   |
| R2MBMICAT  | 2216 | 3.10   | 1.00  | 1.00  | 6.00   |
| R3MBMICAT  | 2048 | 3.28   | 1.04  | 1.00  | 6.00   |
| S1MBMICAT  | 1770 | 3.14   | 0.96  | 1.00  | 6.00   |
| S2MBMICAT  | 1549 | 3.15   | 0.99  | 1.00  | 6.00   |
| S3MBMICAT  | 1394 | 3.30   | 1.04  | 1.00  | 6.00   |
| R1MWAIST   | 2531 | 97.44  | 12.96 | 40.00 | 194.00 |
| R2MWAIST   | 2220 | 98.95  | 12.52 | 50.00 | 180.00 |
| R3MWAIST   | 2053 | 98.08  | 12.53 | 48.10 | 165.60 |
| S1MWAIST   | 1768 | 98.26  | 12.68 | 46.00 | 194.00 |
| S2MWAIST   | 1550 | 99.54  | 12.30 | 51.00 | 180.00 |
| S3MWAIST   | 1396 | 98.72  | 12.46 | 62.00 | 163.80 |
| R1WATCOMP  | 2813 | 0.90   | 0.30  | 0.00  | 1.00   |
| R2WATCOMP  | 2361 | 0.94   | 0.24  | 0.00  | 1.00   |
| R3WATCOMP  | 2086 | 0.98   | 0.12  | 0.00  | 1.00   |
| S1WATCOMP  | 1965 | 0.90   | 0.30  | 0.00  | 1.00   |
| S2WATCOMP  | 1635 | 0.95   | 0.22  | 0.00  | 1.00   |
| S3WATCOMP  | 1411 | 0.99   | 0.10  | 0.00  | 1.00   |
| R1MHIP     | 2529 | 105.63 | 12.16 | 45.00 | 192.00 |
| R2MHIP     | 2220 | 105.56 | 11.96 | 50.00 | 156.00 |
| R3MHIP     | 2054 | 103.66 | 11.22 | 75.20 | 168.50 |
| S1MHIP     | 1768 | 106.25 | 12.09 | 59.00 | 192.00 |
| S2MHIP     | 1550 | 105.90 | 11.60 | 50.00 | 150.00 |
| S3MHIP     | 1396 | 103.63 | 11.17 | 77.45 | 168.50 |
| R1HIPCOMP  | 2813 | 0.90   | 0.30  | 0.00  | 1.00   |
| R2HIPCOMP  | 2361 | 0.94   | 0.24  | 0.00  | 1.00   |
| R3HIPCOMP  | 2086 | 0.98   | 0.12  | 0.00  | 1.00   |
| S1HIPCOMP  | 1965 | 0.90   | 0.30  | 0.00  | 1.00   |
| S2HIPCOMP  | 1635 | 0.95   | 0.22  | 0.00  | 1.00   |
| S3HIPCOMP  | 1411 | 0.99   | 0.10  | 0.00  | 1.00   |
| R1MWHRATIO | 2527 | 0.92   | 0.09  | 0.40  | 1.96   |
| R2MWHRATIO | 2219 | 0.94   | 0.09  | 0.46  | 2.16   |
| R3MWHRATIO | 2053 | 0.95   | 0.08  | 0.55  | 1.68   |
| S1MWHRATIO | 1766 | 0.93   | 0.09  | 0.45  | 1.96   |
| S2MWHRATIO | 1549 | 0.94   | 0.09  | 0.46  | 2.16   |
| S3MWHRATIO | 1396 | 0.95   | 0.08  | 0.66  | 1.68   |

Categorical Variable Codes

|            |          |          |          |
|------------|----------|----------|----------|
| Value----- | R1HTCOMP | R2HTCOMP | R3HTCOMP |
| .m:Missing | 131      |          | 218      |
| .s:Skip    | 12242    | 11343    | 13419    |
| 0.no       | 276      | 141      | 37       |
| 1.yes      | 2537     | 2220     | 2049     |

| Value----- | S1HTCOMP | S2HTCOMP | S3HTCOMP |
|------------|----------|----------|----------|
| .m:Missing | 95       |          | 141      |
| .s:Skip    | 8588     | 7929     | 9040     |
| .u:Unmar   | 4205     | 4009     | 4782     |
| .v:SP NR   | 333      | 131      | 349      |
| 0.no       | 189      | 85       | 17       |
| 1.yes      | 1776     | 1550     | 1394     |

| Value----- | R1WTCOMP | R2WTCOMP | R3WTCOMP |
|------------|----------|----------|----------|
| .m:Missing | 131      |          | 218      |
| .s:Skip    | 12242    | 11343    | 13419    |
| 0.no       | 276      | 136      | 29       |
| 1.yes      | 2537     | 2225     | 2057     |

| Value----- | S1WTCOMP | S2WTCOMP | S3WTCOMP |
|------------|----------|----------|----------|
| .m:Missing | 95       |          | 141      |
| .s:Skip    | 8588     | 7929     | 9040     |
| .u:Unmar   | 4205     | 4009     | 4782     |
| .v:SP NR   | 333      | 131      | 349      |
| 0.no       | 188      | 78       | 12       |
| 1.yes      | 1777     | 1557     | 1399     |

| Value-----                  | R1MBMICAT | R2MBMICAT | R3MBMICAT |
|-----------------------------|-----------|-----------|-----------|
| .m:Missing                  | 131       |           | 218       |
| .n:not willing/able         | 134       | 34        | 37        |
| .r:Refuse                   | 141       | 97        |           |
| .s:Skip                     | 12242     | 11343     | 13419     |
| .x:tried but unable         | 11        | 14        | 1         |
| 1.Underweight (lt 18.5)     | 36        | 35        | 15        |
| 2.Normal (18.5-24.9)        | 707       | 593       | 468       |
| 3.Pre-obesity (25-29.9)     | 1062      | 936       | 806       |
| 4.Obesity class 1 (30-34.9) | 523       | 467       | 510       |
| 5.obesity class 2 (35-39.9) | 153       | 129       | 181       |
| 6.obesity class 3 (40+)     | 46        | 56        | 68        |

| Value-----                  | S1MBMICAT | S2MBMICAT | S3MBMICAT |
|-----------------------------|-----------|-----------|-----------|
| .m:Missing                  | 95        |           | 141       |
| .n:not willing/able         | 89        | 21        | 17        |
| .r:Refuse                   | 100       | 57        |           |
| .s:Skip                     | 8588      | 7929      | 9040      |
| .u:Unmar                    | 4205      | 4009      | 4782      |
| .v:SP NR                    | 333       | 131       | 349       |
| .x:tried but unable         | 6         | 8         |           |
| 1.Underweight (lt 18.5)     | 14        | 15        | 8         |
| 2.Normal (18.5-24.9)        | 452       | 395       | 310       |
| 3.Pre-obesity (25-29.9)     | 763       | 650       | 556       |
| 4.Obesity class 1 (30-34.9) | 390       | 358       | 350       |
| 5.obesity class 2 (35-39.9) | 115       | 86        | 121       |
| 6.obesity class 3 (40+)     | 36        | 45        | 49        |

| Value----- | R1WATCOMP | R2WATCOMP | R3WATCOMP |
|------------|-----------|-----------|-----------|
| .m:Missing | 131       |           | 218       |
| .s:Skip    | 12242     | 11343     | 13419     |
| 0.no       | 282       | 141       | 33        |
| 1.yes      | 2531      | 2220      | 2053      |

| Value----- | S1WATCOMP | S2WATCOMP | S3WATCOMP |
|------------|-----------|-----------|-----------|
| .m:Missing | 95        |           | 141       |
| .s:Skip    | 8588      | 7929      | 9040      |
| .u:Unmar   | 4205      | 4009      | 4782      |
| .v:SP NR   | 333       | 131       | 349       |
| 0.no       | 197       | 85        | 15        |
| 1.yes      | 1768      | 1550      | 1396      |

| Value----- | R1HIPCOMP | R2HIPCOMP | R3HIPCOMP |
|------------|-----------|-----------|-----------|
| .m:Missing | 131       |           | 218       |
| .s:Skip    | 12242     | 11343     | 13419     |
| 0.no       | 284       | 141       | 32        |
| 1.yes      | 2529      | 2220      | 2054      |

| Value----- | S1HIPCOMP | S2HIPCOMP | S3HIPCOMP |
|------------|-----------|-----------|-----------|
| .m:Missing | 95        |           | 141       |

|          |  |      |      |      |
|----------|--|------|------|------|
| .s:Skip  |  | 8588 | 7929 | 9040 |
| .u:Unmar |  | 4205 | 4009 | 4782 |
| .v:SP NR |  | 333  | 131  | 349  |
| 0.no     |  | 197  | 85   | 15   |
| 1.yes    |  | 1768 | 1550 | 1396 |

## How Constructed

RwMHEIGHT and RwMWEIGHT are the respective measured height and weight variables, taken from a subsample of the MHAS. Height is given in meters and weight in kilograms. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. Also, a special missing value .x is used if they tried to measure the height or weight but couldn't do it and a special missing value .n is used if they couldn't stand up or the measurements were not taken for the respondent's safety. Refused and didn't try responses are assigned .r, and other missing responses of these variables are assigned special missing value .m. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwHTCOMP and RwWTCOMP indicate whether the respondent is willing and able to complete the height and weight measures, respectively. RwHTCOMP and RwWTCOMP are coded as 1 if the respondent understood the directions for the test, the respondent felt it would be safe to complete the test, and the interviewer was able to complete the measures. RwHTCOMP and RwWTCOMP are coded as 0 if they tried to measure the height or weight but couldn't do it, the respondent didn't try, couldn't stand up, the tests were not attempted for their safety, or they refused to complete the measures. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. Also other missing responses of these variables are assigned special missing value .m. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

SwMHEIGHT, SwHTCOMP, SwMWEIGHT, and SwWTCOMP are the measures of the respondent's spouse and are taken directly from the spouse's RwMHEIGHT, RwHTCOMP, RwMWEIGHT, and RwWTCOMP, respectively. In addition to the special missing values employed by the respondent variables, the spouse variables employ two additional special missing codes. SwMHEIGHT, SwHTCOMP, SwMWEIGHT, and SwWTCOMP employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

RwMBMI is the respondent's body mass index and it is derived by dividing the respondent's measured weight (kg) by the squared value of their measured height, taken from a subsample of the MHAS. RwMBMICAT indicates the respondent's reported BMI category according to WHO standards. RwMBMICAT is coded as follows: 1.underweight, less than 18.5, 2.normal weight, 18.5 to 24.9, 3.pre-obesity, 25 to 25.9, 4.obesity class 1, 30 to 34.9, 5.obesity class 2, 35 to 39.9, 6.obesity class 3, greater than 40. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. Also, a special missing value .x is used if they tried to measure the height or weight but couldn't do it and a special missing value .n is used if they couldn't stand up or the measurements were not taken for the respondent's safety. Refused and didn't try responses are assigned .r, and other missing responses of these variables are assigned special missing value .m. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

SwMBMI and SwMBMICAT are the measures of the respondent's spouse and are taken directly from the spouse's RwMBMI and RwMBMICAT, respectively. In addition to the special missing values employed by the respondent variables, the spouse variables employ two additional special missing codes. SwMBMI and SwMBMICAT employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

RwMWAIST and RwMHIP are the respective measured waist and hip circumference variables (in centimeters), taken from a subsample of the MHAS. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. Also, a special missing value .x is used if they tried to measure the height or weight but couldn't do it and a special missing value .n is used if they couldn't stand up or the measurements were not taken for the respondent's safety. Refused and didn't try responses are assigned .r, and other missing responses of these variables are assigned special missing value .m. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwWATCOMP and RwHIPCOMP indicate whether the respondent is willing and able to complete the waist and hip circumference measurements, respectively. RwWATCOMP and RwHIPCOMP are coded as 1 if the respondent understood the directions for the test, the respondent felt it would be safe to complete the test, and the interviewer was able to complete the measures. RwWATCOMP and RwHIPCOMP are coded as 0 if they tried

to measure the waist and hip circumference but couldn't do it, the respondent didn't try, couldn't stand up, the tests were not attempted for their safety, or they refused to complete the measures. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. Also other missing responses of these variables are assigned special missing value .m. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

RwMWHRATIO is the respondent's waist to hip ratio, taken from a subsample of the MHAS. It is calculated by dividing the respondent's waist measurement by their hip measurement. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. Also, a special missing value .x is used if they tried to measure the waist or hip but couldn't do it and a special missing value .n is used if they couldn't stand up or the measurements were not taken for the respondent's safety. Refused and didn't try responses are assigned .r, and other missing responses of this variable are assigned special missing value .m. This variable is set to plain missing (.) for respondents who did not participate in the current wave.

SwMWAIST, SwMHIP, SwWATCOMP, SwHIPCOMP, and SwMWHRATIO are the measures of the respondent's spouse and are taken directly from the spouse's RwMWAIST, RwMHIP, RwWATCOMP, RwHIPCOMP, and RwMWHRATIO, respectively. In addition to the special missing values employed by the respondent variables, the spouse variables employ two additional special missing codes. SwMWAIST, SwMHIP, SwWATCOMP, SwHIPCOMP, and SwMWHRATIO employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

In Waves 1 and 2 anthropometric measures (including height, weight, and waist and hip circumference) were obtained from a sub-sample selected randomly from the baseline sample, distributed in the 32 states. However, in Wave 3 a new sub-sample was selected to complete anthropometric, biomarkers, and other measures. This sub-sample was limited to the complete sample of four states. Anthropometrics data was not collected in Waves 4 and 5.

In Waves 1 and 2, a single measurement was taken, which is used to assign values for these variables in these waves. In Wave 3, two measurements were taken, so the average of the two measurements is used to assign values for these variables in this wave.

## Differences with the RAND HRS/Harmonized HRS

The HRS does not complete a hip measurement, so RwMHIP, RwHIPCOMP, and RwMWHRATIO are not available in the RAND HRS or Harmonized HRS. The Harmonized HRS also includes RwHTFLR and RwWTFLR, indicating the floor surface during the respondent's height and weight measurements, RwSHOEH and RwSHOEW, indicating whether the respondent was wearing shoes during their height and weight measurements, and RwBULKY, indicating whether the respondent had on bulky clothes during their waist measurement.

## MHAS Variables Used

### Master File:

|              |  |
|--------------|--|
| ANTRO_01     | Selected for anthropometric measurement 2001           |
| ANTRO_03     | Selected for anthropometric measurement 2003           |
| SUBSAMPLE_12 | Selected subsample for Biomarkers/Anthropometrics 2012 |

### Wave 1:

|    |                                      |
|----|--------------------------------------|
| L1 | selected for anthropometric measures |
| L3 | weight                               |
| L4 | height                               |
| L5 | waist                                |
| L6 | hip                                  |

### Wave 2:

|     |                                      |
|-----|--------------------------------------|
| L1  | selected for anthropometric measures |
| L1A | present for measures                 |
| L3  | weight                               |
| L4  | height                               |
| L5  | waist                                |
| L6  | hip                                  |

### Wave 3:

|             |  |
|-------------|--|
| A0104_12    | Is the respondent able to stand without support?     |
| A0105_12    | Does the respondent have a visible spinal curvature? |
| A0106_12    | Can the respondent get a proper upright posture?     |
| CADERA1_12  | Hip circumference - first measurement                |
| CADERA2_12  | Hip circumference - second measurement               |
| CINTURA1_12 | Waist circumference - first measurement              |
| CINTURA2_12 | Waist circumference - second measurement             |
| ESTATU1_12  | Height - first measurement                           |
| ESTATU2_12  | Height - second measurement                          |
| PESO1_12    | Weight - first measurement                           |
| PESO2_12    | Weight - second measurement                          |



|   |
|---|
| <b>Height, Weight, Waist and Hip Circumference Measurements: Reason Didn't Complete</b> |
|---|

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 1    | R1HGHTSFT  | r1hghtsft: w1 R cannot stand/straighten to complete height m | Categ |
| 2    | R2HGHTSFT  | r2hghtsft: w2 R cannot stand/straighten to complete height m | Categ |
| 3    | R3HGHTSFT  | r3hghtsft: w3 R cannot stand/straighten to complete height m | Categ |
| 1    | S1HGHTSFT  | s1hghtsft: w1 S cannot stand/straighten to complete height m | Categ |
| 2    | S2HGHTSFT  | s2hghtsft: w2 S cannot stand/straighten to complete height m | Categ |
| 3    | S3HGHTSFT  | s3hghtsft: w3 S cannot stand/straighten to complete height m | Categ |
| 1    | R1HGHTTRYU | r1hghttryu: w1 R tried but could not complete height measure | Categ |
| 2    | R2HGHTTRYU | r2hghttryu: w2 R tried but could not complete height measure | Categ |
| 3    | R3HGHTTRYU | r3hghttryu: w3 R tried but could not complete height measure | Categ |
| 1    | S1HGHTTRYU | s1hghttryu: w1 S tried but could not complete height measure | Categ |
| 2    | S2HGHTTRYU | s2hghttryu: w2 S tried but could not complete height measure | Categ |
| 3    | S3HGHTTRYU | s3hghttryu: w3 S tried but could not complete height measure | Categ |
| 1    | R1HGHTREF  | r1hghtref: w1 R refused and did not try to complete height m | Categ |
| 2    | R2HGHTREF  | r2hghtref: w2 R refused and did not try to complete height m | Categ |
| 3    | R3HGHTREF  | r3hghtref: w3 R refused and did not try to complete height m | Categ |
| 1    | S1HGHTREF  | s1hghtref: w1 S refused and did not try to complete height m | Categ |
| 2    | S2HGHTREF  | s2hghtref: w2 S refused and did not try to complete height m | Categ |
| 3    | S3HGHTREF  | s3hghtref: w3 S refused and did not try to complete height m | Categ |
| 1    | R1WGHTSFT  | r1wghtsft: w1 R cannot stand to complete weight measurement  | Categ |
| 2    | R2WGHTSFT  | r2wghtsft: w2 R cannot stand to complete weight measurement  | Categ |
| 3    | R3WGHTSFT  | r3wghtsft: w3 R cannot stand to complete weight measurement  | Categ |
| 1    | S1WGHTSFT  | s1wghtsft: w1 S cannot stand to complete weight measurement  | Categ |
| 2    | S2WGHTSFT  | s2wghtsft: w2 S cannot stand to complete weight measurement  | Categ |
| 3    | S3WGHTSFT  | s3wghtsft: w3 S cannot stand to complete weight measurement  | Categ |
| 1    | R1WGHTTRYU | r1wghttryu: w1 R tried but could not complete weight measure | Categ |
| 2    | R2WGHTTRYU | r2wghttryu: w2 R tried but could not complete weight measure | Categ |
| 3    | R3WGHTTRYU | r3wghttryu: w3 R tried but could not complete weight measure | Categ |
| 1    | S1WGHTTRYU | s1wghttryu: w1 S tried but could not complete weight measure | Categ |
| 2    | S2WGHTTRYU | s2wghttryu: w2 S tried but could not complete weight measure | Categ |
| 3    | S3WGHTTRYU | s3wghttryu: w3 S tried but could not complete weight measure | Categ |
| 1    | R1WGHTREF  | r1wghtref: w1 R refused and did not try to complete weight m | Categ |
| 2    | R2WGHTREF  | r2wghtref: w2 R refused and did not try to complete weight m | Categ |
| 3    | R3WGHTREF  | r3wghtref: w3 R refused and did not try to complete weight m | Categ |
| 1    | S1WGHTREF  | s1wghtref: w1 S refused and did not try to complete weight m | Categ |
| 2    | S2WGHTREF  | s2wghtref: w2 S refused and did not try to complete weight m | Categ |
| 3    | S3WGHTREF  | s3wghtref: w3 S refused and did not try to complete weight m | Categ |
| 1    | R1WSTSFT   | r1wstsft: w1 R cannot stand to complete waist measurement    | Categ |
| 2    | R2WSTSFT   | r2wstsft: w2 R cannot stand to complete waist measurement    | Categ |
| 3    | R3WSTSFT   | r3wstsft: w3 R cannot stand to complete waist measurement    | Categ |
| 1    | S1WSTSFT   | s1wstsft: w1 S cannot stand to complete waist measurement    | Categ |
| 2    | S2WSTSFT   | s2wstsft: w2 S cannot stand to complete waist measurement    | Categ |
| 3    | S3WSTSFT   | s3wstsft: w3 S cannot stand to complete waist measurement    | Categ |
| 1    | R1WSTTRYU  | r1wsttryu: w1 R tried but could not complete waist measureme | Categ |
| 2    | R2WSTTRYU  | r2wsttryu: w2 R tried but could not complete waist measureme | Categ |
| 3    | R3WSTTRYU  | r3wsttryu: w3 R tried but could not complete waist measureme | Categ |

|   |           |  |       |
|---|-----------|--|-------|
| 1 | S1WSTTRYU | s1wsttryu: w1 S tried but could not complete waist measureme | Categ |
| 2 | S2WSTTRYU | s2wsttryu: w2 S tried but could not complete waist measureme | Categ |
| 3 | S3WSTTRYU | s3wsttryu: w3 S tried but could not complete waist measureme | Categ |
| 1 | R1WSTREF  | rlwstref: w1 R refused and did not try to complete waist mea | Categ |
| 2 | R2WSTREF  | r2wstref: w2 R refused and did not try to complete waist mea | Categ |
| 3 | R3WSTREF  | r3wstref: w3 R refused and did not try to complete waist mea | Categ |
| 1 | S1WSTREF  | s1wstref: w1 S refused and did not try to complete waist mea | Categ |
| 2 | S2WSTREF  | s2wstref: w2 S refused and did not try to complete waist mea | Categ |
| 3 | S3WSTREF  | s3wstref: w3 S refused and did not try to complete waist mea | Categ |
| 1 | R1HIPSFT  | rlhipsft: w1 R cannot stand to complete hip measurement      | Categ |
| 2 | R2HIPSFT  | r2hipsft: w2 R cannot stand to complete hip measurement      | Categ |
| 3 | R3HIPSFT  | r3hipsft: w3 R cannot stand to complete hip measurement      | Categ |
| 1 | S1HIPSFT  | s1hipsft: w1 S cannot stand to complete hip measurement      | Categ |
| 2 | S2HIPSFT  | s2hipsft: w2 S cannot stand to complete hip measurement      | Categ |
| 3 | S3HIPSFT  | s3hipsft: w3 S cannot stand to complete hip measurement      | Categ |
| 1 | R1HIPTRYU | rlhiptryu: w1 R tried but could not complete hip measurement | Categ |
| 2 | R2HIPTRYU | r2hiptryu: w2 R tried but could not complete hip measurement | Categ |
| 3 | R3HIPTRYU | r3hiptryu: w3 R tried but could not complete hip measurement | Categ |
| 1 | S1HIPTRYU | s1hiptryu: w1 S tried but could not complete hip measurement | Categ |
| 2 | S2HIPTRYU | s2hiptryu: w2 S tried but could not complete hip measurement | Categ |
| 3 | S3HIPTRYU | s3hiptryu: w3 S tried but could not complete hip measurement | Categ |
| 1 | R1HIPREF  | rlhipref: w1 R refused and did not try to complete hip measu | Categ |
| 2 | R2HIPREF  | r2hipref: w2 R refused and did not try to complete hip measu | Categ |
| 3 | R3HIPREF  | r3hipref: w3 R refused and did not try to complete hip measu | Categ |
| 1 | S1HIPREF  | s1hipref: w1 S refused and did not try to complete hip measu | Categ |
| 2 | S2HIPREF  | s2hipref: w2 S refused and did not try to complete hip measu | Categ |
| 3 | S3HIPREF  | s3hipref: w3 S refused and did not try to complete hip measu | Categ |

## Descriptive Statistics

| Variable   | N   | Mean | Std Dev | Minimum | Maximum |
|------------|-----|------|---------|---------|---------|
| R1HGHTSFT  | 276 | 0.48 | 0.50    | 0.00    | 1.00    |
| R2HGHTSFT  | 141 | 0.23 | 0.42    | 0.00    | 1.00    |
| R3HGHTSFT  | 37  | 1.00 | 0.00    | 1.00    | 1.00    |
| S1HGHTSFT  | 189 | 0.47 | 0.50    | 0.00    | 1.00    |
| S2HGHTSFT  | 85  | 0.24 | 0.43    | 0.00    | 1.00    |
| S3HGHTSFT  | 17  | 1.00 | 0.00    | 1.00    | 1.00    |
| R1HGHTTRYU | 276 | 0.03 | 0.17    | 0.00    | 1.00    |
| R2HGHTTRYU | 141 | 0.09 | 0.29    | 0.00    | 1.00    |
| R3HGHTTRYU | 37  | 0.00 | 0.00    | 0.00    | 0.00    |
| S1HGHTTRYU | 189 | 0.02 | 0.14    | 0.00    | 1.00    |
| S2HGHTTRYU | 85  | 0.09 | 0.29    | 0.00    | 1.00    |
| S3HGHTTRYU | 17  | 0.00 | 0.00    | 0.00    | 0.00    |
| R1HGHTREF  | 276 | 0.49 | 0.50    | 0.00    | 1.00    |
| R2HGHTREF  | 141 | 0.68 | 0.47    | 0.00    | 1.00    |
| R3HGHTREF  | 37  | 0.00 | 0.00    | 0.00    | 0.00    |
| S1HGHTREF  | 189 | 0.51 | 0.50    | 0.00    | 1.00    |
| S2HGHTREF  | 85  | 0.67 | 0.47    | 0.00    | 1.00    |
| S3HGHTREF  | 17  | 0.00 | 0.00    | 0.00    | 0.00    |

|            |     |      |      |      |      |
|------------|-----|------|------|------|------|
| R1WGHTSFT  | 276 | 0.48 | 0.50 | 0.00 | 1.00 |
| R2WGHTSFT  | 136 | 0.24 | 0.43 | 0.00 | 1.00 |
| R3WGHTSFT  | 29  | 0.93 | 0.26 | 0.00 | 1.00 |
| S1WGHTSFT  | 188 | 0.47 | 0.50 | 0.00 | 1.00 |
| S2WGHTSFT  | 78  | 0.26 | 0.44 | 0.00 | 1.00 |
| S3WGHTSFT  | 12  | 1.00 | 0.00 | 1.00 | 1.00 |
| R1WGHTTRYU | 276 | 0.03 | 0.16 | 0.00 | 1.00 |
| R2WGHTTRYU | 136 | 0.07 | 0.25 | 0.00 | 1.00 |
| R3WGHTTRYU | 29  | 0.07 | 0.26 | 0.00 | 1.00 |
| S1WGHTTRYU | 188 | 0.02 | 0.13 | 0.00 | 1.00 |
| S2WGHTTRYU | 78  | 0.05 | 0.22 | 0.00 | 1.00 |
| S3WGHTTRYU | 12  | 0.00 | 0.00 | 0.00 | 0.00 |
| R1WGHTREF  | 276 | 0.50 | 0.50 | 0.00 | 1.00 |
| R2WGHTREF  | 136 | 0.69 | 0.46 | 0.00 | 1.00 |
| R3WGHTREF  | 2   | 0.00 | 0.00 | 0.00 | 0.00 |
| S1WGHTREF  | 188 | 0.51 | 0.50 | 0.00 | 1.00 |
| S2WGHTREF  | 78  | 0.69 | 0.46 | 0.00 | 1.00 |
| S3WGHTREF  | 0   | .    | .    | .    | .    |
| R1WSTSFT   | 282 | 0.45 | 0.50 | 0.00 | 1.00 |
| R2WSTSFT   | 141 | 0.21 | 0.41 | 0.00 | 1.00 |
| R3WSTSFT   | 33  | 0.85 | 0.36 | 0.00 | 1.00 |
| S1WSTSFT   | 197 | 0.43 | 0.50 | 0.00 | 1.00 |
| S2WSTSFT   | 85  | 0.21 | 0.41 | 0.00 | 1.00 |
| S3WSTSFT   | 15  | 0.87 | 0.35 | 0.00 | 1.00 |
| R1WSTTRYU  | 282 | 0.02 | 0.14 | 0.00 | 1.00 |
| R2WSTTRYU  | 141 | 0.07 | 0.26 | 0.00 | 1.00 |
| R3WSTTRYU  | 33  | 0.06 | 0.24 | 0.00 | 1.00 |
| S1WSTTRYU  | 197 | 0.01 | 0.10 | 0.00 | 1.00 |
| S2WSTTRYU  | 85  | 0.07 | 0.26 | 0.00 | 1.00 |
| S3WSTTRYU  | 15  | 0.00 | 0.00 | 0.00 | 0.00 |
| R1WSTREF   | 282 | 0.53 | 0.50 | 0.00 | 1.00 |
| R2WSTREF   | 141 | 0.72 | 0.45 | 0.00 | 1.00 |
| R3WSTREF   | 33  | 0.09 | 0.29 | 0.00 | 1.00 |
| S1WSTREF   | 197 | 0.56 | 0.50 | 0.00 | 1.00 |
| S2WSTREF   | 85  | 0.72 | 0.45 | 0.00 | 1.00 |
| S3WSTREF   | 15  | 0.13 | 0.35 | 0.00 | 1.00 |
| R1HIPSFT   | 284 | 0.45 | 0.50 | 0.00 | 1.00 |
| R2HIPSFT   | 141 | 0.21 | 0.41 | 0.00 | 1.00 |
| R3HIPSFT   | 32  | 0.88 | 0.34 | 0.00 | 1.00 |
| S1HIPSFT   | 197 | 0.44 | 0.50 | 0.00 | 1.00 |
| S2HIPSFT   | 85  | 0.20 | 0.40 | 0.00 | 1.00 |
| S3HIPSFT   | 15  | 0.87 | 0.35 | 0.00 | 1.00 |
| R1HIPTRYU  | 284 | 0.02 | 0.14 | 0.00 | 1.00 |
| R2HIPTRYU  | 141 | 0.08 | 0.27 | 0.00 | 1.00 |
| R3HIPTRYU  | 32  | 0.03 | 0.18 | 0.00 | 1.00 |
| S1HIPTRYU  | 197 | 0.01 | 0.10 | 0.00 | 1.00 |
| S2HIPTRYU  | 85  | 0.08 | 0.28 | 0.00 | 1.00 |
| S3HIPTRYU  | 15  | 0.00 | 0.00 | 0.00 | 0.00 |

|          |     |      |      |      |      |
|----------|-----|------|------|------|------|
| R1HIPREF | 284 | 0.53 | 0.50 | 0.00 | 1.00 |
| R2HIPREF | 141 | 0.72 | 0.45 | 0.00 | 1.00 |
| R3HIPREF | 32  | 0.09 | 0.30 | 0.00 | 1.00 |
| S1HIPREF | 197 | 0.55 | 0.50 | 0.00 | 1.00 |
| S2HIPREF | 85  | 0.72 | 0.45 | 0.00 | 1.00 |
| S3HIPREF | 15  | 0.13 | 0.35 | 0.00 | 1.00 |

Categorical Variable Codes

|                   |            |            |            |
|-------------------|------------|------------|------------|
| Value-----        | R1HGHTSFT  | R2HGHTSFT  | R3HGHTSFT  |
| .c:completed test | 2537       | 2220       | 2049       |
| .m:Missing        | 131        |            | 218        |
| .s:Skip           | 12242      | 11343      | 13419      |
| 0.no              | 144        | 109        |            |
| 1.yes             | 132        | 32         | 37         |
| Value-----        | S1HGHTSFT  | S2HGHTSFT  | S3HGHTSFT  |
| .c:completed test | 1776       | 1550       | 1394       |
| .m:Missing        | 95         |            | 141        |
| .s:Skip           | 8588       | 7929       | 9040       |
| .u:Unmar          | 4205       | 4009       | 4782       |
| .v:SP NR          | 333        | 131        | 349        |
| 0.no              | 101        | 65         |            |
| 1.yes             | 88         | 20         | 17         |
| Value-----        | R1HGHTTRYU | R2HGHTTRYU | R3HGHTTRYU |
| .c:completed test | 2537       | 2220       | 2049       |
| .m:Missing        | 131        |            | 218        |
| .s:Skip           | 12242      | 11343      | 13419      |
| 0.no              | 268        | 128        | 37         |
| 1.yes             | 8          | 13         |            |
| Value-----        | S1HGHTTRYU | S2HGHTTRYU | S3HGHTTRYU |
| .c:completed test | 1776       | 1550       | 1394       |
| .m:Missing        | 95         |            | 141        |
| .s:Skip           | 8588       | 7929       | 9040       |
| .u:Unmar          | 4205       | 4009       | 4782       |
| .v:SP NR          | 333        | 131        | 349        |
| 0.no              | 185        | 77         | 17         |
| 1.yes             | 4          | 8          |            |
| Value-----        | R1HGHTREF  | R2HGHTREF  | R3HGHTREF  |
| .c:completed test | 2537       | 2220       | 2049       |
| .m:Missing        | 131        |            | 218        |
| .s:Skip           | 12242      | 11343      | 13419      |
| 0.no              | 140        | 45         | 37         |
| 1.yes             | 136        | 96         |            |
| Value-----        | S1HGHTREF  | S2HGHTREF  | S3HGHTREF  |
| .c:completed test | 1776       | 1550       | 1394       |
| .m:Missing        | 95         |            | 141        |
| .s:Skip           | 8588       | 7929       | 9040       |
| .u:Unmar          | 4205       | 4009       | 4782       |
| .v:SP NR          | 333        | 131        | 349        |
| 0.no              | 92         | 28         | 17         |
| 1.yes             | 97         | 57         |            |
| Value-----        | R1WGHTSFT  | R2WGHTSFT  | R3WGHTSFT  |
| .c:completed test | 2537       | 2225       | 2057       |
| .m:Missing        | 131        |            | 218        |
| .s:Skip           | 12242      | 11343      | 13419      |
| 0.no              | 144        | 103        | 2          |
| 1.yes             | 132        | 33         | 27         |
| Value-----        | S1WGHTSFT  | S2WGHTSFT  | S3WGHTSFT  |
| .c:completed test | 1777       | 1557       | 1399       |
| .m:Missing        | 95         |            | 141        |
| .s:Skip           | 8588       | 7929       | 9040       |

|                   |  |            |            |            |
|-------------------|--|------------|------------|------------|
| .u:Unmar          |  | 4205       | 4009       | 4782       |
| .v:SP NR          |  | 333        | 131        | 349        |
| 0.no              |  | 99         | 58         |            |
| 1.yes             |  | 89         | 20         | 12         |
| Value-----        |  | R1WGHTTRYU | R2WGHTTRYU | R3WGHTTRYU |
| .c:completed test |  | 2537       | 2225       | 2057       |
| .m:Missing        |  | 131        |            | 218        |
| .s:Skip           |  | 12242      | 11343      | 13419      |
| 0.no              |  | 269        | 127        | 27         |
| 1.yes             |  | 7          | 9          | 2          |
| Value-----        |  | S1WGHTTRYU | S2WGHTTRYU | S3WGHTTRYU |
| .c:completed test |  | 1777       | 1557       | 1399       |
| .m:Missing        |  | 95         |            | 141        |
| .s:Skip           |  | 8588       | 7929       | 9040       |
| .u:Unmar          |  | 4205       | 4009       | 4782       |
| .v:SP NR          |  | 333        | 131        | 349        |
| 0.no              |  | 185        | 74         | 12         |
| 1.yes             |  | 3          | 4          |            |
| Value-----        |  | R1WGHTREF  | R2WGHTREF  | R3WGHTREF  |
| .c:completed test |  | 2537       | 2225       | 2057       |
| .m:Missing        |  | 131        |            | 245        |
| .s:Skip           |  | 12242      | 11343      | 13419      |
| 0.no              |  | 139        | 42         | 2          |
| 1.yes             |  | 137        | 94         |            |
| Value-----        |  | S1WGHTREF  | S2WGHTREF  | S3WGHTREF  |
| .c:completed test |  | 1777       | 1557       | 1399       |
| .m:Missing        |  | 95         |            | 153        |
| .s:Skip           |  | 8588       | 7929       | 9040       |
| .u:Unmar          |  | 4205       | 4009       | 4782       |
| .v:SP NR          |  | 333        | 131        | 349        |
| 0.no              |  | 92         | 24         |            |
| 1.yes             |  | 96         | 54         |            |
| Value-----        |  | R1WSTSFT   | R2WSTSFT   | R3WSTSFT   |
| .c:completed test |  | 2531       | 2220       | 2053       |
| .m:Missing        |  | 131        |            | 218        |
| .s:Skip           |  | 12242      | 11343      | 13419      |
| 0.no              |  | 156        | 111        | 5          |
| 1.yes             |  | 126        | 30         | 28         |
| Value-----        |  | S1WSTSFT   | S2WSTSFT   | S3WSTSFT   |
| .c:completed test |  | 1768       | 1550       | 1396       |
| .m:Missing        |  | 95         |            | 141        |
| .s:Skip           |  | 8588       | 7929       | 9040       |
| .u:Unmar          |  | 4205       | 4009       | 4782       |
| .v:SP NR          |  | 333        | 131        | 349        |
| 0.no              |  | 112        | 67         | 2          |
| 1.yes             |  | 85         | 18         | 13         |
| Value-----        |  | R1WSTTRYU  | R2WSTTRYU  | R3WSTTRYU  |
| .c:completed test |  | 2531       | 2220       | 2053       |
| .m:Missing        |  | 131        |            | 218        |
| .s:Skip           |  | 12242      | 11343      | 13419      |
| 0.no              |  | 276        | 131        | 31         |
| 1.yes             |  | 6          | 10         | 2          |
| Value-----        |  | S1WSTTRYU  | S2WSTTRYU  | S3WSTTRYU  |
| .c:completed test |  | 1768       | 1550       | 1396       |
| .m:Missing        |  | 95         |            | 141        |
| .s:Skip           |  | 8588       | 7929       | 9040       |
| .u:Unmar          |  | 4205       | 4009       | 4782       |
| .v:SP NR          |  | 333        | 131        | 349        |
| 0.no              |  | 195        | 79         | 15         |
| 1.yes             |  | 2          | 6          |            |
| Value-----        |  | R1WSTREF   | R2WSTREF   | R3WSTREF   |
| .c:completed test |  | 2531       | 2220       | 2053       |
| .m:Missing        |  | 131        |            | 218        |
| .s:Skip           |  | 12242      | 11343      | 13419      |

|                   |  |           |           |           |
|-------------------|--|-----------|-----------|-----------|
| 0.no              |  | 132       | 40        | 30        |
| 1.yes             |  | 150       | 101       | 3         |
| Value-----        |  | S1WSTREF  | S2WSTREF  | S3WSTREF  |
| .c:completed test |  | 1768      | 1550      | 1396      |
| .m:Missing        |  | 95        |           | 141       |
| .s:Skip           |  | 8588      | 7929      | 9040      |
| .u:Unmar          |  | 4205      | 4009      | 4782      |
| .v:SP NR          |  | 333       | 131       | 349       |
| 0.no              |  | 87        | 24        | 13        |
| 1.yes             |  | 110       | 61        | 2         |
| Value-----        |  | R1HIPSFT  | R2HIPSFT  | R3HIPSFT  |
| .c:completed test |  | 2529      | 2220      | 2054      |
| .m:Missing        |  | 131       |           | 218       |
| .s:Skip           |  | 12242     | 11343     | 13419     |
| 0.no              |  | 156       | 112       | 4         |
| 1.yes             |  | 128       | 29        | 28        |
| Value-----        |  | S1HIPSFT  | S2HIPSFT  | S3HIPSFT  |
| .c:completed test |  | 1768      | 1550      | 1396      |
| .m:Missing        |  | 95        |           | 141       |
| .s:Skip           |  | 8588      | 7929      | 9040      |
| .u:Unmar          |  | 4205      | 4009      | 4782      |
| .v:SP NR          |  | 333       | 131       | 349       |
| 0.no              |  | 111       | 68        | 2         |
| 1.yes             |  | 86        | 17        | 13        |
| Value-----        |  | R1HIPTRYU | R2HIPTRYU | R3HIPTRYU |
| .c:completed test |  | 2529      | 2220      | 2054      |
| .m:Missing        |  | 131       |           | 218       |
| .s:Skip           |  | 12242     | 11343     | 13419     |
| 0.no              |  | 278       | 130       | 31        |
| 1.yes             |  | 6         | 11        | 1         |
| Value-----        |  | S1HIPTRYU | S2HIPTRYU | S3HIPTRYU |
| .c:completed test |  | 1768      | 1550      | 1396      |
| .m:Missing        |  | 95        |           | 141       |
| .s:Skip           |  | 8588      | 7929      | 9040      |
| .u:Unmar          |  | 4205      | 4009      | 4782      |
| .v:SP NR          |  | 333       | 131       | 349       |
| 0.no              |  | 195       | 78        | 15        |
| 1.yes             |  | 2         | 7         |           |
| Value-----        |  | R1HIPREF  | R2HIPREF  | R3HIPREF  |
| .c:completed test |  | 2529      | 2220      | 2054      |
| .m:Missing        |  | 131       |           | 218       |
| .s:Skip           |  | 12242     | 11343     | 13419     |
| 0.no              |  | 134       | 40        | 29        |
| 1.yes             |  | 150       | 101       | 3         |
| Value-----        |  | S1HIPREF  | S2HIPREF  | S3HIPREF  |
| .c:completed test |  | 1768      | 1550      | 1396      |
| .m:Missing        |  | 95        |           | 141       |
| .s:Skip           |  | 8588      | 7929      | 9040      |
| .u:Unmar          |  | 4205      | 4009      | 4782      |
| .v:SP NR          |  | 333       | 131       | 349       |
| 0.no              |  | 88        | 24        | 13        |
| 1.yes             |  | 109       | 61        | 2         |

## How Constructed

RwHGHTSFT and RwWGHTSFT indicate whether the respondent couldn't complete the height and weight measures because of safety reasons, respectively. RwHGHTSFT and RwWGHTSFT are coded as 1 if the respondent couldn't stand to complete the measures or the measurements were not attempted for the respondent's safety. RwHGHTSFT and RwWGHTSFT are coded as 0 if they tried to measure the height or weight but couldn't do it, the respondent didn't try, or refused to complete the measures. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the respondent completed the measurements. Also other missing responses of these variables are assigned special missing value .m. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

RwHGHTTRYU and RwwGHTRYU indicate whether the respondent tried to complete the height and weight measures but couldn't do it, respectively. RwHGHTSFT and RwwGHTRYU are coded as 1 if the respondent tried but couldn't complete the measures. RwHGHTSFT and RwwGHTRYU are coded as 0 if the respondent didn't try, couldn't stand, the measurements were not attempted for the respondent's safety, or they refused to complete the measures. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the respondent completed the measurements. Also other missing responses of these variables are assigned special missing value .m. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

RwHGHTREF and RwwGHTRYU indicate whether the respondent refused to complete the height and weight measures, respectively. RwHGHTREF and RwwGHTRYU are coded as 1 if the respondent refused or didn't try to complete the measures. RwHGHTREF and RwwGHTRYU are coded as 0 if they tried to measure the height or weight but couldn't do it, the respondent couldn't stand, or the measurements were not attempted for the respondent's safety. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the respondent completed the measurements. Also other missing responses of these variables are assigned special missing value .m. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

SwHGHTSFT, SwWGHTSFT, SwHGHTTRYU, SwWGHTTRYU, SwHGHTREF, and SwWGHTREF are the measures of the respondent's spouse and are taken directly from the spouse's RwHGHTSFT, RwwGHTRYU, SwHGHTTRYU, SwWGHTTRYU, SwHGHTREF, and SwWGHTREF, respectively. In addition to the special missing values employed by the respondent variables, the spouse variables employ two additional special missing codes. SwHGHTSFT, SwWGHTSFT, SwHGHTTRYU, SwWGHTTRYU, SwHGHTREF, and SwWGHTREF employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

RwWSTSFT and RwhIPSFT indicate whether the respondent couldn't complete the waist and hip circumference measurements because of safety reasons, respectively. RwWSTSFT and RwhIPSFT are coded as 1 if the respondent couldn't stand to complete the measures or the measurements were not attempted for the respondent's safety. RwWSTSFT and RwhIPSFT are coded as 0 if they tried to measure the waist and hip circumference but couldn't do it, the respondent didn't try, or refused to complete the measures. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the respondent completed the measurements. Also other missing responses of these variables are assigned special missing value .m. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

RwWSTTRYU and RwhIPTRYU indicate whether the respondent tried to complete the waist and hip circumference measurements but couldn't do it, respectively. RwWSTTRYU and RwhIPTRYU are coded as 1 if the respondent tried but couldn't complete the measures. RwWSTTRYU and RwhIPTRYU are coded as 0 if the respondent didn't try, couldn't stand, the measurements were not attempted for the respondent's safety, or they refused to complete the measures. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the respondent completed the measurements. Also other missing responses of these variables are assigned special missing value .m. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

RwWSTREF and RwhIPREF indicate whether the respondent refused to complete the waist and hip circumference measurements, respectively. RwWSTREF and RwhIPREF are coded as 1 if the respondent refused or didn't try to complete the measures. RwWSTREF and RwhIPREF are coded as 0 if they tried to measure waist and hip circumference measurements but couldn't do it, the respondent couldn't stand, or the measurements were not attempted for the respondent's safety. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the respondent completed the measurements. Also other missing responses of these variables are assigned special missing value .m. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

SwWSTSFT, SwHIPSFT, SwWSTTRYU, SwHIPTRYU, SwWSTREF, and SwHIPREF are the measures of the respondent's spouse and are taken directly from the spouse's RwWSTSFT, RwhIPSFT, SwWSTTRYU, SwHIPTRYU, SwWSTREF, and SwHIPREF, respectively. In addition to the special missing values employed by the respondent variables, the spouse variables employ two additional special missing codes. SwWSTSFT, SwHIPSFT, SwWSTTRYU, SwHIPTRYU, SwWSTREF, and SwHIPREF employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

In Waves 1 and 2 anthropometric measures (including height, weight, and waist and hip circumference) were obtained from a sub-sample selected randomly from the baseline sample, distributed in the 32 states. However, in Wave 3 a new sub-sample was selected to complete anthropometric, biomarkers, and other measures. This sub-sample was limited to the complete sample of four states. Anthropometrics data was not collected in Waves 4 and 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS does not complete a hip measurement, so `RwHIPSFT`, `RwHIPTRYU`, and `RwHIPREF` are not available in the RAND HRS or Harmonized HRS. The Harmonized HRS includes additional variables to indicate if the respondent did not complete the height, weight, and waist measurements due to faulty equipment or for other reasons. In the HRS, multiple reasons can be chosen to explain why the respondent did not complete the measurements, while a single reason is chosen to explain why the respondent did not complete the measurements in the MHAS.

## MHAS Variables Used

### Master File:

|                           |   |
|---------------------------|---|
| <code>ANTRO_01</code>     | Selected for anthropometric measurement 2001          |
| <code>ANTRO_03</code>     | Selected for anthropometric measurement 2003          |
| <code>SUBSAMPLE_12</code> | Selected subsample for Biomarkers/Antropometrics 2012 |

### Wave 1:

|                 |                                      |
|-----------------|--------------------------------------|
| <code>L1</code> | selected for anthropometric measures |
| <code>L3</code> | weight                               |
| <code>L4</code> | height                               |
| <code>L5</code> | waist                                |
| <code>L6</code> | hip                                  |

### Wave 2:

|                  |                                      |
|------------------|--------------------------------------|
| <code>L1</code>  | selected for anthropometric measures |
| <code>L1A</code> | present for measures                 |
| <code>L3</code>  | weight                               |
| <code>L4</code>  | height                               |
| <code>L5</code>  | waist                                |
| <code>L6</code>  | hip                                  |

### Wave 3:

|                          |  |
|--------------------------|--|
| <code>A0104_12</code>    | Is the respondent able to stand without support?     |
| <code>A0105_12</code>    | Does the respondent have a visible spinal curvature? |
| <code>A0106_12</code>    | Can the respondent get a proper upright posture?     |
| <code>CADERA1_12</code>  | Hip circumference - first measurement                |
| <code>CADERA2_12</code>  | Hip circumference - second measurement               |
| <code>CINTURA1_12</code> | Waist circumference - first measurement              |
| <code>CINTURA2_12</code> | Waist circumference - second measurement             |
| <code>ESTATU1_12</code>  | Height - first measurement                           |
| <code>ESTATU2_12</code>  | Height - second measurement                          |
| <code>PESO1_12</code>    | Weight - first measurement                           |
| <code>PESO2_12</code>    | Weight - second measurement                          |



Sitting Height

| Wave | Variable    | Label  | Type  |
|------|-------------|--|-------|
| 2    | R2SITHGHT   | r2sithght: w2 R Measured Sitting Height in cm                | Cont  |
| 3    | R3SITHGHT   | r3sithght: w3 R Measured Sitting Height in cm                | Cont  |
| 2    | S2SITHGHT   | s2sithght: w2 S Measured Sitting Height in cm                | Cont  |
| 3    | S3SITHGHT   | s3sithght: w3 S Measured Sitting Height in cm                | Cont  |
| 2    | R2CHAIRHGHT | r2chairhght: w2 R Chair Height in cm                         | Cont  |
| 3    | R3CHAIRHGHT | r3chairhght: w3 R Chair Height in cm                         | Cont  |
| 2    | S2CHAIRHGHT | s2chairhght: w2 S Chair Height in cm                         | Cont  |
| 3    | S3CHAIRHGHT | s3chairhght: w3 S Chair Height in cm                         | Cont  |
| 2    | R2STHTCOMP  | r2sthtcomp: w2 R willing & able to complete sitting height m | Categ |
| 3    | R3STHTCOMP  | r3sthtcomp: w3 R willing & able to complete sitting height m | Categ |
| 2    | S2STHTCOMP  | s2sthtcomp: w2 S willing & able to complete sitting height m | Categ |
| 3    | S3STHTCOMP  | s3sthtcomp: w3 S willing & able to complete sitting height m | Categ |

Descriptive Statistics

| Variable    | N    | Mean   | Std Dev | Minimum | Maximum |
|-------------|------|--------|---------|---------|---------|
| R2SITHGHT   | 2191 | 121.23 | 9.56    | 50.00   | 150.00  |
| R3SITHGHT   | 2048 | 125.26 | 6.65    | 91.00   | 160.10  |
| S2SITHGHT   | 1538 | 122.18 | 9.74    | 50.00   | 150.00  |
| S3SITHGHT   | 1394 | 126.04 | 6.47    | 91.00   | 160.10  |
| R2CHAIRHGHT | 2193 | 43.88  | 4.45    | 25.00   | 70.00   |
| R3CHAIRHGHT | 2048 | 43.82  | 4.01    | 30.00   | 69.00   |
| S2CHAIRHGHT | 1538 | 44.08  | 4.50    | 25.00   | 70.00   |
| S3CHAIRHGHT | 1394 | 43.77  | 4.02    | 30.00   | 68.55   |
| R2STHTCOMP  | 2361 | 0.93   | 0.26    | 0.00    | 1.00    |
| R3STHTCOMP  | 2086 | 0.98   | 0.13    | 0.00    | 1.00    |
| S2STHTCOMP  | 1635 | 0.94   | 0.24    | 0.00    | 1.00    |
| S3STHTCOMP  | 1411 | 0.99   | 0.11    | 0.00    | 1.00    |

Categorical Variable Codes

|            |            |            |
|------------|------------|------------|
| Value----- | R2STHTCOMP | R3STHTCOMP |
| .m:Missing |            | 218        |
| .s:Skip    | 11343      | 13419      |
| 0.no       | 170        | 38         |
| 1.yes      | 2191       | 2048       |
| Value----- | S2STHTCOMP | S3STHTCOMP |
| .m:Missing |            | 141        |
| .s:Skip    | 7929       | 9040       |
| .u:Unmar   | 4009       | 4782       |
| .v:SP NR   | 131        | 349        |
| 0.no       | 97         | 17         |
| 1.yes      | 1538       | 1394       |

How Constructed

RwSITHGHT is the measured sitting height variable and RwCHAIRHGHT is the chair height used to complete the measurement. RwSITHGHT and RwCHAIRHGHT are taken from a subsample of the MHAS and given in centimeters. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. Also, a special missing value .x is used if they tried to measure the sitting height but couldn't do it and a special missing value .n is used if they couldn't stop moving or cannot sit. Refused and didn't try responses are assigned .r, and other missing responses of these variables are assigned special missing value .m. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwSTHTCOMP indicates whether the respondent is willing and able to complete the sitting height measure. RwSTHTCOMP is coded as 1 if the respondent understood the directions for the test, the respondent felt it would be safe to complete the test, and the interviewer was able to complete the measures. RwSTHTCOMP is coded as 0 if they tried to measure the sitting height but couldn't do it, the respondent didn't try, couldn't stop moving, cannot sit, or refused to complete the measures. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. Also other missing responses of this variable are assigned special missing value .m. This measure is set to plain missing (.) for respondents who did not respond to the current wave.

SwSITHGHT, SwCHAIRHGHT, and SwSTHTCOMP are the measures of the respondent's spouse and are taken directly from the spouse's RwSITHGHT, RwCHAIRHGHT, and RwSTHTCOMP, respectively. In addition to the special missing values employed by the respondent variables, the spouse variables employ two additional special missing codes. SwSITHGHT, SwCHAIRHGHT, and SwSTHTCOMP employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

The sitting height measures are only available for waves 2 and 3. In wave 2 anthropometric measures (including height, weight, and waist and hip circumference) were obtained from a sub-sample selected randomly from the baseline sample, distributed in the 32 states. However, in wave 3 a new sub-sample was selected to complete anthropometric, biomarkers, and other measures. This sub-sample was limited to the complete sample of four states. Anthropometrics data was not collected in Waves 4 and 5.

In Wave 2, a single measurement was taken, which is used to assign values for these variables in this wave. In Wave 3, two measurements were taken, so the average of the two measurements is used to assign values for these variables in this wave.

The reasons the respondent could not complete the sitting height measurement changes between waves. In Wave 2, the option "cannot stand" is replaced with "cannot sit" in Wave 3.

## Differences with the RAND HRS/Harmonized HRS

The HRS does not complete a sitting height measurement, so these variables are not available in the RAND HRS or Harmonized HRS.

## MHAS Variables Used

### Master File:

|              |  |
|--------------|--|
| ANTRO_03     | Selected for anthropometric measurement 2003           |
| SUBSAMPLE_12 | Selected subsample for Biomarkers/Anthropometrics 2012 |

### Wave 2:

|      |                                      |
|------|--------------------------------------|
| L1   | selected for anthropometric measures |
| L1A  | present for measures                 |
| L7_1 | seated height                        |
| L7_2 | height of chair                      |

### Wave 3:

|            |  |
|------------|--|
| A0104_12   | Is the respondent able to stand without support?     |
| A0105_12   | Does the respondent have a visible spinal curvature? |
| A0106_12   | Can the respondent get a proper upright posture?     |
| ASENT1_12  | Sitting height - first measurement                   |
| ASENT2_12  | Sitting height - second measurement                  |
| ASILLA1_12 | Height of the chair - first measurement              |
| ASILLA2_12 | Height of the chair - second measurement             |

Sitting Height: Reason Didn't Complete

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 2    | R2STHTSFT  | r2sthtsft: w2 R cannot sit/straighten to complete sitting he | Categ |
| 3    | R3STHTSFT  | r3sthtsft: w3 R cannot sit/straighten to complete sitting he | Categ |
| 2    | S2STHTSFT  | s2sthtsft: w2 S cannot sit/straighten to complete sitting he | Categ |
| 3    | S3STHTSFT  | s3sthtsft: w3 S cannot sit/straighten to complete sitting he | Categ |
| 2    | R2STHTTRYU | r2sthttryu: w2 R tried but could not complete sitting height | Categ |
| 3    | R3STHTTRYU | r3sthttryu: w3 R tried but could not complete sitting height | Categ |
| 2    | S2STHTTRYU | s2sthttryu: w2 S tried but could not complete sitting height | Categ |
| 3    | S3STHTTRYU | s3sthttryu: w3 S tried but could not complete sitting height | Categ |
| 2    | R2STHTREF  | r2sthtref: w2 R refused and did not try to complete sitting  | Categ |
| 3    | R3STHTREF  | r3sthtref: w3 R refused and did not try to complete sitting  | Categ |
| 2    | S2STHTREF  | s2sthtref: w2 S refused and did not try to complete sitting  | Categ |
| 3    | S3STHTREF  | s3sthtref: w3 S refused and did not try to complete sitting  | Categ |

Descriptive Statistics

| Variable   | N   | Mean | Std Dev | Minimum | Maximum |
|------------|-----|------|---------|---------|---------|
| R2STHTSFT  | 170 | 0.15 | 0.36    | 0.00    | 1.00    |
| R3STHTSFT  | 38  | 0.97 | 0.16    | 0.00    | 1.00    |
| S2STHTSFT  | 97  | 0.16 | 0.37    | 0.00    | 1.00    |
| S3STHTSFT  | 17  | 1.00 | 0.00    | 1.00    | 1.00    |
| R2STHTTRYU | 170 | 0.09 | 0.28    | 0.00    | 1.00    |
| R3STHTTRYU | 38  | 0.03 | 0.16    | 0.00    | 1.00    |
| S2STHTTRYU | 97  | 0.06 | 0.24    | 0.00    | 1.00    |
| S3STHTTRYU | 17  | 0.00 | 0.00    | 0.00    | 0.00    |
| R2STHTREF  | 170 | 0.76 | 0.43    | 0.00    | 1.00    |
| R3STHTREF  | 38  | 0.00 | 0.00    | 0.00    | 0.00    |
| S2STHTREF  | 97  | 0.77 | 0.42    | 0.00    | 1.00    |
| S3STHTREF  | 17  | 0.00 | 0.00    | 0.00    | 0.00    |

Categorical Variable Codes

| Value-----        | R2STHTSFT  | R3STHTSFT  |
|-------------------|------------|------------|
| .c:completed test | 2191       | 2048       |
| .m:Missing        |            | 218        |
| .s:Skip           | 11343      | 13419      |
| 0.no              | 144        | 1          |
| 1.yes             | 26         | 37         |
| Value-----        | S2STHTSFT  | S3STHTSFT  |
| .c:completed test | 1538       | 1394       |
| .m:Missing        |            | 141        |
| .s:Skip           | 7929       | 9040       |
| .u:Unmar          | 4009       | 4782       |
| .v:SP NR          | 131        | 349        |
| 0.no              | 81         |            |
| 1.yes             | 16         | 17         |
| Value-----        | R2STHTTRYU | R3STHTTRYU |

|                   |  |            |            |
|-------------------|--|------------|------------|
| .c:completed test |  | 2191       | 2048       |
| .m:Missing        |  |            | 218        |
| .s:Skip           |  | 11343      | 13419      |
| 0.no              |  | 155        | 37         |
| 1.yes             |  | 15         | 1          |
| Value-----        |  | S2STHTTRYU | S3STHTTRYU |
| .c:completed test |  | 1538       | 1394       |
| .m:Missing        |  |            | 141        |
| .s:Skip           |  | 7929       | 9040       |
| .u:Unmar          |  | 4009       | 4782       |
| .v:SP NR          |  | 131        | 349        |
| 0.no              |  | 91         | 17         |
| 1.yes             |  | 6          |            |
| Value-----        |  | R2STHTREF  | R3STHTREF  |
| .c:completed test |  | 2191       | 2048       |
| .m:Missing        |  |            | 218        |
| .s:Skip           |  | 11343      | 13419      |
| 0.no              |  | 41         | 38         |
| 1.yes             |  | 129        |            |
| Value-----        |  | S2STHTREF  | S3STHTREF  |
| .c:completed test |  | 1538       | 1394       |
| .m:Missing        |  |            | 141        |
| .s:Skip           |  | 7929       | 9040       |
| .u:Unmar          |  | 4009       | 4782       |
| .v:SP NR          |  | 131        | 349        |
| 0.no              |  | 22         | 17         |
| 1.yes             |  | 75         |            |

## How Constructed

RwSTHTSFT indicates whether the respondent couldn't complete the sitting height measure because of safety reasons. RwSTHTSFT is coded as 1 if the respondent couldn't stop moving or cannot sit to complete the measure. RwSTHTSFT is coded as 0 if they tried to measure the sitting height but couldn't do it, the respondent didn't try, or refused to complete the measures. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the subject completed the measurements. Also other missing responses of this variable are assigned special missing value .m. This measure is set to plain missing (.) for respondents who did not respond to the current wave.

RwSTHTTRYU indicates whether the respondent tried to complete the sitting height measure but couldn't do it. RwSTHTTRYU is coded as 1 if the respondent tried but couldn't complete the measure. RwSTHTTRYU is coded as 0 if the respondent didn't try, couldn't stop moving, cannot sit, or refused to complete the measures. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the subject completed the measurements. Also other missing responses of this variable are assigned special missing value .m. This measure is set to plain missing (.) for respondents who did not respond to the current wave.

RwSTHTREF indicates whether the respondent refused to complete the sitting height measure. RwSTHTREF is coded as 1 if the respondent refused to complete the measure. RwSTHTREF is coded as 0 if they tried to measure the sitting height but couldn't do it, the respondent didn't try, couldn't stop moving, or cannot sit. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the subject completed the measurements. Also other missing responses of this variable are assigned special missing value .m. This measure is set to plain missing (.) for respondents who did not respond to the current wave.

SwSTHTSFT, SwSTHTTRYU, and SwSTHTREF are the measures of the respondent's spouse and are taken directly from the spouse's RwSTHTSFT, RwSTHTTRYU, and RwSTHTREF, respectively. In addition to the special missing values employed by the respondent variables, the spouse variables employ two additional special missing codes. SwSTHTSFT, SwSTHTTRYU, and SwSTHTREF employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

The sitting height measures are only available for Waves 2 and 3. In Wave 2 anthropometric measures (including height, weight, and waist and hip circumference) were obtained from a sub-sample selected randomly from the baseline sample, distributed in the 32 states. However, in Wave 3 a new sub-sample was selected to complete anthropometric, biomarkers, and other measures. This sub-sample was limited to the complete sample of four states. Anthropometrics data was not collected in Waves 4 and 5.

The reasons the respondent could not complete the sitting height measurement changes between waves. In Wave 2, the option "cannot stand" is replaced with "cannot sit" in Wave 3.

Differences with the RAND HRS/Harmonized HRS

The HRS does not complete a sitting height measurement, so these variables are not available in the RAND HRS or Harmonized HRS.

MHAS Variables Used

|              |  |
|--------------|--|
| Master File: |  |
| ANTRO_03     | Selected for anthropometric measurement 2003           |
| SUBSAMPLE_12 | Selected subsample for Biomarkers/Anthropometrics 2012 |
| Wave 2:      |  |
| L1           | selected for anthropometric measures                   |
| L1A          | present for measures                                   |
| L7_1         | seated height  |
| L7_2         | height of chair  |
| Wave 3:      |  |
| A0104_12     | Is the respondent able to stand without support?       |
| A0105_12     | Does the respondent have a visible spinal curvature?   |
| A0106_12     | Can the respondent get a proper upright posture?       |
| ASENT1_12    | Sitting height - first measurement                     |
| ASENT2_12    | Sitting height - second measurement                    |

|                     |
|---------------------|
| <b>Balance Test</b> |
|---------------------|

| Wave | Variable    | Label  | Type  |
|------|-------------|--|-------|
| 1    | R1BALRTSEC  | r1balrtsec: w1 R Right Foot Balance Results (sec)            | Cont  |
| 2    | R2BALRTSEC  | r2balrtsec: w2 R Right Foot Balance Results (sec)            | Cont  |
| 3    | R3BALRTSEC  | r3balrtsec: w3 R Right Foot Balance Results (sec)            | Cont  |
| 1    | S1BALRTSEC  | s1balrtsec: w1 S Right Foot Balance Results (sec)            | Cont  |
| 2    | S2BALRTSEC  | s2balrtsec: w2 S Right Foot Balance Results (sec)            | Cont  |
| 3    | S3BALRTSEC  | s3balrtsec: w3 S Right Foot Balance Results (sec)            | Cont  |
| 1    | R1BALRT     | r1balrt: w1 R Right Foot Balance Test Completed 10 sec       | Categ |
| 2    | R2BALRT     | r2balrt: w2 R Right Foot Balance Test Completed 10 sec       | Categ |
| 3    | R3BALRT     | r3balrt: w3 R Right Foot Balance Test Completed 10 sec       | Categ |
| 1    | S1BALRT     | s1balrt: w1 S Right Foot Balance Test Completed 10 sec       | Categ |
| 2    | S2BALRT     | s2balrt: w2 S Right Foot Balance Test Completed 10 sec       | Categ |
| 3    | S3BALRT     | s3balrt: w3 S Right Foot Balance Test Completed 10 sec       | Categ |
| 1    | R1BALRTCOMP | r1balrtcomp: w1 R willing & able to complete right foot bala | Categ |
| 2    | R2BALRTCOMP | r2balrtcomp: w2 R willing & able to complete right foot bala | Categ |
| 3    | R3BALRTCOMP | r3balrtcomp: w3 R willing & able to complete right foot bala | Categ |
| 1    | S1BALRTCOMP | s1balrtcomp: w1 S willing & able to complete right foot bala | Categ |
| 2    | S2BALRTCOMP | s2balrtcomp: w2 S willing & able to complete right foot bala | Categ |
| 3    | S3BALRTCOMP | s3balrtcomp: w3 S willing & able to complete right foot bala | Categ |
| 1    | R1BALLFSEC  | r1ballfsec: w1 R Left Foot Balance Results (sec)             | Cont  |
| 2    | R2BALLFSEC  | r2ballfsec: w2 R Left Foot Balance Results (sec)             | Cont  |
| 3    | R3BALLFSEC  | r3ballfsec: w3 R Left Foot Balance Results (sec)             | Cont  |
| 1    | S1BALLFSEC  | s1ballfsec: w1 S Left Foot Balance Results (sec)             | Cont  |
| 2    | S2BALLFSEC  | s2ballfsec: w2 S Left Foot Balance Results (sec)             | Cont  |
| 3    | S3BALLFSEC  | s3ballfsec: w3 S Left Foot Balance Results (sec)             | Cont  |
| 1    | R1BALLF     | r1ballf: w1 R Left Foot Balance Test Completed 10 sec        | Categ |
| 2    | R2BALLF     | r2ballf: w2 R Left Foot Balance Test Completed 10 sec        | Categ |
| 3    | R3BALLF     | r3ballf: w3 R Left Foot Balance Test Completed 10 sec        | Categ |
| 1    | S1BALLF     | s1ballf: w1 S Left Foot Balance Test Completed 10 sec        | Categ |
| 2    | S2BALLF     | s2ballf: w2 S Left Foot Balance Test Completed 10 sec        | Categ |
| 3    | S3BALLF     | s3ballf: w3 S Left Foot Balance Test Completed 10 sec        | Categ |
| 1    | R1BALLFCOMP | r1ballfcomp: w1 R willing & able to complete left foot balan | Categ |
| 2    | R2BALLFCOMP | r2ballfcomp: w2 R willing & able to complete left foot balan | Categ |
| 3    | R3BALLFCOMP | r3ballfcomp: w3 R willing & able to complete left foot balan | Categ |
| 1    | S1BALLFCOMP | s1ballfcomp: w1 S willing & able to complete left foot balan | Categ |
| 2    | S2BALLFCOMP | s2ballfcomp: w2 S willing & able to complete left foot balan | Categ |
| 3    | S3BALLFCOMP | s3ballfcomp: w3 S willing & able to complete left foot balan | Categ |

## Descriptive Statistics

| Variable   | N    | Mean | Std Dev | Minimum | Maximum |
|------------|------|------|---------|---------|---------|
| R1BALRTSEC | 2048 | 8.41 | 2.55    | 1.00    | 10.00   |
| R2BALRTSEC | 1887 | 8.29 | 2.78    | 1.00    | 10.00   |
| R3BALRTSEC | 1913 | 7.48 | 3.37    | 1.00    | 10.00   |
| S1BALRTSEC | 1477 | 8.57 | 2.45    | 1.00    | 10.00   |
| S2BALRTSEC | 1374 | 8.46 | 2.66    | 1.00    | 10.00   |

|             |      |      |      |      |       |
|-------------|------|------|------|------|-------|
| S3BALRTSEC  | 1332 | 7.72 | 3.24 | 1.00 | 10.00 |
| R1BALRT     | 2048 | 0.65 | 0.48 | 0.00 | 1.00  |
| R2BALRT     | 1887 | 0.67 | 0.47 | 0.00 | 1.00  |
| R3BALRT     | 1913 | 0.58 | 0.49 | 0.00 | 1.00  |
| S1BALRT     | 1477 | 0.68 | 0.47 | 0.00 | 1.00  |
| S2BALRT     | 1374 | 0.70 | 0.46 | 0.00 | 1.00  |
| S3BALRT     | 1332 | 0.61 | 0.49 | 0.00 | 1.00  |
| R1BALRTCOMP | 2759 | 0.74 | 0.44 | 0.00 | 1.00  |
| R2BALRTCOMP | 2361 | 0.80 | 0.40 | 0.00 | 1.00  |
| R3BALRTCOMP | 2086 | 0.92 | 0.28 | 0.00 | 1.00  |
| S1BALRTCOMP | 1925 | 0.77 | 0.42 | 0.00 | 1.00  |
| S2BALRTCOMP | 1635 | 0.84 | 0.37 | 0.00 | 1.00  |
| S3BALRTCOMP | 1411 | 0.94 | 0.23 | 0.00 | 1.00  |
| R1BALLFSEC  | 2036 | 8.20 | 2.73 | 1.00 | 10.00 |
| R2BALLFSEC  | 1872 | 8.18 | 2.82 | 1.00 | 10.00 |
| R3BALLFSEC  | 1916 | 7.29 | 3.39 | 1.00 | 10.00 |
| S1BALLFSEC  | 1472 | 8.37 | 2.64 | 1.00 | 10.00 |
| S2BALLFSEC  | 1366 | 8.34 | 2.70 | 1.00 | 10.00 |
| S3BALLFSEC  | 1334 | 7.54 | 3.29 | 1.00 | 10.00 |
| R1BALLF     | 2036 | 0.63 | 0.48 | 0.00 | 1.00  |
| R2BALLF     | 1872 | 0.65 | 0.48 | 0.00 | 1.00  |
| R3BALLF     | 1916 | 0.54 | 0.50 | 0.00 | 1.00  |
| S1BALLF     | 1472 | 0.66 | 0.47 | 0.00 | 1.00  |
| S2BALLF     | 1366 | 0.68 | 0.47 | 0.00 | 1.00  |
| S3BALLF     | 1334 | 0.58 | 0.49 | 0.00 | 1.00  |
| R1BALLFCOMP | 2758 | 0.74 | 0.44 | 0.00 | 1.00  |
| R2BALLFCOMP | 2361 | 0.79 | 0.41 | 0.00 | 1.00  |
| R3BALLFCOMP | 2086 | 0.92 | 0.27 | 0.00 | 1.00  |
| S1BALLFCOMP | 1924 | 0.77 | 0.42 | 0.00 | 1.00  |
| S2BALLFCOMP | 1635 | 0.84 | 0.37 | 0.00 | 1.00  |
| S3BALLFCOMP | 1411 | 0.95 | 0.23 | 0.00 | 1.00  |

Categorical Variable Codes

|                      |         |         |         |
|----------------------|---------|---------|---------|
| Value-----           | R1BALRT | R2BALRT | R3BALRT |
| .e:measured in error | 54      |         |         |
| .m:Missing           | 131     |         | 218     |
| .n:not willing/able  | 367     | 240     | 85      |
| .r:Refuse            | 225     | 97      |         |
| .s:Skip              | 12242   | 11343   | 13419   |
| .x:tried but unable  | 119     | 137     | 88      |
| 0.no                 | 712     | 615     | 801     |
| 1.yes                | 1336    | 1272    | 1112    |
| Value-----           | S1BALRT | S2BALRT | S3BALRT |
| .e:measured in error | 40      |         |         |
| .m:Missing           | 95      |         | 141     |
| .n:not willing/able  | 209     | 116     | 39      |
| .r:Refuse            | 172     | 62      |         |
| .s:Skip              | 8588    | 7929    | 9040    |
| .u:Unmar             | 4205    | 4009    | 4782    |
| .v:SP NR             | 333     | 131     | 349     |
| .x:tried but unable  | 67      | 83      | 40      |
| 0.no                 | 475     | 409     | 518     |
| 1.yes                | 1002    | 965     | 814     |

| Value-----           | R1BALRTCOMP | R2BALRTCOMP | R3BALRTCOMP |
|----------------------|-------------|-------------|-------------|
| .e:measured in error | 54          |             |             |
| .m:Missing           | 131         |             | 218         |
| .s:Skip              | 12242       | 11343       | 13419       |
| 0.no                 | 711         | 474         | 173         |
| 1.yes                | 2048        | 1887        | 1913        |

| Value-----           | S1BALRTCOMP | S2BALRTCOMP | S3BALRTCOMP |
|----------------------|-------------|-------------|-------------|
| .e:measured in error | 40          |             |             |
| .m:Missing           | 95          |             | 141         |
| .s:Skip              | 8588        | 7929        | 9040        |
| .u:Unmar             | 4205        | 4009        | 4782        |
| .v:SP NR             | 333         | 131         | 349         |
| 0.no                 | 448         | 261         | 79          |
| 1.yes                | 1477        | 1374        | 1332        |

| Value-----           | R1BALLF | R2BALLF | R3BALLF |
|----------------------|---------|---------|---------|
| .e:measured in error | 55      |         |         |
| .m:Missing           | 131     |         | 218     |
| .n:not willing/able  | 370     | 254     | 81      |
| .r:Refuse            | 230     | 97      |         |
| .s:Skip              | 12242   | 11343   | 13419   |
| .x:tried but unable  | 122     | 138     | 89      |
| 0.no                 | 746     | 646     | 876     |
| 1.yes                | 1290    | 1226    | 1040    |

| Value-----           | S1BALLF | S2BALLF | S3BALLF |
|----------------------|---------|---------|---------|
| .e:measured in error | 41      |         |         |
| .m:Missing           | 95      |         | 141     |
| .n:not willing/able  | 208     | 126     | 38      |
| .r:Refuse            | 177     | 62      |         |
| .s:Skip              | 8588    | 7929    | 9040    |
| .u:Unmar             | 4205    | 4009    | 4782    |
| .v:SP NR             | 333     | 131     | 349     |
| .x:tried but unable  | 67      | 81      | 39      |
| 0.no                 | 497     | 443     | 565     |
| 1.yes                | 975     | 923     | 769     |

| Value-----           | R1BALLFCOMP | R2BALLFCOMP | R3BALLFCOMP |
|----------------------|-------------|-------------|-------------|
| .e:measured in error | 55          |             |             |
| .m:Missing           | 131         |             | 218         |
| .s:Skip              | 12242       | 11343       | 13419       |
| 0.no                 | 722         | 489         | 170         |
| 1.yes                | 2036        | 1872        | 1916        |

| Value-----           | S1BALLFCOMP | S2BALLFCOMP | S3BALLFCOMP |
|----------------------|-------------|-------------|-------------|
| .e:measured in error | 41          |             |             |
| .m:Missing           | 95          |             | 141         |
| .s:Skip              | 8588        | 7929        | 9040        |
| .u:Unmar             | 4205        | 4009        | 4782        |
| .v:SP NR             | 333         | 131         | 349         |
| 0.no                 | 452         | 269         | 77          |
| 1.yes                | 1472        | 1366        | 1334        |

## How Constructed

RwBALRTSEC and RwBALLFSEC are the respective right and left foot balance test results, taken from a subsample of the MHAS and given in seconds. RwBALRT and RwBALLF indicate whether the respondent completed the balance test for at least 10 seconds, with the right and left foot, respectively. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. Also, a special missing value .x is used if the respondent tried to complete the test but couldn't do it and a special missing value .n is used if they had a missing or injured extremity, couldn't stand up, or did not try for safety reasons. Refused responses are assigned .r, and other missing responses of these variables are assigned special missing value .m. If the measurement was taken by mistake, then these variables are assigned special missing value .e. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwBALRTCOMP and RwBALLFCOMP indicate whether the respondent is willing and able to complete the balance test. RwSTHTCOMP is coded as 1 if the respondent understood the directions for the test, the respondent felt it would be safe to complete the test, and the interviewer was able to complete the measures.



RwSTHTCOMP is coded as 0 if the respondent tried to complete the test but couldn't do it, the respondent was missing a leg or was injured, the respondent didn't try, couldn't stand up, or refused to complete the measures. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. Also other missing responses of these variables are assigned special missing value .m. If the measurement was taken by mistake, then these variables are assigned special missing value .e. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

SwBALRTSEC, SwBALLFSEC, SwBALRT, SwBALLF, SwBALRTCOMP, and SwBALLFCOMP are the measures of the respondent's spouse and are taken directly from the spouse's RwBALRTSEC, RwBALLFSEC, RwBALRT, RwBALLF, RwBALRTCOMP, and RwBALLFCOMP, respectively. In addition to the special missing values employed by the respondent variables, the spouse variables employ two additional special missing codes. SwBALRTSEC, SwBALLFSEC, SwBALRT, SwBALLF, SwBALRTCOMP, and SwBALLFCOMP, employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

In Waves 1 and 2 anthropometric and performance measures (including the balance test) were obtained from a sub-sample selected randomly from the baseline sample, distributed in the 32 states. However, in Wave 3 a new sub-sample was selected to complete anthropometric and performance measures, biomarkers, and other measures. This sub-sample was limited to the complete sample of four states. Anthropometrics and performance measures data was not collected in Waves 4 and 5.

## Differences with the RAND HRS/Harmonized HRS

While the HRS completes balance tests, they are not comparable to those completed in the MHAS. As such, there are no comparable variables in the RAND HRS or Harmonized HRS.

## MHAS Variables Used

### Master File:

|              |   |
|--------------|---|
| ANTRO_01     | Selected for anthropometric measurement 2001          |
| ANTRO_03     | Selected for anthropometric measurement 2003          |
| SUBSAMPLE_12 | Selected subsample for Biomarkers/Antropometrics 2012 |

### Wave 1:

|      |                                      |
|------|--------------------------------------|
| L1   | selected for anthropometric measures |
| L9_1 | right foot                           |
| L9_2 | left foot                            |

### Wave 2:

|      |                                      |
|------|--------------------------------------|
| L1   | selected for anthropometric measures |
| L1A  | present for measures                 |
| L9_1 | right foot                           |
| L9_2 | left foot                            |

### Wave 3:

|           |                         |
|-----------|-------------------------|
| PIEDER_12 | Balance - on right foot |
| PIEIZQ_12 | Balance - on left foot  |

Balance Test: Reason Didn't Complete

| Wave | Variable  | Label  | Type  |
|------|-----------|--|-------|
| 1    | R1BALSFT  | r1balsft: w1 R cannot complete balance test for safety reaso | Categ |
| 2    | R2BALSFT  | r2balsft: w2 R cannot complete balance test for safety reaso | Categ |
| 3    | R3BALSFT  | r3balsft: w3 R cannot complete balance test for safety reaso | Categ |
| 1    | S1BALSFT  | s1balsft: w1 S cannot complete balance test for safety reaso | Categ |
| 2    | S2BALSFT  | s2balsft: w2 S cannot complete balance test for safety reaso | Categ |
| 3    | S3BALSFT  | s3balsft: w3 S cannot complete balance test for safety reaso | Categ |
| 1    | R1BALREF  | r1balref: w1 R refused and did not try to complete balance t | Categ |
| 2    | R2BALREF  | r2balref: w2 R refused and did not try to complete balance t | Categ |
| 3    | R3BALREF  | r3balref: w3 R refused and did not try to complete balance t | Categ |
| 1    | S1BALREF  | s1balref: w1 S refused and did not try to complete balance t | Categ |
| 2    | S2BALREF  | s2balref: w2 S refused and did not try to complete balance t | Categ |
| 3    | S3BALREF  | s3balref: w3 S refused and did not try to complete balance t | Categ |
| 1    | R1BALTRYU | r1baltryu: w1 R tried but could not complete balance test    | Categ |
| 2    | R2BALTRYU | r2baltryu: w2 R tried but could not complete balance test    | Categ |
| 3    | R3BALTRYU | r3baltryu: w3 R tried but could not complete balance test    | Categ |
| 1    | S1BALTRYU | s1baltryu: w1 S tried but could not complete balance test    | Categ |
| 2    | S2BALTRYU | s2baltryu: w2 S tried but could not complete balance test    | Categ |
| 3    | S3BALTRYU | s3baltryu: w3 S tried but could not complete balance test    | Categ |

Descriptive Statistics

| Variable  | N   | Mean | Std Dev | Minimum | Maximum |
|-----------|-----|------|---------|---------|---------|
| R1BALSFT  | 722 | 0.51 | 0.50    | 0.00    | 1.00    |
| R2BALSFT  | 489 | 0.52 | 0.50    | 0.00    | 1.00    |
| R3BALSFT  | 170 | 0.48 | 0.50    | 0.00    | 1.00    |
| S1BALSFT  | 452 | 0.46 | 0.50    | 0.00    | 1.00    |
| S2BALSFT  | 269 | 0.47 | 0.50    | 0.00    | 1.00    |
| S3BALSFT  | 77  | 0.49 | 0.50    | 0.00    | 1.00    |
| R1BALREF  | 722 | 0.32 | 0.47    | 0.00    | 1.00    |
| R2BALREF  | 489 | 0.20 | 0.40    | 0.00    | 1.00    |
| R3BALREF  | 170 | 0.00 | 0.00    | 0.00    | 0.00    |
| S1BALREF  | 452 | 0.39 | 0.49    | 0.00    | 1.00    |
| S2BALREF  | 269 | 0.23 | 0.42    | 0.00    | 1.00    |
| S3BALREF  | 77  | 0.00 | 0.00    | 0.00    | 0.00    |
| R1BALTRYU | 722 | 0.17 | 0.37    | 0.00    | 1.00    |
| R2BALTRYU | 489 | 0.28 | 0.45    | 0.00    | 1.00    |
| R3BALTRYU | 170 | 0.52 | 0.50    | 0.00    | 1.00    |
| S1BALTRYU | 452 | 0.15 | 0.36    | 0.00    | 1.00    |
| S2BALTRYU | 269 | 0.30 | 0.46    | 0.00    | 1.00    |
| S3BALTRYU | 77  | 0.51 | 0.50    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----           | R1BALSFT | R2BALSFT | R3BALSFT |
|----------------------|----------|----------|----------|
| .c:completed test    | 2036     | 1872     | 1916     |
| .e:measured in error | 55       |          |          |
| .m:Missing           | 131      |          | 218      |

|                      |  |           |           |           |
|----------------------|--|-----------|-----------|-----------|
| .s:Skip              |  | 12242     | 11343     | 13419     |
| 0.no                 |  | 352       | 235       | 89        |
| 1.yes                |  | 370       | 254       | 81        |
| Value-----           |  | S1BALSFT  | S2BALSFT  | S3BALSFT  |
| .c:completed test    |  | 1472      | 1366      | 1334      |
| .e:measured in error |  | 41        |           |           |
| .m:Missing           |  | 95        |           | 141       |
| .s:Skip              |  | 8588      | 7929      | 9040      |
| .u:Unmar             |  | 4205      | 4009      | 4782      |
| .v:SP NR             |  | 333       | 131       | 349       |
| 0.no                 |  | 244       | 143       | 39        |
| 1.yes                |  | 208       | 126       | 38        |
| Value-----           |  | R1BALREF  | R2BALREF  | R3BALREF  |
| .c:completed test    |  | 2036      | 1872      | 1916      |
| .e:measured in error |  | 55        |           |           |
| .m:Missing           |  | 131       |           | 218       |
| .s:Skip              |  | 12242     | 11343     | 13419     |
| 0.no                 |  | 492       | 392       | 170       |
| 1.yes                |  | 230       | 97        |           |
| Value-----           |  | S1BALREF  | S2BALREF  | S3BALREF  |
| .c:completed test    |  | 1472      | 1366      | 1334      |
| .e:measured in error |  | 41        |           |           |
| .m:Missing           |  | 95        |           | 141       |
| .s:Skip              |  | 8588      | 7929      | 9040      |
| .u:Unmar             |  | 4205      | 4009      | 4782      |
| .v:SP NR             |  | 333       | 131       | 349       |
| 0.no                 |  | 275       | 207       | 77        |
| 1.yes                |  | 177       | 62        |           |
| Value-----           |  | R1BALTRYU | R2BALTRYU | R3BALTRYU |
| .c:completed test    |  | 2036      | 1872      | 1916      |
| .e:measured in error |  | 55        |           |           |
| .m:Missing           |  | 131       |           | 218       |
| .s:Skip              |  | 12242     | 11343     | 13419     |
| 0.no                 |  | 600       | 351       | 81        |
| 1.yes                |  | 122       | 138       | 89        |
| Value-----           |  | S1BALTRYU | S2BALTRYU | S3BALTRYU |
| .c:completed test    |  | 1472      | 1366      | 1334      |
| .e:measured in error |  | 41        |           |           |
| .m:Missing           |  | 95        |           | 141       |
| .s:Skip              |  | 8588      | 7929      | 9040      |
| .u:Unmar             |  | 4205      | 4009      | 4782      |
| .v:SP NR             |  | 333       | 131       | 349       |
| 0.no                 |  | 385       | 188       | 38        |
| 1.yes                |  | 67        | 81        | 39        |

## How Constructed

RwBALSFT indicates whether the respondent couldn't complete the balance test because of safety reasons. RwBALSFT is coded as 1 if the respondent was missing a leg or was injured, if the respondent couldn't stand to complete the measure, or if no attempt was made to complete the measure to be safe. RwBALSFT is coded as 0 if they tried to complete the balance test but couldn't do it, or refused to complete the measures. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the subject completed the tests. Also other missing responses of this variable are assigned special missing value .m. This measure is set to plain missing (.) for respondents who did not respond to the current wave.

RwBALTRYU indicates whether the respondent tried to complete the balance test but couldn't do it. RwBALTRYU is coded as 1 if the respondent tried but couldn't complete the balance test. RwBALTRYU is coded as 0 if the respondent was missing a leg or was injured, couldn't stand, refused to complete the measures, or no attempt was made to be safe. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the subject completed the tests. Also other missing responses of this variable are assigned special missing value .m. This measure is set to plain missing (.) for respondents who did not respond to the current wave.

RwBALREF indicates whether the respondent refused to complete the balance test. RwBALREF is coded as 1 if the respondent refused to complete the balance test. RwBALREF is coded as 0 if they tried to complete the balance test but couldn't do it, was missing a leg or was injured, couldn't stand, or no attempt was made to be safe. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the subject completed the tests. Also other missing responses of this variable are assigned special missing value .m. This measure is set to plain missing (.) for respondents who did not respond to the current wave.

SwBALSFT, SwBALTRYU, and SwBALREF are the measures of the respondent's spouse and are taken directly from the spouse's RwBALSFT, RwBALTRYU, and RwBALREF, respectively. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. SwBALSFT, SwBALTRYU, and SwBALREF employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

In Waves 1 and 2 anthropometric and performance measures (including the balance test) were obtained from a sub-sample selected randomly from the baseline sample, distributed in the 32 states. However, in Wave 3 a new sub-sample was selected to complete anthropometric and performance measures, biomarkers, and other measures. This sub-sample was limited to the complete sample of four states. Anthropometrics and performance measures data was not collected in Waves 4 and 5.

## Differences with the RAND HRS/Harmonized HRS

While the HRS completes balance tests, they are not comparable to those completed in the MHAS. RwBALSFT, RwBALREF, and RwBALTRYU in the Harmonized HRS have the same naming as the variables in the MHAS, however the balance tests completed in the two studies are not comparable. The Harmonized HRS also includes RwBALEQUP and RwBALOTHR to indicate whether the respondent did not complete the tests due to faulty equipment/space issue or for other reasons. In the HRS, multiple reasons can be chosen to explain why the respondent did not complete the balance tests, while a single reason is chosen to explain why the respondent did not complete the balance tests in the MHAS.

## MHAS Variables Used

### Master File:

|              |  |
|--------------|--|
| ANTRO_01     | Selected for anthropometric measurement 2001           |
| ANTRO_03     | Selected for anthropometric measurement 2003           |
| SUBSAMPLE_12 | Selected subsample for Biomarkers/Anthropometrics 2012 |

### Wave 1:

|      |                                      |
|------|--------------------------------------|
| L1   | selected for anthropometric measures |
| L9_1 | right foot                           |
| L9_2 | left foot                            |

### Wave 2:

|      |                                      |
|------|--------------------------------------|
| L1   | selected for anthropometric measures |
| L1A  | present for measures                 |
| L9_1 | right foot                           |
| L9_2 | left foot                            |

### Wave 3:

|           |                         |
|-----------|-------------------------|
| PIEDER_12 | Balance - on right foot |
| PIEIZQ_12 | Balance - on left foot  |

|                                    |
|------------------------------------|
| <b>Blood Pressure Measurements</b> |
|------------------------------------|

| Wave | Variable  | Label  | Type  |
|------|-----------|--|-------|
| 3    | R3SYSTO1  | r3systo1: w3 R Blood Pressure - Systolic Measure 1           | Cont  |
| 3    | S3SYSTO1  | s3systo1: w3 S Blood Pressure - Systolic Measure 1           | Cont  |
| 3    | R3SYSTO2  | r3systo2: w3 R Blood Pressure - Systolic Measure 2           | Cont  |
| 3    | S3SYSTO2  | s3systo2: w3 S Blood Pressure - Systolic Measure 2           | Cont  |
| 3    | R3SYSTO   | r3systo: w3 R Average Blood Pressure - Systolic Measures 1 & | Cont  |
| 3    | S3SYSTO   | s3systo: w3 S Average Blood Pressure - Systolic Measures 1 & | Cont  |
| 3    | R3DIASTO1 | r3diasto1: w3 R Blood Pressure - Diastolic Measure 1         | Cont  |
| 3    | S3DIASTO1 | s3diasto1: w3 S Blood Pressure - Diastolic Measure 1         | Cont  |
| 3    | R3DIASTO2 | r3diasto2: w3 R Blood Pressure - Diastolic Measure 2         | Cont  |
| 3    | S3DIASTO2 | s3diasto2: w3 S Blood Pressure - Diastolic Measure 2         | Cont  |
| 3    | R3DIASTO  | r3diasto: w3 R Average Blood Pressure - Diastolic Measures 1 | Cont  |
| 3    | S3DIASTO  | s3diasto: w3 S Average Blood Pressure - Diastolic Measures 1 | Cont  |
| 3    | R3PULSE1  | r3pulse1: w3 R Pulse Measure 1                               | Cont  |
| 3    | S3PULSE1  | s3pulse1: w3 S Pulse Measure 1                               | Cont  |
| 3    | R3PULSE2  | r3pulse2: w3 R Pulse Measure 2                               | Cont  |
| 3    | S3PULSE2  | s3pulse2: w3 S Pulse Measure 2                               | Cont  |
| 3    | R3PULSE   | r3pulse: w3 R Average Pulse - Measures 1 & 2                 | Cont  |
| 3    | S3PULSE   | s3pulse: w3 S Average Pulse - Measures 1 & 2                 | Cont  |
| 3    | R3BPComp  | r3bpcomp: w3 R willing & able to complete blood pressure mea | Categ |
| 3    | S3BPComp  | s3bpcomp: w3 S willing & able to complete blood pressure mea | Categ |

### Descriptive Statistics

| Variable  | N    | Mean   | Std Dev | Minimum | Maximum |
|-----------|------|--------|---------|---------|---------|
| R3SYSTO1  | 2086 | 139.86 | 21.80   | 82.00   | 190.00  |
| S3SYSTO1  | 1411 | 138.80 | 21.26   | 88.00   | 190.00  |
| R3SYSTO2  | 2086 | 137.06 | 21.38   | 72.00   | 190.00  |
| S3SYSTO2  | 1411 | 136.00 | 20.86   | 72.00   | 190.00  |
| R3SYSTO   | 2086 | 138.46 | 20.96   | 82.00   | 190.00  |
| S3SYSTO   | 1411 | 137.40 | 20.42   | 85.50   | 190.00  |
| R3DIASTO1 | 2086 | 79.21  | 11.66   | 42.00   | 126.00  |

|           |      |       |       |       |        |
|-----------|------|-------|-------|-------|--------|
| S3DIASTO1 | 1411 | 79.46 | 11.51 | 43.00 | 126.00 |
| R3DIASTO2 | 2086 | 78.57 | 11.60 | 40.00 | 121.00 |
| S3DIASTO2 | 1411 | 78.83 | 11.33 | 40.00 | 121.00 |
| R3DIASTO  | 2086 | 78.89 | 11.10 | 43.50 | 123.00 |
| S3DIASTO  | 1411 | 79.14 | 10.91 | 43.50 | 123.00 |
| R3PULSE1  | 2086 | 75.01 | 11.40 | 50.00 | 125.00 |
| S3PULSE1  | 1411 | 74.91 | 11.48 | 50.00 | 125.00 |
| R3PULSE2  | 2086 | 74.53 | 11.38 | 50.00 | 117.00 |
| S3PULSE2  | 1411 | 74.36 | 11.36 | 50.00 | 117.00 |
| R3PULSE   | 2086 | 74.77 | 11.13 | 50.00 | 116.00 |
| S3PULSE   | 1411 | 74.63 | 11.16 | 50.00 | 116.00 |
| R3BPCOMP  | 2086 | 1.00  | 0.00  | 1.00  | 1.00   |
| S3BPCOMP  | 1411 | 1.00  | 0.00  | 1.00  | 1.00   |

Categorical Variable Codes

|            |          |
|------------|----------|
| Value----- | R3BPCOMP |
| .m:Missing | 218      |
| .s:Skip    | 13419    |
| 1.yes      | 2086     |
| Value----- | S3BPCOMP |
| .m:Missing | 141      |
| .s:Skip    | 9040     |
| .u:Unmar   | 4782     |
| .v:SP NR   | 349      |
| 1.yes      | 1411     |

How Constructed

RwSYSTO1 and RwSYSTO1 are the respondent's first and second systolic blood pressure measures. RwSYSTO is the average of the first and second systolic blood pressure readings. RwDIASTO1 and RwDIASTO2 are the respondent's first and second diastolic blood pressure measures. RwDIASTO is the average of the first and second diastolic blood pressure readings. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. Respondents who refused to participate or did not cooperate are assigned special missing value .r. Also other missing responses of these variables are assigned special missing value .m. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwPULSE1 and RwPULSE2 are the respondent's first and second pulse reading. RwPULSE is the average of the first and the second pulse readings. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. Respondents who refused to participate or did not cooperate are assigned special missing value .r. Also other missing responses of these variables are assigned special missing value .m. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwBPCOMP indicates whether the respondent is willing and able to complete the blood pleasure measurements. RwBPCOMP is coded as 1 if the respondent understood the directions for the test, the respondent felt it would be safe to complete the measures, and the interviewer was able to complete the measures. RwBPCOMP is coded as 0 if the respondent had any physical problem, the respondent did not cooperate, or refused to participate. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. Also other missing responses of this variable are assigned

special missing value .m. This measure is set to plain missing (.) for respondents who did not respond to the current wave.

SwSYST01, SwSYST01, SwSYSTO, SwDIAST01, SwDIAST02, SwDIASTO, SwPULSE1, SwPULSE2, SwPULSE, and SwBPCOMP are the measures of the respondent’s spouse and are taken directly from the spouse’s RwsYST01, RwsYST01, RwsYSTO, RwdIAST01, RwdIAST02, RwdIASTO, RwpULSE1, RwpULSE2, RwpULSE, and RwbPCOMP, respectively. In addition to the special missing values employed by the respondent variables, the spouse variables employ two additional special missing codes. SwSYST01, SwSYST01, SwSYSTO, SwDIAST01, SwDIAST02, SwDIASTO, SwPULSE1, SwPULSE2, SwPULSE, and SwBPCOMP, employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

Cross Wave Differences in MHAS

The blood pressure measurements were only part of the MHAS Wave 3 anthropometrics and performance measures in a sub-sample that was limited to the complete sample of four states.

Differences with the RAND HRS/Harmonized HRS

The HRS measures blood pressure three times, while the MHAS measures blood pressure two times. As a result of this difference, the Harmonized HRS includes RwsYST03, RwdIAST03, and RwpULSE3, and RwsYSTO, RwdIASTO, and RwpULSE are the average of the second and third measurements, where available. The Harmonized HRS also includes RwbPACT30, indicating whether the respondent did any activity in the last 30 minutes that could impact their blood pressure reading, and RwBLDPOS, indicating the respondent's position during the blood pressure readings.

MHAS Variables Used

|              |  |
|--------------|--|
| Master File: |  |
| SUBSAMPLE_12 | Selected subsample for Biomarkers/Anthropometrics 2012 |
| Wave 3:      |  |
| DIAS1_12     | First measurement - diastolic pressure                 |
| DIAS2_12     | Second measurement - diastolic pressure                |
| PULSO1_12    | First measurement - pulse                              |
| PULSO2_12    | Second measurement - pulse                             |
| RPRES1_12    | First measurement - Results of the measure             |
| RPRES2_12    | Second measurement - Results of the measure            |
| SIST1_12     | First measurement - systolic pressure                  |
| SIST2_12     | Second measurement - systolic pressure                 |

Blood Pressure Measurements: Reason Didn't Complete

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 3    | R3BPSFT  | r3bpsft: w3 R cannot complete blood pressure measures for sa | Categ |
| 3    | S3BPSFT  | s3bpsft: w3 S cannot complete blood pressure measures for sa | Categ |
| 3    | R3BPREF  | r3bpref: w3 R refused to complete blood pressure measures    | Categ |
| 3    | S3BPREF  | s3bpref: w3 S refused to complete blood pressure measures    | Categ |

Descriptive Statistics

| Variable | N | Mean | Std Dev | Minimum | Maximum |
|----------|---|------|---------|---------|---------|
| R3BPSFT  | 0 | .    | .       | .       | .       |
| S3BPSFT  | 0 | .    | .       | .       | .       |
| R3BPREF  | 0 | .    | .       | .       | .       |
| S3BPREF  | 0 | .    | .       | .       | .       |

Categorical Variable Codes

|                   |         |
|-------------------|---------|
| Value-----        | R3BPSFT |
| .c:completed test | 2086    |
| .m:Missing        | 218     |
| .s:Skip           | 13419   |
| Value-----        | S3BPSFT |
| .c:completed test | 1411    |
| .m:Missing        | 141     |
| .s:Skip           | 9040    |
| .u:Unmar          | 4782    |
| .v:SP NR          | 349     |
| Value-----        | R3BPREF |
| .c:completed test | 2086    |
| .m:Missing        | 218     |
| .s:Skip           | 13419   |
| Value-----        | S3BPREF |
| .c:completed test | 1411    |
| .m:Missing        | 141     |
| .s:Skip           | 9040    |
| .u:Unmar          | 4782    |
| .v:SP NR          | 349     |

How Constructed

RwBPSFT indicates whether the respondent couldn't complete the blood pressure measurements because of safety reasons. RwBPSFT is coded as 1 if the respondent had any physical problem. RwBPSFT is coded as 0 if the respondent did not cooperate or refused to participate to complete the measures. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the subject completed the measurements. Also other missing responses of this variable are assigned special missing value .m. This measure is set to plain missing (.) for respondents who did not respond to the current wave.

RwBPREF indicates whether the respondent refused to complete the blood pressure measurements. RwBPREF is coded as 1 if the respondent did not cooperate or refused to participate to complete the measures. RwBPREF is coded as 0 if the respondent had any physical problem. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is



used to indicate that the subject completed the measurements. Also other missing responses of this variable are assigned special missing value .m. This measure is set to plain missing (.) for respondents who did not respond to the current wave.

SwBPSFT and SwBPREF are the measures of the respondent’s spouse and are taken directly from the spouse’s RwbPSFT and RwbPREF, respectively. In addition to the special missing values employed by the respondent variables, the spouse variables employ two additional special missing codes. SwBPSFT and SwBPREF employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

Please note that these variables are provided in the Harmonized MHAS, however, since all respondents either completed the measure, were not part of the subsample, or had missing values, there are no 0 or 1 values present in these variables.

Cross Wave Differences in MHAS

The blood pressure measurements were only part of the MHAS Wave 3 anthropometrics and performance measures in a sub-sample that was limited to the complete sample of four states.

Differences with the RAND HRS/Harmonized HRS

The Harmonized HRS also includes RwbPTRYU, RwbPEQUP, and RwbPOTHR, indicating whether the respondent did not complete the blood pressure measurements for safety, equipment, or other reasons, respectively. In the HRS, multiple reasons can be chosen to explain why the respondent did not complete the measurements, while a single reason is chosen to explain why the respondent did not complete the measurements in the MHAS.

MHAS Variables Used

|              |  |
|--------------|--|
| Master File: |  |
| SUBSAMPLE_12 | Selected subsample for Biomarkers/Anthropometrics 2012 |
| Wave 3:      |  |
| DIAS1_12     | First measurement - diastolic pressure                 |
| DIAS2_12     | Second measurement - diastolic pressure                |
| PULSO1_12    | First measurement - pulse                              |
| PULSO2_12    | Second measurement - pulse                             |
| RPRES1_12    | First measurement - Results of the measure             |
| RPRES2_12    | Second measurement - Results of the measure            |
| SIST1_12     | First measurement - systolic pressure                  |
| SIST2_12     | Second measurement - systolic pressure                 |

Timed Walk Measurements

| Wave | Variable    | Label  | Type  |
|------|-------------|--|-------|
| 3    | R3WSPEED1   | r3wspeed1: w3 R Walking Speed (sec) - Measure 1              | Cont  |
| 3    | S3WSPEED1   | s3wspeed1: w3 S Walking Speed (sec) - Measure 1              | Cont  |
| 3    | R3WSPEED2   | r3wspeed2: w3 R Walking Speed (sec) - Measure 2              | Cont  |
| 3    | S3WSPEED2   | s3wspeed2: w3 S Walking Speed (sec) - Measure 2              | Cont  |
| 3    | R3WSPEED    | r3wspeed: w3 R Average Walking Speed - Measures 1 & 2        | Cont  |
| 3    | S3WSPEED    | s3wspeed: w3 S Average Walking Speed - Measures 1 & 2        | Cont  |
| 3    | R3WALKCOMP  | r3walkcomp: w3 R willing & able to complete walking speed te | Categ |
| 3    | S3WALKCOMP  | s3walkcomp: w3 S willing & able to complete walking speed te | Categ |
| 3    | R3WALKAID_M | r3walkaid_m: w3 Type of Aid Used during R's Walking Speed Te | Categ |
| 3    | S3WALKAID_M | s3walkaid_m: w3 Type of Aid Used during S's Walking Speed Te | Categ |

Descriptive Statistics

| Variable    | N    | Mean | Std Dev | Minimum | Maximum |
|-------------|------|------|---------|---------|---------|
| R3WSPEED1   | 2058 | 5.07 | 3.06    | 2.00    | 47.00   |
| S3WSPEED1   | 1400 | 4.74 | 2.55    | 2.00    | 47.00   |
| R3WSPEED2   | 2059 | 4.75 | 2.89    | 1.00    | 58.00   |
| S3WSPEED2   | 1401 | 4.43 | 2.31    | 2.00    | 58.00   |
| R3WSPEED    | 2057 | 4.91 | 2.91    | 2.00    | 52.50   |
| S3WSPEED    | 1400 | 4.59 | 2.33    | 2.00    | 52.50   |
| R3WALKCOMP  | 2078 | 0.99 | 0.10    | 0.00    | 1.00    |
| S3WALKCOMP  | 1407 | 1.00 | 0.07    | 0.00    | 1.00    |
| R3WALKAID_M | 2065 | 0.04 | 0.23    | 0.00    | 2.00    |
| S3WALKAID_M | 1404 | 0.02 | 0.17    | 0.00    | 2.00    |

Categorical Variable Codes

|            |            |
|------------|------------|
| Value----- | R3WALKCOMP |
| .m:Missing | 226        |
| .s:Skip    | 13419      |
| 0.no       | 21         |
| 1.yes      | 2057       |
| Value----- | S3WALKCOMP |
| .m:Missing | 145        |
| .s:Skip    | 9040       |
| .u:Unmar   | 4782       |
| .v:SP NR   | 349        |
| 0.no       | 7          |
| 1.yes      | 1400       |

| Value-----          | R3WALKAID_M |
|---------------------|-------------|
| .m:Missing          | 218         |
| .n:not willing/able | 17          |
| .r:Refuse           | 1           |
| .s:Skip             | 13419       |
| .x:tried but unable | 3           |
| 0.None              | 2007        |
| 1.Cane              | 41          |
| 2.Other             | 17          |

| Value-----          | S3WALKAID_M |
|---------------------|-------------|
| .m:Missing          | 141         |
| .n:not willing/able | 5           |
| .r:Refuse           | 1           |
| .s:Skip             | 9040        |
| .u:Unmar            | 4782        |
| .v:SP NR            | 349         |
| .x:tried but unable | 1           |
| 0.None              | 1380        |
| 1.Cane              | 18          |
| 2.Other             | 6           |

## How Constructed

RwWSPEED1 and RwWSPEED2 are the respondent's first and second walking speed measures over a distance of 3 meters and RwWSPEED is the respective average. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. If the respondent could not maintain the position without help, couldn't understand the instructions, no attempt was made for safety, or did not complete the tests for other reasons, then these variables are assigned special missing value .n. RwWSPEED1, RwWSPEED2, and RwWSPEED are assigned special missing value .i if the reported completion time was greater than 100 seconds. Respondents who tried to complete the tests but were unable to are assigned special missing value .x, and respondents who refused to complete the tests are assigned special missing value .r. Also other missing responses of these variables are assigned special missing value .m. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwWALKCOMP indicates whether the respondent is willing and able to complete the walking speed exercise. RwWALKCOMP is coded as 1 if the respondent understood the directions for the test and the respondent felt it would be safe to complete the exercise. RwWALKCOMP coded as 0 if the respondent tried but couldn't do it, the respondent couldn't hold the position without any help, refused to participate, couldn't understand the instructions, or didn't attempt the exercise for safety reasons or for other reasons. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. Also other missing responses of these variables are assigned special missing value .m. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

RwWALKAID\_M indicates the type of walking aid the respondent used to complete the walking speed exercise. RwWALKAID\_M is coded as 0 if the respondent didn't use any aid to complete the exercise. RwWALKAID\_M is coded as 1 if the respondent used a cane, and is coded as 2 if the respondent used some other walking aid. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. If the respondent could not maintain the position without help, couldn't understand the instructions, no attempt was made for safety, or did not complete the tests for other reasons, then this variable is assigned special missing value .n. Respondents who tried to complete the tests but were unable to are assigned special missing value .x, and respondents who refused to complete the tests are assigned special missing value .r. Also other missing responses of this variable is assigned special missing value .m. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

SwWSPEED1, SwWSPEED1, SwWSPEED, SwWALKCOMP and SwWALKAID\_M are the measures of the respondent's spouse and are taken directly from the spouse's RwWSPEED1, RwWSPEED1, RwWSPEED, RwWALKCOMP and RwWALKAID\_M, respectively. In addition to the special missing values employed by the respondent variables, the spouse variables employ two additional special missing codes. SwWSPEED1, SwWSPEED1, SwWSPEED, SwWALKCOMP and SwWALKAID\_M, employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

Cross Wave Differences in MHAS

The walking speed exercise was only part of the MHAS Wave 3 anthropometrics and performance measures in a sub-sample that was limited to the complete sample of four states.

Differences with the RAND HRS/Harmonized HRS

The walking speed test in the HRS is completed over a distance of 12 feet, while the walking speed test in the MHAS is completed over a distance of 3 meters.

In the Harmonized HRS, RwwALKAID is coded as 1.none, 2.walking stick or cane, 3.elbow crutches, 4.walking frame, 5.other. In the Harmonized MHAS, RwwALKAID\_M is coded as 0.none, 1.cane, 2.other.

The Harmonized HRS also includes RwwALKFLR, indicating the floor surface during the respondent's walking speed test.

MHAS Variables Used

|              |  |
|--------------|--|
| Master File: |  |
| SUBSAMPLE_12 | Selected subsample for Biomarkers/Anthropometrics 2012 |
| Wave 3:      |  |
| AYUDA1_12    | Walking speed - aids used for first test               |
| AYUDA2_12    | Walking speed - aids used for second test              |
| RTCAM1_12    | Walking speed - result of first test                   |
| RTCAM2_12    | Walking speed - result of second test                  |
| TCAM1_12     | Walking speed - time for first test                    |
| TCAM2_12     | Walking speed - time for second test                   |

Timed Walk Measurements: Reason Didn't Complete

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 3    | R3WALKSFT  | r3walksft: w3 R cannot complete walking speed test for safet | Categ |
| 3    | S3WALKSFT  | s3walksft: w3 S cannot complete walking speed test for safet | Categ |
| 3    | R3WALKTRYU | r3walktryu: w3 R tried but could not complete walking speed  | Categ |
| 3    | S3WALKTRYU | s3walktryu: w3 S tried but could not complete walking speed  | Categ |
| 3    | R3WALKREF  | r3walkref: w3 R refused to complete walking speed test       | Categ |
| 3    | S3WALKREF  | s3walkref: w3 S refused to complete walking speed test       | Categ |
| 3    | R3WALKOTHR | r3walkothr: w3 R failed to complete walking speed test - oth | Categ |
| 3    | S3WALKOTHR | s3walkothr: w3 S failed to complete walking speed test - oth | Categ |

Descriptive Statistics

| Variable   | N  | Mean | Std Dev | Minimum | Maximum |
|------------|----|------|---------|---------|---------|
| R3WALKSFT  | 21 | 0.24 | 0.44    | 0.00    | 1.00    |
| S3WALKSFT  | 7  | 0.14 | 0.38    | 0.00    | 1.00    |
| R3WALKTRYU | 21 | 0.14 | 0.36    | 0.00    | 1.00    |
| S3WALKTRYU | 7  | 0.14 | 0.38    | 0.00    | 1.00    |
| R3WALKREF  | 21 | 0.05 | 0.22    | 0.00    | 1.00    |
| S3WALKREF  | 7  | 0.14 | 0.38    | 0.00    | 1.00    |
| R3WALKOTHR | 21 | 0.57 | 0.51    | 0.00    | 1.00    |
| S3WALKOTHR | 7  | 0.57 | 0.53    | 0.00    | 1.00    |

Categorical Variable Codes

|                   |            |
|-------------------|------------|
| Value-----        | R3WALKSFT  |
| .c:completed test | 2057       |
| .m:Missing        | 226        |
| .s:Skip           | 13419      |
| 0.no              | 16         |
| 1.yes             | 5          |
| Value-----        | S3WALKSFT  |
| .c:completed test | 1400       |
| .m:Missing        | 145        |
| .s:Skip           | 9040       |
| .u:Unmar          | 4782       |
| .v:SP NR          | 349        |
| 0.no              | 6          |
| 1.yes             | 1          |
| Value-----        | R3WALKTRYU |
| .c:completed test | 2057       |
| .m:Missing        | 226        |
| .s:Skip           | 13419      |
| 0.no              | 18         |
| 1.yes             | 3          |

| Value-----        | S3WALKTRYU |
|-------------------|------------|
| .c:completed test | 1400       |
| .m:Missing        | 145        |
| .s:Skip           | 9040       |
| .u:Unmar          | 4782       |
| .v:SP NR          | 349        |
| 0.no              | 6          |
| 1.yes             | 1          |

| Value-----        | R3WALKREF |
|-------------------|-----------|
| .c:completed test | 2057      |
| .m:Missing        | 226       |
| .s:Skip           | 13419     |
| 0.no              | 20        |
| 1.yes             | 1         |

| Value-----        | S3WALKREF |
|-------------------|-----------|
| .c:completed test | 1400      |
| .m:Missing        | 145       |
| .s:Skip           | 9040      |
| .u:Unmar          | 4782      |
| .v:SP NR          | 349       |
| 0.no              | 6         |
| 1.yes             | 1         |

| Value-----        | R3WALKOTHR |
|-------------------|------------|
| .c:completed test | 2057       |
| .m:Missing        | 226        |
| .s:Skip           | 13419      |
| 0.no              | 9          |
| 1.yes             | 12         |

| Value-----        | S3WALKOTHR |
|-------------------|------------|
| .c:completed test | 1400       |
| .m:Missing        | 145        |
| .s:Skip           | 9040       |
| .u:Unmar          | 4782       |
| .v:SP NR          | 349        |
| 0.no              | 3          |
| 1.yes             | 4          |

## How Constructed

RwWALKSFT indicates whether the respondent couldn't complete the walking speed exercise because of safety reasons. RwWALKSFT is coded as 1 if the respondent couldn't hold the position without any help, or no attempt was made because the respondent or interviewer didn't feel it would be safe. RwWALKSFT is coded as 0 if the respondent tried but couldn't do it, couldn't understand the instructions, refused to participate, or because of any other reason not mentioned before. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the subject completed the tests. Also other missing responses of this variable are assigned special missing value .m. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

RwWALKTRYU indicates whether the respondent tried to complete the walking speed exercise but couldn't do it. RwWALKTRYU is coded as 1 if the respondent tried but couldn't complete the exercise. RwWALKTRYU is coded as 0 if the respondent couldn't hold the position without any help, not attempt was made because the respondent or interviewer didn't feel it would be safe, the respondent couldn't understand the instructions, refused to participate, or because of any other reason not mentioned before. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the subject completed the tests. Also other missing responses of this variable are assigned special missing value .m. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

RwWALKREF indicates whether the respondent refused to complete the walking speed exercise. RwWALKREF is coded as 1 if the respondent refused to complete the measures. RwWALKREF is coded as 0 if the respondent tried to complete the walking speed exercise but couldn't do it, couldn't hold the position without any help, no attempt was made because the respondent or interviewer didn't feel it would be safe, the respondent couldn't understand the instructions, or because of any other reason not mentioned before. A

special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the subject completed the tests. Also other missing responses of this variable are assigned special missing value .m. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

RwWALKOTHR indicates whether the respondent didn't complete the walking speed exercise for other reasons. RwWALKOTHR is coded as 1 if the respondent could not understand the instructions or indicated other reasons for not completing the exercise. RwWALKOTHR is coded as 0 if the respondent tried to complete the walking speed exercise but couldn't do it, couldn't hold the position without any help, no attempt was made because the respondent or interviewer didn't feel it would be safe, or the respondent refused to complete the exercise. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the subject completed the tests. Also other missing responses of this variable are assigned special missing value .m. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

SwWALKSFT, SwWALKTRYU, SwWALKREF, and SwWALKOTHR are the measures of the respondent’s spouse and are taken directly from the spouse’s RwWALKSFT, RwWALKTRYU, RwWALKREF, and RwWALKOTHR, respectively. In addition to the special missing values employed by the respondent variables, the spouse variables employ two additional special missing codes. SwWALKSFT, SwWALKTRYU, SwWALKREF, and SwWALKOTHR employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

Cross Wave Differences in MHAS

The walking speed exercise was only part of the MHAS Wave 3 anthropometrics and performance measures in a sub-sample that was limited to the complete sample of four states.

Differences with the RAND HRS/Harmonized HRS

The walking speed test in the HRS is completed over a distance of 12 feet, while the walking speed test in the MHAS is completed over a distance of 3 meters.

The Harmonized HRS also includes RwWALKEQUP, indicating whether the respondent didn't complete the walking speed tests due to faulty equipment or space issues. In the HRS, multiple reasons can be chosen to explain why the respondent did not complete the tests, while a single reason is chosen to explain why the respondent did not complete the tests in the MHAS.

MHAS Variables Used

|              |  |
|--------------|--|
| Master File: |  |
| SUBSAMPLE_12 | Selected subsample for Biomarkers/Anthropometrics 2012 |
| Wave 3:      |  |
| AYUDA1_12    | Walking speed - aids used for first test               |
| AYUDA2_12    | Walking speed - aids used for second test              |
| RTCAM1_12    | Walking speed - result of first test                   |
| RTCAM2_12    | Walking speed - result of second test                  |
| TCAM1_12     | Walking speed - time for first test                    |
| TCAM2_12     | Walking speed - time for second test                   |

|  |
|--|
| <b>Hand Grip Strength Measurements</b> |
|--|

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 3    | R3DOMHAND  | r3domhand: w3 R Hand Grip Strength Measures - Dominant hand  | Categ |
| 3    | S3DOMHAND  | s3domhand: w3 S Hand Grip Strength Measures - Dominant hand  | Categ |
| 3    | R3RGRIP1   | r3rgrip1: w3 R Hand Grip Strength Right Hand - Measure 1 (kg | Cont  |
| 3    | S3RGRIP1   | s3rgrip1: w3 S Hand Grip Strength Right Hand - Measure 1 (kg | Cont  |
| 3    | R3RGRIP2   | r3rgrip2: w3 R Hand Grip Strength Right Hand - Measure 2 (kg | Cont  |
| 3    | S3RGRIP2   | s3rgrip2: w3 S Hand Grip Strength Right Hand - Measure 2 (kg | Cont  |
| 3    | R3RGRIP    | r3rgrip: w3 R Maximum Hand Grip Strength Right Hand - Measur | Cont  |
| 3    | S3RGRIP    | s3rgrip: w3 S Maximum Hand Grip Strength Right Hand - Measur | Cont  |
| 3    | R3LGRIP1   | r3lgrip1: w3 R Hand Grip Strength Left Hand - Measure 1 (kg) | Cont  |
| 3    | S3LGRIP1   | s3lgrip1: w3 S Hand Grip Strength Left Hand - Measure 1 (kg) | Cont  |
| 3    | R3LGRIP2   | r3lgrip2: w3 R Hand Grip Strength Left Hand - Measure 2 (kg) | Cont  |
| 3    | S3LGRIP2   | s3lgrip2: w3 S Hand Grip Strength Left Hand - Measure 2 (kg) | Cont  |
| 3    | R3LGRIP    | r3lgrip: w3 R Maximum Hand Grip Strength Left Hand - Measure | Cont  |
| 3    | S3LGRIP    | s3lgrip: w3 S Maximum Hand Grip Strength Left Hand - Measure | Cont  |
| 3    | R3GRIPSUM  | r3gripsum: w3 R Hand Grip Strength Dominant Hand             | Cont  |
| 3    | S3GRIPSUM  | s3gripsum: w3 S Hand Grip Strength Dominant Hand             | Cont  |
| 3    | R3GRIPCOMP | r3gripcomp: w3 R willing & able to complete hand grip test   | Categ |
| 3    | S3GRIPCOMP | s3gripcomp: w3 S willing & able to complete hand grip test   | Categ |

**Descriptive Statistics**

| Variable  | N    | Mean  | Std Dev | Minimum | Maximum |
|-----------|------|-------|---------|---------|---------|
| R3DOMHAND | 2080 | 1.16  | 0.48    | 1.00    | 3.00    |
| S3DOMHAND | 1408 | 1.16  | 0.48    | 1.00    | 3.00    |
| R3RGRIP1  | 1950 | 25.00 | 8.92    | 0.80    | 62.00   |
| S3RGRIP1  | 1317 | 26.26 | 9.05    | 0.80    | 62.00   |
| R3RGRIP2  | 1950 | 25.62 | 8.84    | 0.30    | 58.00   |
| S3RGRIP2  | 1317 | 26.89 | 8.97    | 0.30    | 58.00   |
| R3RGRIP   | 1950 | 26.25 | 8.88    | 2.00    | 62.00   |
| S3RGRIP   | 1317 | 27.58 | 9.00    | 2.00    | 62.00   |
| R3LGRIP1  | 257  | 25.39 | 10.24   | 1.40    | 62.00   |



|            |      |       |       |      |       |
|------------|------|-------|-------|------|-------|
| S3LGRIPI1  | 176  | 27.30 | 10.18 | 2.00 | 62.00 |
| R3LGRIPI2  | 257  | 25.93 | 10.05 | 2.00 | 56.00 |
| S3LGRIPI2  | 176  | 27.93 | 9.97  | 2.00 | 56.00 |
| R3LGRIPI   | 257  | 26.63 | 10.21 | 2.00 | 62.00 |
| S3LGRIPI   | 176  | 28.55 | 10.15 | 2.00 | 62.00 |
| R3GRIPSUM  | 2072 | 26.20 | 9.00  | 2.00 | 62.00 |
| S3GRIPSUM  | 1402 | 27.59 | 9.07  | 2.00 | 62.00 |
| R3GRIPCOMP | 2086 | 1.00  | 0.05  | 0.00 | 1.00  |
| S3GRIPCOMP | 1411 | 1.00  | 0.05  | 0.00 | 1.00  |

Categorical Variable Codes

|                               |            |
|-------------------------------|------------|
| Value-----                    | R3DOMHAND  |
| .m:Missing                    | 218        |
| .n:not willing/able           | 6          |
| .s:Skip                       | 13419      |
| 1.Right hand                  | 1848       |
| 2.Left hand                   | 132        |
| 3.Both hands equally dominant | 100        |
| Value-----                    | S3DOMHAND  |
| .m:Missing                    | 141        |
| .n:not willing/able           | 3          |
| .s:Skip                       | 9040       |
| .u:Unmar                      | 4782       |
| .v:SP NR                      | 349        |
| 1.Right hand                  | 1248       |
| 2.Left hand                   | 93         |
| 3.Both hands equally dominant | 67         |
| Value-----                    | R3GRIPCOMP |
| .m:Missing                    | 218        |
| .s:Skip                       | 13419      |
| 0.no                          | 6          |
| 1.yes                         | 2080       |
| Value-----                    | S3GRIPCOMP |
| .m:Missing                    | 141        |
| .s:Skip                       | 9040       |
| .u:Unmar                      | 4782       |
| .v:SP NR                      | 349        |
| 0.no                          | 3          |
| 1.yes                         | 1408       |

How Constructed

RwDOMHAND indicates the respondent's dominant hand. RwDOMHAND is coded as follows: 1.right hand, 2.left hand, and 3.both hands are equally dominant. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .n is used if the respondent reported that it was not possible to do the test with any hand, and so was not asked this question. Other missing responses are assigned special missing code .m and the variable is set to plain missing (.) for respondents who did not participate in the current wave.

SwDOMHAND indicates the current wave's spouse's dominant hand, and is taken from RwDOMHAND. In addition to the special missing codes used for RwDOMHAND, SwDOMHAND employs two additional missing codes, .u and .v. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

RwLGRIPI, RwLGRIPI2, RwRGRIP1, and RwRGRIP2 indicate the respondent's first and second hand strength measurements for the left and right hand, respectively. RwLGRIPI and RwRGRIP indicate the respondent's maximum hand strength measurement for the left and right hand, respectively. RwGRIPSUM indicates the maximum measurement of the dominant hand, as such, RwLGRIPI is used for respondents with a dominant left hand, and RwRGRIP is used for respondents with a dominant right hand. For respondents with equally dominant hands, the greater value between RwLGRIPI and RwRGRIP is used. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .n is used if the respondent reported that it was not possible to do the test with any hand. A special missing value .t is used for RwRGRIP1, RwRGRIP2, RwRGRIP, and RwGRIPSUM if the respondent could not complete the test with their right hand. A special missing value .l is used to RwLGRIPI1, RwLGRIPI2, RwLGRIPI, and RwGRIPSUM if the respondent could not complete the test with their left hand. Other missing responses are assigned special missing code .m. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

SwLGRIPI1, SwLGRIPI2, SwRGRIP1, SwRGRIP2, SwLGRIPI, SwRGRIP, and SwGRIPSUM are the measures of the respondent's spouse and are taken directly from the spouse's RwLGRIPI1, RwLGRIPI2, RwRGRIP1, RwRGRIP2, RwLGRIPI, RwRGRIP, and RwGRIPSUM, respectively. In addition to the special missing codes used for the respondent variables, the spouse variables employ two additional missing codes, .u and .v. SwLGRIPI1, SwLGRIPI2, SwRGRIP1, SwRGRIP2, SwLGRIPI, SwRGRIP, and SwGRIPSUM, employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

RwGRIPCOMP indicates whether the respondent is willing and able to complete the hand strength measurements. RwGRIPCOMP is coded as 1 if the respondent was able to complete the measurements with at least one hand. RwGRIPCOMP coded as 0 if the respondent was not able to complete the measurements with any hand. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. Also other missing responses of this variable are assigned special missing value .m. These measures are set to plain missing (.) for respondents who did not respond to the current wave.

SwGRIPCOMP is the measure of the respondent's spouse and is taken directly from the spouse's RwGRIPCOMP. In addition to the special missing codes used for the RwGRIPCOMP, SwGRIPCOMP employs two additional missing codes, .u and .v. SwGRIPCOMP employs the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

The hand strength measurements were only part of the MHAS Wave 3 anthropometrics and performance measures in a sub-sample that was limited to the complete sample of four states.

## Differences with the RAND HRS/Harmonized HRS

The Harmonized HRS includes additional variables indicating the amount of effort the respondent gave the grip strength test (RwGRIPEFF), the respondent's position during the grip strength test (RwGRIPPOS), and whether the respondent rested their arms on a support during the grip strength test (RwGRIPRSTA).

## MHAS Variables Used

Master File:

SUBSAMPLE\_12 Selected subsample for Biomarkers/Anthropometrics 2012

Wave 3:

|            |   |
|------------|---|
| FUERZA_12  | Hand grip strength - Is it safe for you to do this meas |
| MANOF_12   | Hand grip strength - dominant hand?                     |
| MDER1_12   | Hand grip strength - right hand, first measurement      |
| MDER2_12   | Hand grip strength - right hand, second measurement     |
| MIZQ1_12   | Hand grip strength - left hand, first measurement       |
| MIZQ2_12   | Hand grip strength - left hand, second measurement      |
| RFUERZA_12 | Hand grip strength - Interviewer: reason test was not p |

Hand Grip Strength Measurements: Reason Didn't Complete

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 3    | R3GRIPSFT  | r3gripsft: w3 R cannot complete hand grip test for safety re | Categ |
| 3    | S3GRIPSFT  | s3gripsft: w3 S cannot complete hand grip test for safety re | Categ |
| 3    | R3GRIPREF  | r3gripref: w3 R refused to complete hand grip test           | Categ |
| 3    | S3GRIPREF  | s3gripref: w3 S refused to complete hand grip test           | Categ |
| 3    | R3GRIPOTHR | r3gripothr: w3 R didn't complete hand grip test - other      | Categ |
| 3    | S3GRIPOTHR | s3gripothr: w3 S didn't complete hand grip test - other      | Categ |

Descriptive Statistics

| Variable   | N | Mean | Std Dev | Minimum | Maximum |
|------------|---|------|---------|---------|---------|
| R3GRIPSFT  | 6 | 0.67 | 0.52    | 0.00    | 1.00    |
| S3GRIPSFT  | 3 | 0.67 | 0.58    | 0.00    | 1.00    |
| R3GRIPREF  | 6 | 0.00 | 0.00    | 0.00    | 0.00    |
| S3GRIPREF  | 3 | 0.00 | 0.00    | 0.00    | 0.00    |
| R3GRIPOTHR | 6 | 0.33 | 0.52    | 0.00    | 1.00    |
| S3GRIPOTHR | 3 | 0.33 | 0.58    | 0.00    | 1.00    |

Categorical Variable Codes

|                   |            |
|-------------------|------------|
| Value-----        | R3GRIPSFT  |
| .c:completed test | 2080       |
| .m:Missing        | 218        |
| .s:Skip           | 13419      |
| 0.no              | 2          |
| 1.yes             | 4          |
| Value-----        | S3GRIPSFT  |
| .c:completed test | 1408       |
| .m:Missing        | 141        |
| .s:Skip           | 9040       |
| .u:Unmar          | 4782       |
| .v:SP NR          | 349        |
| 0.no              | 1          |
| 1.yes             | 2          |
| Value-----        | R3GRIPREF  |
| .c:completed test | 2080       |
| .m:Missing        | 218        |
| .s:Skip           | 13419      |
| 0.no              | 6          |
| Value-----        | S3GRIPREF  |
| .c:completed test | 1408       |
| .m:Missing        | 141        |
| .s:Skip           | 9040       |
| .u:Unmar          | 4782       |
| .v:SP NR          | 349        |
| 0.no              | 3          |
| Value-----        | R3GRIPOTHR |

|                   |  |            |
|-------------------|--|------------|
| .c:completed test |  | 2080       |
| .m:Missing        |  | 218        |
| .s:Skip           |  | 13419      |
| 0.no              |  | 4          |
| 1.yes             |  | 2          |
| Value-----        |  | S3GRIPOTHR |
| .c:completed test |  | 1408       |
| .m:Missing        |  | 141        |
| .s:Skip           |  | 9040       |
| .u:Unmar          |  | 4782       |
| .v:SP NR          |  | 349        |
| 0.no              |  | 2          |
| 1.yes             |  | 1          |

How Constructed

RwGRIPSFT indicates whether the respondent couldn't complete the hand grip measurements because of safety reasons. RwGRIPSFT is coded as 1 if no attempt was made because the respondent or interviewer felt it was unsafe, or if the respondent couldn't participate due to surgery, inflammation, pain, etc, or other health condition. RwGRIPSFT is coded as 0 if the respondent didn't understand the instructions, refused to participate, or for any other reasons not mentioned before. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the respondent completed the measurements. Also other missing responses of this variable are assigned special missing value .m. This measure is set to plain missing (.) for respondents who did not respond to the current wave.

RwGRIPREF indicates whether the respondent refused to complete hand grip measurements. RwGRIPREF is coded as 1 if the respondent refused to complete the measures. RwGRIPREF is coded as 0 if no attempt was made because the respondent or interviewer felt it was unsafe, the respondent didn't understand the instructions, couldn't participate because of an injury or any health condition, or any other reasons not mentioned before. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the respondent completed the measurements. Also other missing responses of this variable are assigned special missing value .m. This measure is set to plain missing (.) for respondents who did not respond to the current wave.

RwGRIPOTHR indicates whether the respondent didn't complete the hand grip measurements for other reasons. RwGRIPOTHR is coded as 1 if the respondent couldn't understand the instructions or indicated other reasons for not completing the measurement. RwGRIPOTHR is coded as 0 if no attempt was made because the respondent or interviewer felt it was unsafe, the respondent refused to participate, or couldn't participate because of an injury or any health condition. A special missing value .s is used to indicate that the subject was not selected to be part of the subsample. A special missing value .c is used to indicate that the respondent completed the measurements. Also other missing responses of this variable are assigned special missing value .m. This measure is set to plain missing (.) for respondents who did not respond to the current wave.

SwGRIPSFT, SwGRIPREF, and SwGRIPOTHR are the measures of the respondent’s spouse and are taken directly from the spouse’s RwGRIPSFT, RwGRIPREF, and RwGRIPOTHR, respectively. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing values. SwGRIPSFT, SwGRIPREF, and SwGRIPOTHR employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

Cross Wave Differences in MHAS

The hand strength measurements were only part of the MHAS Wave 3 anthropometrics and performance measures in a sub-sample that was limited to the complete sample of four states.

Differences with the RAND HRS/Harmonized HRS

The Harmonized HRS also includes RwGRIPTRYU and RwGRIPEQUP, indicating whether the respondent did not complete the grip strength measurements because they tried but were unable to complete it or due to faulty equipment, respectively.

MHAS Variables Used

|              |   |
|--------------|---|
| Master File: |   |
| SUBSAMPLE_12 | Selected subsample for Biomarkers/Anthropometrics 2012  |
| Wave 3:      |   |
| FUERZA_12    | Hand grip strength - Is it safe for you to do this meas |
| MANOF_12     | Hand grip strength - dominant hand?                     |
| MDER1_12     | Hand grip strength - right hand, first measurement      |
| MDER2_12     | Hand grip strength - right hand, second measurement     |
| MIZQ1_12     | Hand grip strength - left hand, first measurement       |
| MIZQ2_12     | Hand grip strength - left hand, second measurement      |
| RFUERZA_12   | Hand grip strength - Interviewer: reason test was not p |

**Section L: Assistance and Caregiving**

|                 |
|-----------------|
| <b>ADL Help</b> |
|-----------------|

| Wave | Variable   | Label   | Type  |
|------|------------|---|-------|
| 1    | R1DRESSHLP | r1dresshlp: w1 whether anyone helps R dress           | Categ |
| 2    | R2DRESSHLP | r2dresshlp: w2 whether anyone helps R dress           | Categ |
| 3    | R3DRESSHLP | r3dresshlp: w3 whether anyone helps R dress           | Categ |
| 4    | R4DRESSHLP | r4dresshlp: w4 whether anyone helps R dress           | Categ |
| 5    | R5DRESSHLP | r5dresshlp: w5 whether anyone helps R dress           | Categ |
| 1    | S1DRESSHLP | s1dresshlp: w1 whether anyone helps S dress           | Categ |
| 2    | S2DRESSHLP | s2dresshlp: w2 whether anyone helps S dress           | Categ |
| 3    | S3DRESSHLP | s3dresshlp: w3 whether anyone helps S dress           | Categ |
| 4    | S4DRESSHLP | s4dresshlp: w4 whether anyone helps S dress           | Categ |
| 5    | S5DRESSHLP | s5dresshlp: w5 whether anyone helps S dress           | Categ |
| 1    | R1WALKHLP  | r1walkhlp: w1 whether anyone helps R walk             | Categ |
| 2    | R2WALKHLP  | r2walkhlp: w2 whether anyone helps R walk             | Categ |
| 3    | R3WALKHLP  | r3walkhlp: w3 whether anyone helps R walk             | Categ |
| 4    | R4WALKHLP  | r4walkhlp: w4 whether anyone helps R walk             | Categ |
| 5    | R5WALKHLP  | r5walkhlp: w5 whether anyone helps R walk             | Categ |
| 1    | S1WALKHLP  | s1walkhlp: w1 whether anyone helps S walk             | Categ |
| 2    | S2WALKHLP  | s2walkhlp: w2 whether anyone helps S walk             | Categ |
| 3    | S3WALKHLP  | s3walkhlp: w3 whether anyone helps S walk             | Categ |
| 4    | S4WALKHLP  | s4walkhlp: w4 whether anyone helps S walk             | Categ |
| 5    | S5WALKHLP  | s5walkhlp: w5 whether anyone helps S walk             | Categ |
| 1    | R1BATHEHLP | r1bathehlp: w1 whether anyone helps R bathe           | Categ |
| 2    | R2BATHEHLP | r2bathehlp: w2 whether anyone helps R bathe           | Categ |
| 3    | R3BATHEHLP | r3bathehlp: w3 whether anyone helps R bathe           | Categ |
| 4    | R4BATHEHLP | r4bathehlp: w4 whether anyone helps R bathe           | Categ |
| 5    | R5BATHEHLP | r5bathehlp: w5 whether anyone helps R bathe           | Categ |
| 1    | S1BATHEHLP | s1bathehlp: w1 whether anyone helps S bathe           | Categ |
| 2    | S2BATHEHLP | s2bathehlp: w2 whether anyone helps S bathe           | Categ |
| 3    | S3BATHEHLP | s3bathehlp: w3 whether anyone helps S bathe           | Categ |
| 4    | S4BATHEHLP | s4bathehlp: w4 whether anyone helps S bathe           | Categ |
| 5    | S5BATHEHLP | s5bathehlp: w5 whether anyone helps S bathe           | Categ |
| 1    | R1EATHLP   | r1eathlp: w1 whether anyone helps R eat               | Categ |
| 2    | R2EATHLP   | r2eathlp: w2 whether anyone helps R eat               | Categ |
| 3    | R3EATHLP   | r3eathlp: w3 whether anyone helps R eat               | Categ |
| 4    | R4EATHLP   | r4eathlp: w4 whether anyone helps R eat               | Categ |
| 5    | R5EATHLP   | r5eathlp: w5 whether anyone helps R eat               | Categ |
| 1    | S1EATHLP   | s1eathlp: w1 whether anyone helps S eat               | Categ |
| 2    | S2EATHLP   | s2eathlp: w2 whether anyone helps S eat               | Categ |
| 3    | S3EATHLP   | s3eathlp: w3 whether anyone helps S eat               | Categ |
| 4    | S4EATHLP   | s4eathlp: w4 whether anyone helps S eat               | Categ |
| 5    | S5EATHLP   | s5eathlp: w5 whether anyone helps S eat               | Categ |
| 1    | R1BEDHLP   | r1bedhlp: w1 whether anyone helps R get in/out of bed | Categ |
| 2    | R2BEDHLP   | r2bedhlp: w2 whether anyone helps R get in/out of bed | Categ |
| 3    | R3BEDHLP   | r3bedhlp: w3 whether anyone helps R get in/out of bed | Categ |
| 4    | R4BEDHLP   | r4bedhlp: w4 whether anyone helps R get in/out of bed | Categ |
| 5    | R5BEDHLP   | r5bedhlp: w5 whether anyone helps R get in/out of bed | Categ |
| 1    | S1BEDHLP   | s1bedhlp: w1 whether anyone helps S get in/out of bed | Categ |
| 2    | S2BEDHLP   | s2bedhlp: w2 whether anyone helps S get in/out of bed | Categ |
| 3    | S3BEDHLP   | s3bedhlp: w3 whether anyone helps S get in/out of bed | Categ |
| 4    | S4BEDHLP   | s4bedhlp: w4 whether anyone helps S get in/out of bed | Categ |
| 5    | S5BEDHLP   | s5bedhlp: w5 whether anyone helps S get in/out of bed | Categ |

|   |             |   |       |
|---|-------------|---|-------|
| 1 | R1TOILETHLP | r1toilethlp: w1 whether anyone helps R use the toilet | Categ |
| 2 | R2TOILETHLP | r2toilethlp: w2 whether anyone helps R use the toilet | Categ |
| 3 | R3TOILETHLP | r3toilethlp: w3 whether anyone helps R use the toilet | Categ |
| 4 | R4TOILETHLP | r4toilethlp: w4 whether anyone helps R use the toilet | Categ |
| 5 | R5TOILETHLP | r5toilethlp: w5 whether anyone helps R use the toilet | Categ |
| 1 | S1TOILETHLP | s1toilethlp: w1 whether anyone helps S use the toilet | Categ |
| 2 | S2TOILETHLP | s2toilethlp: w2 whether anyone helps S use the toilet | Categ |
| 3 | S3TOILETHLP | s3toilethlp: w3 whether anyone helps S use the toilet | Categ |
| 4 | S4TOILETHLP | s4toilethlp: w4 whether anyone helps S use the toilet | Categ |
| 5 | S5TOILETHLP | s5toilethlp: w5 whether anyone helps S use the toilet | Categ |

## Descriptive Statistics

| Variable   | N    | Mean | Std Dev | Minimum | Maximum |
|------------|------|------|---------|---------|---------|
| R1DRESSHLP | 870  | 0.37 | 0.48    | 0.00    | 1.00    |
| R2DRESSHLP | 773  | 0.40 | 0.49    | 0.00    | 1.00    |
| R3DRESSHLP | 1339 | 0.29 | 0.46    | 0.00    | 1.00    |
| R4DRESSHLP | 1506 | 0.37 | 0.48    | 0.00    | 1.00    |
| R5DRESSHLP | 1607 | 0.32 | 0.47    | 0.00    | 1.00    |
| S1DRESSHLP | 551  | 0.37 | 0.48    | 0.00    | 1.00    |
| S2DRESSHLP | 464  | 0.40 | 0.49    | 0.00    | 1.00    |
| S3DRESSHLP | 815  | 0.29 | 0.46    | 0.00    | 1.00    |
| S4DRESSHLP | 875  | 0.35 | 0.48    | 0.00    | 1.00    |
| S5DRESSHLP | 736  | 0.32 | 0.47    | 0.00    | 1.00    |
| R1WALKHLP  | 775  | 0.57 | 0.49    | 0.00    | 1.00    |
| R2WALKHLP  | 763  | 0.60 | 0.49    | 0.00    | 1.00    |
| R3WALKHLP  | 1244 | 0.43 | 0.50    | 0.00    | 1.00    |
| R4WALKHLP  | 1354 | 0.41 | 0.49    | 0.00    | 1.00    |
| R5WALKHLP  | 1450 | 0.55 | 0.50    | 0.00    | 1.00    |
| S1WALKHLP  | 421  | 0.61 | 0.49    | 0.00    | 1.00    |
| S2WALKHLP  | 395  | 0.62 | 0.49    | 0.00    | 1.00    |
| S3WALKHLP  | 621  | 0.38 | 0.49    | 0.00    | 1.00    |
| S4WALKHLP  | 639  | 0.40 | 0.49    | 0.00    | 1.00    |
| S5WALKHLP  | 601  | 0.52 | 0.50    | 0.00    | 1.00    |
| R1BATHEHLP | 543  | 0.73 | 0.44    | 0.00    | 1.00    |
| R2BATHEHLP | 518  | 0.77 | 0.42    | 0.00    | 1.00    |
| R3BATHEHLP | 802  | 0.71 | 0.45    | 0.00    | 1.00    |
| R4BATHEHLP | 1009 | 0.69 | 0.46    | 0.00    | 1.00    |
| R5BATHEHLP | 1002 | 0.75 | 0.43    | 0.00    | 1.00    |
| S1BATHEHLP | 285  | 0.73 | 0.44    | 0.00    | 1.00    |
| S2BATHEHLP | 273  | 0.79 | 0.40    | 0.00    | 1.00    |
| S3BATHEHLP | 357  | 0.65 | 0.48    | 0.00    | 1.00    |
| S4BATHEHLP | 470  | 0.63 | 0.48    | 0.00    | 1.00    |
| S5BATHEHLP | 413  | 0.73 | 0.45    | 0.00    | 1.00    |
| R1EATHLP   | 295  | 0.79 | 0.41    | 0.00    | 1.00    |
| R2EATHLP   | 267  | 0.83 | 0.38    | 0.00    | 1.00    |
| R3EATHLP   | 580  | 0.65 | 0.48    | 0.00    | 1.00    |
| R4EATHLP   | 603  | 0.70 | 0.46    | 0.00    | 1.00    |
| R5EATHLP   | 565  | 0.77 | 0.42    | 0.00    | 1.00    |
| S1EATHLP   | 143  | 0.75 | 0.44    | 0.00    | 1.00    |
| S2EATHLP   | 141  | 0.87 | 0.34    | 0.00    | 1.00    |
| S3EATHLP   | 283  | 0.59 | 0.49    | 0.00    | 1.00    |
| S4EATHLP   | 295  | 0.62 | 0.49    | 0.00    | 1.00    |
| S5EATHLP   | 206  | 0.75 | 0.44    | 0.00    | 1.00    |



|             |      |      |      |      |      |
|-------------|------|------|------|------|------|
| R1BEDHLP    | 771  | 0.51 | 0.50 | 0.00 | 1.00 |
| R2BEDHLP    | 672  | 0.54 | 0.50 | 0.00 | 1.00 |
| R3BEDHLP    | 1304 | 0.39 | 0.49 | 0.00 | 1.00 |
| R4BEDHLP    | 1479 | 0.38 | 0.49 | 0.00 | 1.00 |
| R5BEDHLP    | 1317 | 0.53 | 0.50 | 0.00 | 1.00 |
|             |      |      |      |      |      |
| S1BEDHLP    | 464  | 0.54 | 0.50 | 0.00 | 1.00 |
| S2BEDHLP    | 377  | 0.56 | 0.50 | 0.00 | 1.00 |
| S3BEDHLP    | 731  | 0.34 | 0.47 | 0.00 | 1.00 |
| S4BEDHLP    | 807  | 0.36 | 0.48 | 0.00 | 1.00 |
| S5BEDHLP    | 553  | 0.53 | 0.50 | 0.00 | 1.00 |
|             |      |      |      |      |      |
| R1TOILETHLP | 533  | 0.53 | 0.50 | 0.00 | 1.00 |
| R2TOILETHLP | 488  | 0.63 | 0.48 | 0.00 | 1.00 |
| R3TOILETHLP | 1015 | 0.46 | 0.50 | 0.00 | 1.00 |
| R4TOILETHLP | 989  | 0.46 | 0.50 | 0.00 | 1.00 |
| R5TOILETHLP | 1138 | 0.51 | 0.50 | 0.00 | 1.00 |
|             |      |      |      |      |      |
| S1TOILETHLP | 295  | 0.51 | 0.50 | 0.00 | 1.00 |
| S2TOILETHLP | 258  | 0.65 | 0.48 | 0.00 | 1.00 |
| S3TOILETHLP | 509  | 0.42 | 0.49 | 0.00 | 1.00 |
| S4TOILETHLP | 507  | 0.42 | 0.49 | 0.00 | 1.00 |
| S5TOILETHLP | 465  | 0.50 | 0.50 | 0.00 | 1.00 |

### Categorical Variable Codes

|                               |            |            |            |            |            |
|-------------------------------|------------|------------|------------|------------|------------|
| Value-----                    | R1DRESSHLP | R2DRESSHLP | R3DRESSHLP | R4DRESSHLP | R5DRESSHLP |
| .d:DK                         | 42         |            | 1          | 7          | 2          |
| .m:Missing                    | 38         | 25         |            | 40         | 17         |
| .p:Proxy interview, not asked | 1032       | 1178       | 1275       | 929        | 1328       |
| .r:Refuse                     | 57         | 1          | 5          | 1          | 9          |
| .x:no difficulty              | 13147      | 11727      | 13103      | 12296      | 14151      |
| 0.No                          | 551        | 461        | 945        | 951        | 1089       |
| 1.Yes                         | 319        | 312        | 394        | 555        | 518        |

|                               |            |            |            |            |            |
|-------------------------------|------------|------------|------------|------------|------------|
| Value-----                    | S1DRESSHLP | S2DRESSHLP | S3DRESSHLP | S4DRESSHLP | S5DRESSHLP |
| .d:DK                         | 33         |            | 1          | 7          | 1          |
| .m:Missing                    | 13         | 6          |            | 10         | 2          |
| .p:Proxy interview, not asked | 660        | 821        | 726        | 470        | 560        |
| .r:Refuse                     | 36         | 1          | 1          |            | 5          |
| .u:Unmar                      | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      | 333        | 131        | 349        | 280        | 501        |
| .x:no difficulty              | 9355       | 8272       | 9049       | 8290       | 6157       |
| 0.No                          | 348        | 279        | 575        | 572        | 502        |
| 1.Yes                         | 203        | 185        | 240        | 303        | 234        |

|                  |           |           |           |           |           |
|------------------|-----------|-----------|-----------|-----------|-----------|
| Value-----       | R1WALKHLP | R2WALKHLP | R3WALKHLP | R4WALKHLP | R5WALKHLP |
| .d:DK            | 37        |           | 31        | 6         | 4         |
| .m:Missing       | 40        | 56        |           | 40        | 18        |
| .r:Refuse        | 152       | 5         | 5         | 1         | 87        |
| .x:no difficulty | 14182     | 12880     | 14443     | 13378     | 15555     |
| 0.No             | 331       | 304       | 711       | 795       | 655       |
| 1.Yes            | 444       | 459       | 533       | 559       | 795       |

|                  |           |           |           |           |           |
|------------------|-----------|-----------|-----------|-----------|-----------|
| Value-----       | S1WALKHLP | S2WALKHLP | S3WALKHLP | S4WALKHLP | S5WALKHLP |
| .d:DK            | 23        |           | 25        | 5         |           |
| .m:Missing       | 14        | 30        |           | 10        | 3         |
| .r:Refuse        | 96        | 3         | 2         |           | 57        |
| .u:Unmar         | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR         | 333       | 131       | 349       | 280       | 501       |
| .x:no difficulty | 10094     | 9136      | 9944      | 8998      | 6800      |
| 0.No             | 164       | 152       | 383       | 386       | 286       |
| 1.Yes            | 257       | 243       | 238       | 253       | 315       |

|            |            |            |            |            |            |
|------------|------------|------------|------------|------------|------------|
| Value----- | R1BATHEHLP | R2BATHEHLP | R3BATHEHLP | R4BATHEHLP | R5BATHEHLP |
| .d:DK      | 37         | 1          | 31         | 7          | 2          |
| .m:Missing | 40         | 59         |            | 40         | 18         |

|                  |  |             |             |             |             |             |
|------------------|--|-------------|-------------|-------------|-------------|-------------|
| .r:Refuse        |  | 166         | 5           | 2           | 1           | 87          |
| .x:no difficulty |  | 14400       | 13121       | 14888       | 13722       | 16005       |
| 0.No             |  | 147         | 118         | 231         | 316         | 247         |
| 1.Yes            |  | 396         | 400         | 571         | 693         | 755         |
| Value-----       |  | S1BATHEHLP  | S2BATHEHLP  | S3BATHEHLP  | S4BATHEHLP  | S5BATHEHLP  |
| .d:DK            |  | 23          |             | 25          | 6           |             |
| .m:Missing       |  | 14          | 29          |             | 10          | 3           |
| .r:Refuse        |  | 98          | 3           | 1           |             | 56          |
| .u:Unmar         |  | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR         |  | 333         | 131         | 349         | 280         | 501         |
| .x:no difficulty |  | 10228       | 9259        | 10209       | 9166        | 6989        |
| 0.No             |  | 77          | 56          | 124         | 173         | 112         |
| 1.Yes            |  | 208         | 217         | 233         | 297         | 301         |
| Value-----       |  | R1EATHLP    | R2EATHLP    | R3EATHLP    | R4EATHLP    | R5EATHLP    |
| .d:DK            |  | 36          | 1           | 31          | 6           | 2           |
| .m:Missing       |  | 40          | 53          |             | 40          | 18          |
| .r:Refuse        |  | 160         | 5           | 3           | 2           | 87          |
| .x:no difficulty |  | 14655       | 13378       | 15109       | 14128       | 16442       |
| 0.No             |  | 62          | 46          | 202         | 179         | 132         |
| 1.Yes            |  | 233         | 221         | 378         | 424         | 433         |
| Value-----       |  | S1EATHLP    | S2EATHLP    | S3EATHLP    | S4EATHLP    | S5EATHLP    |
| .d:DK            |  | 23          |             | 25          | 5           |             |
| .m:Missing       |  | 14          | 27          |             | 10          | 3           |
| .r:Refuse        |  | 97          | 3           | 1           | 1           | 57          |
| .u:Unmar         |  | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR         |  | 333         | 131         | 349         | 280         | 501         |
| .x:no difficulty |  | 10371       | 9393        | 10283       | 9341        | 7195        |
| 0.No             |  | 36          | 19          | 115         | 113         | 52          |
| 1.Yes            |  | 107         | 122         | 168         | 182         | 154         |
| Value-----       |  | R1BEDHLP    | R2BEDHLP    | R3BEDHLP    | R4BEDHLP    | R5BEDHLP    |
| .d:DK            |  | 38          | 1           | 32          | 6           | 3           |
| .m:Missing       |  | 40          | 52          |             | 40          | 18          |
| .r:Refuse        |  | 163         | 5           | 4           | 1           | 89          |
| .x:no difficulty |  | 14174       | 12974       | 14383       | 13253       | 15687       |
| 0.No             |  | 374         | 307         | 796         | 913         | 624         |
| 1.Yes            |  | 397         | 365         | 508         | 566         | 693         |
| Value-----       |  | S1BEDHLP    | S2BEDHLP    | S3BEDHLP    | S4BEDHLP    | S5BEDHLP    |
| .d:DK            |  | 23          |             | 26          | 5           |             |
| .m:Missing       |  | 14          | 27          |             | 10          | 3           |
| .r:Refuse        |  | 102         | 3           | 2           |             | 58          |
| .u:Unmar         |  | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR         |  | 333         | 131         | 349         | 280         | 501         |
| .x:no difficulty |  | 10045       | 9157        | 9833        | 8830        | 6847        |
| 0.No             |  | 215         | 164         | 482         | 517         | 258         |
| 1.Yes            |  | 249         | 213         | 249         | 290         | 295         |
| Value-----       |  | R1TOILETHLP | R2TOILETHLP | R3TOILETHLP | R4TOILETHLP | R5TOILETHLP |
| .d:DK            |  | 48          | 1           | 33          | 6           | 6           |
| .m:Missing       |  | 40          | 54          |             | 40          | 18          |
| .r:Refuse        |  | 180         | 5           | 4           | 1           | 87          |
| .x:no difficulty |  | 14385       | 13156       | 14671       | 13743       | 15865       |
| 0.No             |  | 250         | 183         | 551         | 535         | 553         |
| 1.Yes            |  | 283         | 305         | 464         | 454         | 585         |
| Value-----       |  | S1TOILETHLP | S2TOILETHLP | S3TOILETHLP | S4TOILETHLP | S5TOILETHLP |
| .d:DK            |  | 29          |             | 26          | 5           | 2           |
| .m:Missing       |  | 14          | 27          |             | 10          | 3           |
| .r:Refuse        |  | 110         | 3           | 1           |             | 57          |
| .u:Unmar         |  | 4205        | 4009        | 4782        | 4847        | 5227        |
| .v:SP NR         |  | 333         | 131         | 349         | 280         | 501         |
| .x:no difficulty |  | 10200       | 9276        | 10056       | 9130        | 6934        |
| 0.No             |  | 144         | 91          | 296         | 296         | 231         |
| 1.Yes            |  | 151         | 167         | 213         | 211         | 234         |

## How Constructed

RwDRESSHLP, RwWALKHLP, RwBATHEHLP, RWEATHLP, RwbEDHLP, and RwTOILETHLP indicate whether anyone helps the respondent with each ADL. RwDRESSHLP indicates whether anyone helps the respondent dress. RwWALKHLP indicates whether anyone helps the respondent walk across a room. RwBATHEHLP indicates whether anyone helps the respondent bathe or shower. RWEATHLP indicates whether anyone helps the respondent eat, such as cutting up food. RwbEDHLP indicates whether anyone helps the respondent get into or out of bed. RwTOILETHLP indicates whether anyone helps the respondent use the toilet, including getting on or off the toilet or squatting. These variables are coded as 1 if someone helps the respondent with the ADL. These variables are coded as 0 if nobody helps the respondent with the ADL. If the respondent indicates having no difficulty with the ADL or with other mobility tasks that precede the ADL questions in the interview, then RwDRESSHLP, RwWALKHLP, RwBATHEHLP, RWEATHLP, RwbEDHLP, and RwTOILETHLP are assigned special missing value .x. If the interview is conducted by proxy, then questions about help dressing are not asked and RwDRESSHLP is assigned special missing value .p. Don't know, refused, or other missing responses are assigned special missing codes .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

SwDRESSHLP, SwWALKHLP, SwBATHEHLP, SweATHLP, SwBEDHLP, and SwTOILETHLP indicate whether anyone helps the respondent's current wave's spouse with the associated ADL. These values are taken from RwDRESSHLP, RwWALKHLP, RwBATHEHLP, RWEATHLP, RwbEDHLP, and RwTOILETHLP. In addition to the special missing codes employed by RwDRESSHLP, RwWALKHLP, RwBATHEHLP, RWEATHLP, RwbEDHLP, and RwTOILETHLP, SwDRESSHLP, SwWALKHLP, SwBATHEHLP, SweATHLP, SwBEDHLP, and SwTOILETHLP employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

In Waves 1 and 2, respondents can be asked up to 2 questions regarding help received for ADL activities. If the respondent is married or in a union, then the respondent is first asked: "Does your spouse help you?". All respondents are asked: "Does anyone (else) ever help you?". The variables in Waves 1 and 2 indicate help received from the respondent's spouse or someone else. Starting in Wave 3, only a single question is asked: "Does someone help you?". As such, starting in Wave 3, the variables indicate help received from anyone.

In Waves 1 and 2, respondents are only asked if they received help with an ADL activity if they reported that they had difficulty with, didn't do, or can't do the activity. Starting in Wave 3, all respondents are asked whether they received help with an ADL activity regardless of reporting difficulty with the activity. While these variables have been constructed to be as comparable as possible across waves, it is possible that those who reported having no difficulty with an ADL could receive help with the ADL and so would be assigned a value of 1 for these variables starting in Wave 3.

## Differences with the RAND HRS/Harmonized HRS

These variables are somewhat comparable to RwWALKRH, RwDRESSH, RwBATHH, RWEATH, RwbEDH, and RwTOILTH in the RAND HRS. Please keep in mind that no difficulty is assigned special missing .s and don't do is assigned special missing .x in the RAND HRS, while no difficulty is assigned special missing .x in the Harmonized MHAS. This difference and the difference in naming ensure comparability between the Harmonized MHAS and other Harmonized datasets.

Help received using the toilet includes getting on and off the toilet or squatting in RwTOILETHLP in the Harmonized MHAS, and only includes getting up or down from the toilet in RwTOILTH in the RAND HRS.

## MHAS Variables Used

|         |                      |
|---------|----------------------|
| Wave 1: |                      |
| H14     | help dressing        |
| H15_1   | difficult walking    |
| H15_3   | spouse helps walking |
| H15_4   | other helps walking  |
| H16_1   | difficult bathing    |
| H16_3   | spouse helps bathing |
| H16_4   | other helps bathing  |
| H17_1   | difficult eating     |
| H17_3   | spouse helps eating  |

|         |   |
|---------|---|
| H17_4   | other helps eating                                    |
| H18_1   | difficult getting in an out of bed                    |
| H18_3   | spouse helps getting in an out of bed                 |
| H18_4   | other helps getting in an out of bed                  |
| H19_1   | difficult using toilet                                |
| H19_3   | spouse helps using toilet                             |
| H19_4   | other helps using toilet                              |
| Wave 2: |   |
| H14     | someone help you to get dressed                       |
| H15E    | spouse helps  |
| H15F    | additional person helps                               |
| H16E    | spouse helps  |
| H16F    | additional person helps                               |
| H17E    | spouse helps  |
| H17F    | additional person helps                               |
| H18E    | spouse helps  |
| H18F    | additional person helps                               |
| H19E    | spouse helps  |
| H19F    | additional person helps                               |
| Wave 3: |   |
| H14_12  | Someone help you to get dressed                       |
| H15D_12 | Someone help you walk across room                     |
| H16D_12 | Someone help you to bathe or shower                   |
| H17D_12 | Does someone help you eat your food                   |
| H18D_12 | Does someone help you get into or out of bed          |
| H19D_12 | Does someone help you use toilet, get on off          |
| Wave 4: |   |
| H14_15  | Does someone help respondent to get dressed           |
| H15D_15 | Does someone help respondent walking across a room    |
| H16D_15 | Does someone help respondent bathing or showering     |
| H17D_15 | Does someone help respondent eating                   |
| H18D_15 | Does someone help respondent getting in or out of bed |
| H19D_15 | Does someone help respondent using the toilet         |
| Wave 5: |   |
| H14_18  | Does someone help R to get dressed                    |
| H15D_18 | Does someone help R walking across a room             |
| H16D_18 | Does someone help R bathing or showering              |
| H17D_18 | Does someone help R eating                            |
| H18D_18 | Does someone help R getting in or out of bed          |
| H19D_18 | Does someone help R using the toilet                  |

|                  |
|------------------|
| <b>IADL Help</b> |
|------------------|

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 1    | R1MEALHLP  | r1mealhlp: w1 whether anyone helps R with meal preparation | Categ |
| 2    | R2MEALHLP  | r2mealhlp: w2 whether anyone helps R with meal preparation | Categ |
| 3    | R3MEALHLP  | r3mealhlp: w3 whether anyone helps R with meal preparation | Categ |
| 4    | R4MEALHLP  | r4mealhlp: w4 whether anyone helps R with meal preparation | Categ |
| 5    | R5MEALHLP  | r5mealhlp: w5 whether anyone helps R with meal preparation | Categ |
| 1    | S1MEALHLP  | s1mealhlp: w1 whether anyone helps S with meal preparation | Categ |
| 2    | S2MEALHLP  | s2mealhlp: w2 whether anyone helps S with meal preparation | Categ |
| 3    | S3MEALHLP  | s3mealhlp: w3 whether anyone helps S with meal preparation | Categ |
| 4    | S4MEALHLP  | s4mealhlp: w4 whether anyone helps S with meal preparation | Categ |
| 5    | S5MEALHLP  | s5mealhlp: w5 whether anyone helps S with meal preparation | Categ |
| 1    | R1SHOPHLP  | r1shophlp: w1 whether anyone helps R with grocery shopping | Categ |
| 2    | R2SHOPHLP  | r2shophlp: w2 whether anyone helps R with grocery shopping | Categ |
| 3    | R3SHOPHLP  | r3shophlp: w3 whether anyone helps R with grocery shopping | Categ |
| 4    | R4SHOPHLP  | r4shophlp: w4 whether anyone helps R with grocery shopping | Categ |
| 5    | R5SHOPHLP  | r5shophlp: w5 whether anyone helps R with grocery shopping | Categ |
| 1    | S1SHOPHLP  | s1shophlp: w1 whether anyone helps S with grocery shopping | Categ |
| 2    | S2SHOPHLP  | s2shophlp: w2 whether anyone helps S with grocery shopping | Categ |
| 3    | S3SHOPHLP  | s3shophlp: w3 whether anyone helps S with grocery shopping | Categ |
| 4    | S4SHOPHLP  | s4shophlp: w4 whether anyone helps S with grocery shopping | Categ |
| 5    | S5SHOPHLP  | s5shophlp: w5 whether anyone helps S with grocery shopping | Categ |
| 1    | R1MEDHLP   | r1medhlp: w1 whether anyone helps R with taking medication | Categ |
| 2    | R2MEDHLP   | r2medhlp: w2 whether anyone helps R with taking medication | Categ |
| 3    | R3MEDHLP   | r3medhlp: w3 whether anyone helps R with taking medication | Categ |
| 4    | R4MEDHLP   | r4medhlp: w4 whether anyone helps R with taking medication | Categ |
| 5    | R5MEDHLP   | r5medhlp: w5 whether anyone helps R with taking medication | Categ |
| 1    | S1MEDHLP   | s1medhlp: w1 whether anyone helps S with taking medication | Categ |
| 2    | S2MEDHLP   | s2medhlp: w2 whether anyone helps S with taking medication | Categ |
| 3    | S3MEDHLP   | s3medhlp: w3 whether anyone helps S with taking medication | Categ |
| 4    | S4MEDHLP   | s4medhlp: w4 whether anyone helps S with taking medication | Categ |
| 5    | S5MEDHLP   | s5medhlp: w5 whether anyone helps S with taking medication | Categ |
| 1    | R1MONEYHLP | r1moneyhlp: w1 whether anyone helps R with managing money  | Categ |
| 2    | R2MONEYHLP | r2moneyhlp: w2 whether anyone helps R with managing money  | Categ |
| 3    | R3MONEYHLP | r3moneyhlp: w3 whether anyone helps R with managing money  | Categ |
| 4    | R4MONEYHLP | r4moneyhlp: w4 whether anyone helps R with managing money  | Categ |
| 5    | R5MONEYHLP | r5moneyhlp: w5 whether anyone helps R with managing money  | Categ |
| 1    | S1MONEYHLP | s1moneyhlp: w1 whether anyone helps S with managing money  | Categ |
| 2    | S2MONEYHLP | s2moneyhlp: w2 whether anyone helps S with managing money  | Categ |
| 3    | S3MONEYHLP | s3moneyhlp: w3 whether anyone helps S with managing money  | Categ |
| 4    | S4MONEYHLP | s4moneyhlp: w4 whether anyone helps S with managing money  | Categ |
| 5    | S5MONEYHLP | s5moneyhlp: w5 whether anyone helps S with managing money  | Categ |

## Descriptive Statistics

| Variable  | N    | Mean | Std Dev | Minimum | Maximum |
|-----------|------|------|---------|---------|---------|
| R1MEALHLP | 1103 | 0.83 | 0.38    | 0.00    | 1.00    |
| R2MEALHLP | 1015 | 0.84 | 0.36    | 0.00    | 1.00    |
| R3MEALHLP | 1253 | 0.70 | 0.46    | 0.00    | 1.00    |
| R4MEALHLP | 1241 | 0.77 | 0.42    | 0.00    | 1.00    |
| R5MEALHLP | 1045 | 0.75 | 0.43    | 0.00    | 1.00    |

|            |      |      |      |      |      |
|------------|------|------|------|------|------|
| S1MEALHLP  | 779  | 0.85 | 0.36 | 0.00 | 1.00 |
| S2MEALHLP  | 720  | 0.78 | 0.41 | 0.00 | 1.00 |
| S3MEALHLP  | 814  | 0.64 | 0.48 | 0.00 | 1.00 |
| S4MEALHLP  | 712  | 0.70 | 0.46 | 0.00 | 1.00 |
| S5MEALHLP  | 474  | 0.70 | 0.46 | 0.00 | 1.00 |
| R1SHOPHLP  | 1109 | 0.86 | 0.34 | 0.00 | 1.00 |
| R2SHOPHLP  | 999  | 0.91 | 0.29 | 0.00 | 1.00 |
| R3SHOPHLP  | 1519 | 0.82 | 0.39 | 0.00 | 1.00 |
| R4SHOPHLP  | 1684 | 0.87 | 0.33 | 0.00 | 1.00 |
| R5SHOPHLP  | 1392 | 0.85 | 0.35 | 0.00 | 1.00 |
| S1SHOPHLP  | 657  | 0.87 | 0.33 | 0.00 | 1.00 |
| S2SHOPHLP  | 582  | 0.84 | 0.37 | 0.00 | 1.00 |
| S3SHOPHLP  | 803  | 0.79 | 0.40 | 0.00 | 1.00 |
| S4SHOPHLP  | 835  | 0.85 | 0.36 | 0.00 | 1.00 |
| S5SHOPHLP  | 591  | 0.84 | 0.37 | 0.00 | 1.00 |
| R1MEDHLP   | 356  | 0.84 | 0.36 | 0.00 | 1.00 |
| R2MEDHLP   | 291  | 0.88 | 0.32 | 0.00 | 1.00 |
| R3MEDHLP   | 502  | 0.53 | 0.50 | 0.00 | 1.00 |
| R4MEDHLP   | 660  | 0.59 | 0.49 | 0.00 | 1.00 |
| R5MEDHLP   | 426  | 0.70 | 0.46 | 0.00 | 1.00 |
| S1MEDHLP   | 185  | 0.87 | 0.34 | 0.00 | 1.00 |
| S2MEDHLP   | 173  | 0.80 | 0.40 | 0.00 | 1.00 |
| S3MEDHLP   | 292  | 0.48 | 0.50 | 0.00 | 1.00 |
| S4MEDHLP   | 351  | 0.53 | 0.50 | 0.00 | 1.00 |
| S5MEDHLP   | 164  | 0.70 | 0.46 | 0.00 | 1.00 |
| R1MONEYHLP | 346  | 0.83 | 0.38 | 0.00 | 1.00 |
| R2MONEYHLP | 283  | 0.96 | 0.20 | 0.00 | 1.00 |
| R3MONEYHLP | 382  | 0.73 | 0.44 | 0.00 | 1.00 |
| R4MONEYHLP | 481  | 0.74 | 0.44 | 0.00 | 1.00 |
| R5MONEYHLP | 404  | 0.81 | 0.39 | 0.00 | 1.00 |
| S1MONEYHLP | 175  | 0.83 | 0.37 | 0.00 | 1.00 |
| S2MONEYHLP | 160  | 0.93 | 0.26 | 0.00 | 1.00 |
| S3MONEYHLP | 212  | 0.69 | 0.46 | 0.00 | 1.00 |
| S4MONEYHLP | 245  | 0.72 | 0.45 | 0.00 | 1.00 |
| S5MONEYHLP | 173  | 0.79 | 0.41 | 0.00 | 1.00 |

Categorical Variable Codes

|                               |           |           |           |           |           |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| Value-----                    | R1MEALHLP | R2MEALHLP | R3MEALHLP | R4MEALHLP | R5MEALHLP |
| .d:DK                         | 49        |           | 2         | 6         | 5         |
| .m:Missing                    | 38        | 104       |           | 40        | 17        |
| .p:Proxy interview, not asked | 1032      | 1162      | 1275      | 929       | 1328      |
| .r:Refuse                     | 123       | 3         | 3         | 3         | 18        |
| .x:no difficulty              | 12841     | 11420     | 13190     | 12560     | 14701     |
| 0.No                          | 188       | 158       | 372       | 291       | 257       |
| 1.Yes                         | 915       | 857       | 881       | 950       | 788       |
| Value-----                    | S1MEALHLP | S2MEALHLP | S3MEALHLP | S4MEALHLP | S5MEALHLP |
| .d:DK                         | 40        |           | 2         | 6         | 3         |
| .m:Missing                    | 13        | 12        |           | 10        | 2         |
| .p:Proxy interview, not asked | 660       | 814       | 726       | 470       | 560       |
| .r:Refuse                     | 103       | 2         | 2         | 2         | 8         |
| .u:Unmar                      | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      | 333       | 131       | 349       | 280       | 501       |
| .x:no difficulty              | 9053      | 8016      | 9048      | 8452      | 6414      |
| 0.No                          | 119       | 158       | 296       | 213       | 140       |
| 1.Yes                         | 660       | 562       | 518       | 499       | 334       |
| Value-----                    | R1SHOPHLP | R2SHOPHLP | R3SHOPHLP | R4SHOPHLP | R5SHOPHLP |
| .d:DK                         | 37        |           | 3         | 6         | 2         |

|                               |  |            |            |            |            |            |
|-------------------------------|--|------------|------------|------------|------------|------------|
| .m:Missing                    |  | 38         | 106        |            | 40         | 17         |
| .p:Proxy interview, not asked |  | 1032       | 1162       | 1275       | 929        | 1328       |
| .r:Refuse                     |  | 112        | 2          | 2          | 1          | 13         |
| .x:no difficulty              |  | 12858      | 11435      | 12924      | 12119      | 14362      |
| 0.No                          |  | 151        | 94         | 276        | 213        | 205        |
| 1.Yes                         |  | 958        | 905        | 1243       | 1471       | 1187       |
| Value-----                    |  | S1SHOPHLP  | S2SHOPHLP  | S3SHOPHLP  | S4SHOPHLP  | S5SHOPHLP  |
| .d:DK                         |  | 28         |            | 1          | 6          | 1          |
| .m:Missing                    |  | 13         | 8          |            | 10         | 2          |
| .p:Proxy interview, not asked |  | 660        | 814        | 726        | 470        | 560        |
| .r:Refuse                     |  | 83         | 2          |            |            | 6          |
| .u:Unmar                      |  | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      |  | 333        | 131        | 349        | 280        | 501        |
| .x:no difficulty              |  | 9207       | 8158       | 9062       | 8331       | 6301       |
| 0.No                          |  | 83         | 92         | 165        | 128        | 94         |
| 1.Yes                         |  | 574        | 490        | 638        | 707        | 497        |
| Value-----                    |  | R1MEDHLP   | R2MEDHLP   | R3MEDHLP   | R4MEDHLP   | R5MEDHLP   |
| .d:DK                         |  | 20         |            | 1          | 6          |            |
| .m:Missing                    |  | 38         | 57         |            | 40         | 17         |
| .p:Proxy interview, not asked |  | 1032       | 1162       | 1275       | 929        | 1328       |
| .r:Refuse                     |  | 48         | 1          | 1          | 1          | 15         |
| .x:no difficulty              |  | 13692      | 12193      | 13944      | 13143      | 15328      |
| 0.No                          |  | 56         | 34         | 235        | 269        | 128        |
| 1.Yes                         |  | 300        | 257        | 267        | 391        | 298        |
| Value-----                    |  | S1MEDHLP   | S2MEDHLP   | S3MEDHLP   | S4MEDHLP   | S5MEDHLP   |
| .d:DK                         |  | 13         |            | 1          | 6          |            |
| .m:Missing                    |  | 13         | 8          |            | 10         | 2          |
| .p:Proxy interview, not asked |  | 660        | 814        | 726        | 470        | 560        |
| .r:Refuse                     |  | 32         | 1          |            |            | 7          |
| .u:Unmar                      |  | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      |  | 333        | 131        | 349        | 280        | 501        |
| .x:no difficulty              |  | 9745       | 8568       | 9573       | 8815       | 6728       |
| 0.No                          |  | 24         | 34         | 151        | 165        | 50         |
| 1.Yes                         |  | 161        | 139        | 141        | 186        | 114        |
| Value-----                    |  | R1MONEYHLP | R2MONEYHLP | R3MONEYHLP | R4MONEYHLP | R5MONEYHLP |
| .d:DK                         |  | 21         |            | 8          | 7          | 2          |
| .m:Missing                    |  | 38         | 53         |            | 40         | 17         |
| .p:Proxy interview, not asked |  | 1032       | 1161       | 1275       | 929        | 1328       |
| .r:Refuse                     |  | 56         | 2          | 2          | 1          | 13         |
| .x:no difficulty              |  | 13693      | 12205      | 14056      | 13321      | 15350      |
| 0.No                          |  | 60         | 12         | 102        | 124        | 75         |
| 1.Yes                         |  | 286        | 271        | 280        | 357        | 329        |
| Value-----                    |  | S1MONEYHLP | S2MONEYHLP | S3MONEYHLP | S4MONEYHLP | S5MONEYHLP |
| .d:DK                         |  | 14         |            | 4          | 5          |            |
| .m:Missing                    |  | 13         | 11         |            | 10         | 2          |
| .p:Proxy interview, not asked |  | 660        | 814        | 726        | 470        | 560        |
| .r:Refuse                     |  | 39         | 2          |            |            | 6          |
| .u:Unmar                      |  | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      |  | 333        | 131        | 349        | 280        | 501        |
| .x:no difficulty              |  | 9747       | 8577       | 9650       | 8922       | 6720       |
| 0.No                          |  | 29         | 12         | 65         | 69         | 37         |
| 1.Yes                         |  | 146        | 148        | 147        | 176        | 136        |

## How Constructed

RwMEALHLP, RwSHOPHLP, RwMEDHLP, and RwMONEYHLP indicate whether anyone helps the respondent with each IADL. RwMEALHLP indicates whether respondents who have difficulty with meal preparation have anyone help them prepare hot meals. RwSHOPHLP indicates whether respondents who have difficulty with grocery shopping have anyone help them shop for groceries. RwMEDHLP indicates whether respondents who have difficulty with taking medications have anyone help them with taking medications. RwMONEYHLP indicates whether respondents who have difficulty managing money have anyone help them manage their money. Respondents who report that they have difficulty with, "can't do", or "don't do" an IADL activity are asked whether they receive help with the IADL. These variables are coded as 1 if someone helps the respondent with the IADL, while a 0 indicates that nobody helps the respondent with the IADL. Respondents who do not have difficulty with a particular IADL are assigned special missing value code .x. These variables are assigned special missing value .p if the interview was completed by proxy. Don't know, refused, or other

missing responses are assigned special missing codes .d, .r, and .m, respectively. RwMEALHLP, RwSHOPHLP, RwMEDHLP, and RwmoneyHLP are set to plain missing (.) for respondents who did not participate in the current wave.

SwMEALHLP, SwSHOPHLP, SwMEDHLP, and SwMONEYHLP indicate whether anyone helps the respondent's current wave's spouse with the associated IADL. These values are taken from RwMEALHLP, RwSHOPHLP, RwMEDHLP, and RwmoneyHLP. In addition to the special missing codes employed by RwMEALHLP, RwSHOPHLP, RwMEDHLP, and RwmoneyHLP, SwMEALHLP, SwSHOPHLP, SwMEDHLP, and SwMONEYHLP employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

In Waves 1 and 2, the respondent is asked in separate questions whether their spouse helps with the IADL activity and whether anyone (else) ever helps with the IADL activity. Starting in Wave 3, the respondent is asked in a single question whether anyone ever helps with the IADL activity.

## Differences with the RAND HRS/Harmonized HRS

Unlike the HRS, the MHAS does not include using the phone and using a map as IADLs. In the HRS, if the respondent reports that they "can't do" or "don't do" the activity or if they have difficulty that is not the result of a health or memory problem, then they are not asked whether they receive help with that activity. Respondents in the MHAS, however, are asked whether they receive help with the activity if they report that they "can't do", "don't do", or have difficulty with the activity, regardless of whether it is the result of a health or memory problem.

## MHAS Variables Used

### Wave 1:

|       |                                      |
|-------|--------------------------------------|
| H26_3 | spouse helps with hot meal           |
| H26_4 | someone helps with hot meal          |
| H27_3 | spouse helps with shopping           |
| H27_4 | someone helps with shopping          |
| H28_3 | spouse helps with taking medication  |
| H28_4 | someone helps with taking medication |
| H29_3 | spouse helps with managing money     |
| H29_4 | someone helps with managing money    |

### Wave 2:

|      |                         |
|------|-------------------------|
| H26D | spouse helps            |
| H26E | additional person helps |
| H27D | spouse helps            |
| H27E | additional person helps |
| H28D | spouse helps            |
| H28E | additional person helps |
| H29D | spouse helps            |
| H29E | additional person helps |

### Wave 3:

|         |  |
|---------|--|
| H26C_12 | Does anyone help you prepare a hot meal    |
| H27C_12 | Does anyone help you shop for groceries    |
| H28C_12 | Does anyone help you take medications      |
| H29C_12 | Does anyone one help you manage your money |

### Wave 4:

|         |  |
|---------|--|
| H26C_15 | Does someone help respondent to prepare a hot meal   |
| H27C_15 | Does someone help respondent to shop for groceries   |
| H28C_15 | Does someone help respondent to take medications     |
| H29C_15 | Does someone help respondent to manage his/her money |

### Wave 5:

|         |   |
|---------|---|
| H26C_18 | Does someone help R to prepare a hot meal   |
| H27C_18 | Does someone help R to shop for groceries   |
| H28C_18 | Does someone help R to take medications     |
| H29C_18 | Does someone help R to manage his/her money |



Whether Uses Personal Aids

| Wave | Variable | Label   | Type  |
|------|----------|---|-------|
| 1    | R1WALKRE | r1walkre: w1 R uses equipment-Walking across room | Categ |
| 2    | R2WALKRE | r2walkre: w2 R uses equipment-Walking across room | Categ |
| 3    | R3WALKRE | r3walkre: w3 R uses equipment-Walking across room | Categ |
| 4    | R4WALKRE | r4walkre: w4 R uses equipment-Walking across room | Categ |
| 5    | R5WALKRE | r5walkre: w5 R uses equipment-Walking across room | Categ |
| 1    | S1WALKRE | s1walkre: w1 S uses equipment-Walking across room | Categ |
| 2    | S2WALKRE | s2walkre: w2 S uses equipment-Walking across room | Categ |
| 3    | S3WALKRE | s3walkre: w3 S uses equipment-Walking across room | Categ |
| 4    | S4WALKRE | s4walkre: w4 S uses equipment-Walking across room | Categ |
| 5    | S5WALKRE | s5walkre: w5 S uses equipment-Walking across room | Categ |
| 1    | R1BEDE   | r1bede: w1 R uses equipment-Getting in/out of bed | Categ |
| 2    | R2BEDE   | r2bede: w2 R uses equipment-Getting in/out of bed | Categ |
| 3    | R3BEDE   | r3bede: w3 R uses equipment-Getting in/out of bed | Categ |
| 4    | R4BEDE   | r4bede: w4 R uses equipment-Getting in/out of bed | Categ |
| 5    | R5BEDE   | r5bede: w5 R uses equipment-Getting in/out of bed | Categ |
| 1    | S1BEDE   | s1bede: w1 S uses equipment-Getting in/out of bed | Categ |
| 2    | S2BEDE   | s2bede: w2 S uses equipment-Getting in/out of bed | Categ |
| 3    | S3BEDE   | s3bede: w3 S uses equipment-Getting in/out of bed | Categ |
| 4    | S4BEDE   | s4bede: w4 S uses equipment-Getting in/out of bed | Categ |
| 5    | S5BEDE   | s5bede: w5 S uses equipment-Getting in/out of bed | Categ |

Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R1WALKRE | 7955  | 0.08 | 0.27    | 0.00    | 1.00    |
| R2WALKRE | 7231  | 0.09 | 0.29    | 0.00    | 1.00    |
| R3WALKRE | 9918  | 0.13 | 0.34    | 0.00    | 1.00    |
| R4WALKRE | 9800  | 0.17 | 0.38    | 0.00    | 1.00    |
| R5WALKRE | 10102 | 0.15 | 0.36    | 0.00    | 1.00    |
| S1WALKRE | 5230  | 0.06 | 0.24    | 0.00    | 1.00    |
| S2WALKRE | 4763  | 0.07 | 0.25    | 0.00    | 1.00    |
| S3WALKRE | 6257  | 0.10 | 0.30    | 0.00    | 1.00    |
| S4WALKRE | 6052  | 0.12 | 0.33    | 0.00    | 1.00    |
| S5WALKRE | 4573  | 0.14 | 0.34    | 0.00    | 1.00    |
| R1BEDE   | 7880  | 0.05 | 0.22    | 0.00    | 1.00    |
| R2BEDE   | 7230  | 0.05 | 0.23    | 0.00    | 1.00    |
| R3BEDE   | 9915  | 0.07 | 0.25    | 0.00    | 1.00    |
| R4BEDE   | 9797  | 0.09 | 0.29    | 0.00    | 1.00    |
| R5BEDE   | 10101 | 0.08 | 0.27    | 0.00    | 1.00    |
| S1BEDE   | 5184  | 0.04 | 0.19    | 0.00    | 1.00    |
| S2BEDE   | 4762  | 0.04 | 0.19    | 0.00    | 1.00    |
| S3BEDE   | 6255  | 0.05 | 0.21    | 0.00    | 1.00    |
| S4BEDE   | 6049  | 0.06 | 0.24    | 0.00    | 1.00    |
| S5BEDE   | 4573  | 0.07 | 0.26    | 0.00    | 1.00    |

Categorical Variable Codes

| Value----- | R1WALKRE | R2WALKRE | R3WALKRE | R4WALKRE | R5WALKRE |
|------------|----------|----------|----------|----------|----------|
| .d:DK      | 38       | 1        | 31       | 6        | 2        |
| .m:Missing | 40       | 47       |          | 40       | 18       |
| .r:Refuse  | 139      | 5        | 2        | 1        | 84       |

|                  |  |          |          |          |          |          |
|------------------|--|----------|----------|----------|----------|----------|
| .x:no difficulty |  | 7014     | 6420     | 5772     | 4932     | 6908     |
| 0.No             |  | 7306     | 6553     | 8606     | 8094     | 8580     |
| 1.Yes            |  | 649      | 678      | 1312     | 1706     | 1522     |
| Value-----       |  | S1WALKRE | S2WALKRE | S3WALKRE | S4WALKRE | S5WALKRE |
| .d:DK            |  | 22       | 1        | 25       | 5        |          |
| .m:Missing       |  | 14       | 23       |          | 10       | 3        |
| .r:Refuse        |  | 90       | 3        | 1        |          | 55       |
| .u:Unmar         |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR         |  | 333      | 131      | 349      | 280      | 501      |
| .x:no difficulty |  | 5292     | 4774     | 4309     | 3585     | 2830     |
| 0.No             |  | 4915     | 4432     | 5653     | 5303     | 3954     |
| 1.Yes            |  | 315      | 331      | 604      | 749      | 619      |
| Value-----       |  | R1BEDE   | R2BEDE   | R3BEDE   | R4BEDE   | R5BEDE   |
| .d:DK            |  | 43       | 1        | 32       | 6        | 3        |
| .m:Missing       |  | 40       | 47       |          | 40       | 18       |
| .r:Refuse        |  | 149      | 5        | 4        | 2        | 86       |
| .x:no difficulty |  | 7074     | 6421     | 5772     | 4934     | 6906     |
| 0.No             |  | 7473     | 6843     | 9249     | 8923     | 9272     |
| 1.Yes            |  | 407      | 387      | 666      | 874      | 829      |
| Value-----       |  | S1BEDE   | S2BEDE   | S3BEDE   | S4BEDE   | S5BEDE   |
| .d:DK            |  | 25       | 1        | 26       | 5        |          |
| .m:Missing       |  | 14       | 23       |          | 10       | 3        |
| .r:Refuse        |  | 96       | 3        | 1        | 1        | 55       |
| .u:Unmar         |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR         |  | 333      | 131      | 349      | 280      | 501      |
| .x:no difficulty |  | 5329     | 4775     | 4310     | 3587     | 2830     |
| 0.No             |  | 4991     | 4580     | 5953     | 5671     | 4232     |
| 1.Yes            |  | 193      | 182      | 302      | 378      | 341      |

## How Constructed

RwWALKRE and RwBEDE indicate whether the respondent uses any equipment or devices, such as a cane, walker, or wheelchair, to walk across a room or to get in and out of bed, respectively. These questions are asked regardless of difficulty with walking across a room or getting in and out of bed. These variables are coded as 1 if the respondent uses any equipment or devices to help with the ADL. These variables are coded as 0 if the respondent does not use any equipment or devices to help with the ADL despite having difficulty with the ADL. If the respondent indicates having no difficulty with the ADL or with other mobility tasks that precede the ADL questions in the interview, then RwWALKRE and RwBEDE are assigned special missing value .x. Don't know, refused, or other missing responses are assigned special missing codes .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

SwWALKRE and SwBEDE indicate whether the respondent's current wave's spouse uses any equipment or devices to walk across a room or to get in and out of bed, respectively. These values are taken from RwWALKRE and RwBEDE. In addition to the special missing codes employed by RwWALKRE and RwBEDE, SwWALKRE and SwDRESSE employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

These variables are somewhat comparable to RwWALKRE and RwBEDE in the RAND HRS. Please keep in mind that no difficulty is assigned special missing .s and don't do is assigned a value of 9 in the RAND HRS, while no difficulty is assigned special missing .x in the Harmonized MHAS. This difference and the difference in naming ensure comparability between the Harmonized MHAS and other Harmonized datasets.

## MHAS Variables Used

Wave 1:  
H1 long walk

|         |   |
|---------|---|
| H10     | pulling   |
| H11     | picking up  |
| H12     | picking up a coin                                       |
| H13     | dressing  |
| H15_1   | difficult walking                                       |
| H15_2   | help walking  |
| H18_1   | difficult getting in an out of bed                      |
| H18_2   | help getting in an out of bed                           |
| H4      | sitting 2 hours   |
| H5      | getting up  |
| H6      | long climbing   |
| H7      | short climbing  |
| H8      | bending   |
| H9      | extending arms  |
| Wave 2: |   |
| H1      | health problems-trouble walking blocks                  |
| H10     | health problems-trouble pushing or pulling              |
| H11     | health problems-trouble carrying objects                |
| H12     | health problems-trouble picking up a coin               |
| H13     | health problems-trouble dressing self                   |
| H15A    | health problem-trouble walking                          |
| H15B    | use equipment to walk                                   |
| H18A    | health problem-get in/out of bed                        |
| H18B    | use equipment to get in/out of bed                      |
| H4      | health problems-trouble staying seated                  |
| H5      | health problems-trouble getting up from chair           |
| H6      | health problems-trouble with flights of stairs          |
| H7      | health problems-trouble with 1 flight of stairs         |
| H8      | health problems-trouble sitting up                      |
| H9      | health problems-trouble lifting arms                    |
| Wave 3: |   |
| H11_12  | Because of health problem, difficulty carrying objects  |
| H12_12  | Because of health problem, difficulty picking up a coin |
| H13_12  | Because of health problem, difficulty dressing self     |
| H15A_12 | Because of health problem, difficulty walking           |
| H15B_12 | You use equipment to walk                               |
| H18A_12 | Because of health problem, difficulty get in/out of bed |
| H18B_12 | You use equipment to get in/out of bed                  |
| H1_12   | Because of health problem, difficulty walking blocks    |
| H4_12   | Because of health problem, difficulty staying seated    |
| H5_12   | Because of health problem, difficulty getting up from c |
| H6_12   | Because of health problem, difficulty with flights of s |
| H7_12   | Because of health problem, difficulty with 1 flight of  |
| H8_12   | Because of health problem, difficulty sitting up        |
| H9_12   | Because of health problem, difficulty lifting arms      |
| Wave 4: |   |
| H11_15  | Because of health problem, does respondent have difficu |
| H12_15  | Because of health problem, does respondent have difficu |
| H13_15  | Because of health problem, does respondent have difficu |
| H15A_15 | Because of health problem, does respondent have any dif |
| H15B_15 | Does respondent ever use equipment (to walk across a ro |
| H18A_15 | Because of health problem, does respondent have any dif |
| H18B_15 | Does respondent ever use equipment (to get in or out of |
| H1_15   | Because of health problem, does respondent have difficu |
| H4_15   | Because of health problem, does respondent have difficu |
| H5_15   | Because of health problem, does respondent have difficu |
| H6_15   | Because of health problem, does respondent have difficu |
| H7_15   | Because of health problem, does respondent have difficu |
| H8_15   | Because of health problem, does respondent have difficu |
| H9_15   | Because of health problem, does respondent have difficu |
| Wave 5: |   |
| H11_18  | Due to health problem, difficult for R to lift/carry ob |
| H12_18  | Due to health problem, does R have difficulty picking u |
| H13_18  | Due to health problem, difficult for R to dress, includ |

|         |   |
|---------|---|
| H15A_18 | Because of health problem, does R have any difficulty w |
| H15B_18 | R ever uses equipment (to walk across room) such as can |
| H18A_18 | Because of health problem, does R have any difficulty g |
| H18B_18 | R ever uses equipment to get in or out of bed, e.g. can |
| H1_18   | Because of health problem, does R have difficulty walki |
| H4_18   | Because of health problem, does R have difficulty sitti |
| H5_18   | Due to health problem, difficult for R to get up from c |
| H6_18   | Due to health problem, hard for R to climb several flig |
| H7_18   | Due to health problem, difficult for R to climb 1 fligh |
| H8_18   | Due to health problem, does R have difficulty stooping, |
| H9_18   | Due to health problem, difficult for R to reach/extend  |

|                        |
|------------------------|
| <b>Future ADL Help</b> |
|------------------------|

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 3    | R3FTRHLP | r3ftrhlp: w3 anyone able to help R with future adl needs | Categ |
| 4    | R4FTRHLP | r4ftrhlp: w4 anyone able to help R with future adl needs | Categ |
| 5    | R5FTRHLP | r5ftrhlp: w5 anyone able to help R with future adl needs | Categ |
| 3    | S3FTRHLP | s3ftrhlp: w3 anyone able to help S with future adl needs | Categ |
| 4    | S4FTRHLP | s4ftrhlp: w4 anyone able to help S with future adl needs | Categ |
| 5    | S5FTRHLP | s5ftrhlp: w5 anyone able to help S with future adl needs | Categ |

### Descriptive Statistics

| Variable | N     | Mean | Std Dev | Minimum | Maximum |
|----------|-------|------|---------|---------|---------|
| R3FTRHLP | 14073 | 0.62 | 0.49    | 0.00    | 1.00    |
| R4FTRHLP | 13730 | 0.60 | 0.49    | 0.00    | 1.00    |
| R5FTRHLP | 15710 | 0.66 | 0.47    | 0.00    | 1.00    |
| S3FTRHLP | 9732  | 0.61 | 0.49    | 0.00    | 1.00    |
| S4FTRHLP | 9309  | 0.59 | 0.49    | 0.00    | 1.00    |
| S5FTRHLP | 7000  | 0.66 | 0.47    | 0.00    | 1.00    |

### Categorical Variable Codes

| Value-----                    | R3FTRHLP | R4FTRHLP | R5FTRHLP |
|-------------------------------|----------|----------|----------|
| .d:DK                         | 703      | 578      | 554      |
| .m:Missing                    |          | 34       | 20       |
| .p:Proxy interview, not asked | 923      | 592      | 803      |
| .r:Refuse                     | 24       | 11       | 27       |
| 0.No                          | 5352     | 5461     | 5280     |
| 1.Yes                         | 8721     | 8269     | 10430    |

| Value-----                    | S3FTRHLP | S4FTRHLP | S5FTRHLP |
|-------------------------------|----------|----------|----------|
| .d:DK                         | 474      | 391      | 246      |
| .m:Missing                    |          | 4        |          |
| .p:Proxy interview, not asked | 368      | 134      | 201      |
| .r:Refuse                     | 18       | 8        | 14       |
| .u:Unmar                      | 4782     | 4844     | 5227     |
| .v:SP NR                      | 349      | 89       | 501      |
| 0.No                          | 3834     | 3784     | 2395     |
| 1.Yes                         | 5898     | 5525     | 4605     |

### How Constructed

RwFTRHLP indicates whether, supposing in the future the respondent needed help with basic personal care activities like eating or dressing (i.e. ADL), they have relatives or friends who could and would be willing to help them over a long period with said needs. RwFTRHLP is coded as 1 if the respondent would have someone who could and would help them in the future if need be, while a 0 indicates they do not have anyone. RwFTRHLP is assigned special missing value .p if this question is not asked because this section was answered by proxy. Don't know, refused, or other missing responses are assigned special missing values codes .d, .r, and .m, respectively. RwFTRHLP is set to plain missing (.) for respondents who did not participate in the current wave.

SwFTRHLP indicates whether the respondent's current wave's spouse has someone who could help with future ADL needs, and is taken from RwFTRHLP. In addition to the special missing codes employed by RwFTRHLP, SwFTRHLP employs two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

### Cross Wave Differences in MHAS

This question is asked starting in Wave 3.

Differences with the RAND HRS/Harmonized HRS

The HRS asks whether the respondent has any relative or friends besides a spouse who would be able to help, while the MHAS asks whether the respondent has any relative or friends who would be able to help, and makes no distinctions about a spouse.

The HRS only asks this question if the respondent does not already receive help with personal care (ADL) needs, those currently receiving help are assigned special missing .h in RwfTRHLP in the Harmonized HRS. This question is asked of everyone in the MHAS. Unlike the HRS, the MHAS does not ask who would be able to help in the future.

MHAS Variables Used

|              |  |
|--------------|--|
| Wave 3:      |  |
| G33_12       | In the future:Will respondent...from family/friends with |
| TIPENTG_12   | Type of interview section G 2012                         |
| Wave 4:      |  |
| G33_15       | In the future:Will respondent from family/friends with   |
| TIPENTG_15   | Type of interview Section G 2015                         |
| Wave 5:      |  |
| G33_18       | In the future:Will respondent from family/friends with   |
| TIPENT_HH_18 | Type of interview Household Sections 2018                |

### Activities of Daily Living: Whether Receives Any Care

| Wave | Variable | Label                                     | Type  |
|------|----------|---|-------|
| 1    | R1RACANY | r1racany: w1 R receives any care for ADLs | Categ |
| 2    | R2RACANY | r2racany: w2 R receives any care for ADLs | Categ |
| 3    | R3RACANY | r3racany: w3 R receives any care for ADLs | Categ |
| 4    | R4RACANY | r4racany: w4 R receives any care for ADLs | Categ |
| 5    | R5RACANY | r5racany: w5 R receives any care for ADLs | Categ |
|      |          |   |       |
| 1    | S1RACANY | s1racany: w1 S receives any care for ADLs | Categ |
| 2    | S2RACANY | s2racany: w2 S receives any care for ADLs | Categ |
| 3    | S3RACANY | s3racany: w3 S receives any care for ADLs | Categ |
| 4    | S4RACANY | s4racany: w4 S receives any care for ADLs | Categ |
| 5    | S5RACANY | s5racany: w5 S receives any care for ADLs | Categ |

### Descriptive Statistics

| Variable | N    | Mean | Std Dev | Minimum | Maximum |
|----------|------|------|---------|---------|---------|
| R1RACANY | 1653 | 0.47 | 0.50    | 0.00    | 1.00    |
| R2RACANY | 1526 | 0.52 | 0.50    | 0.00    | 1.00    |
| R3RACANY | 2957 | 0.40 | 0.49    | 0.00    | 1.00    |
| R4RACANY | 3012 | 0.43 | 0.50    | 0.00    | 1.00    |
| R5RACANY | 3034 | 0.45 | 0.50    | 0.00    | 1.00    |
|          |      |      |         |         |         |
| S1RACANY | 980  | 0.47 | 0.50    | 0.00    | 1.00    |
| S2RACANY | 865  | 0.53 | 0.50    | 0.00    | 1.00    |
| S3RACANY | 1682 | 0.34 | 0.47    | 0.00    | 1.00    |
| S4RACANY | 1650 | 0.39 | 0.49    | 0.00    | 1.00    |
| S5RACANY | 1296 | 0.44 | 0.50    | 0.00    | 1.00    |

### Categorical Variable Codes

| Value-----       | R1RACANY | R2RACANY | R3RACANY | R4RACANY | R5RACANY |
|------------------|----------|----------|----------|----------|----------|
| .d:DK            | 1        |          | 1        | 6        | 2        |
| .m:Missing       | 40       | 34       |          | 40       | 18       |
| .r:Refuse        | 2        |          | 1        | 1        | 82       |
| .x:no difficulty | 13490    | 12144    | 12764    | 11720    | 13978    |
| 0.No             | 873      | 737      | 1785     | 1715     | 1654     |
| 1.Yes            | 780      | 789      | 1172     | 1297     | 1380     |
|                  |          |          |          |          |          |
| Value-----       | S1RACANY | S2RACANY | S3RACANY | S4RACANY | S5RACANY |
| .d:DK            |          |          | 1        | 5        |          |
| .m:Missing       | 14       | 12       |          | 10       | 3        |
| .r:Refuse        | 1        |          |          |          | 55       |
| .u:Unmar         | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR         | 333      | 131      | 349      | 280      | 501      |
| .x:no difficulty | 9653     | 8687     | 8909     | 7987     | 6107     |
| 0.No             | 524      | 408      | 1107     | 1012     | 724      |
| 1.Yes            | 456      | 457      | 575      | 638      | 572      |

### How Constructed

RwRACANY indicates whether the respondent receives any care for difficulties with activities of daily living (ADL). If the respondent reports having difficulty with an ADL, then they are asked whether someone helps them with that activity. The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. RwRACANY is assigned a value of 0 if the respondent has difficulty with at least one ADL but receives no help with the activity. RwRACANY is assigned a value of 1 if the respondent has difficulty with at least one ADL and someone helps with at least one of the activities. RwRACANY is assigned special missing value .x if the respondent has no difficulty with any ADLs. Don't know, refused, and other missing responses are assigned special missing

values .d, .r, and .m, respectively. RWRACANY is assigned a blank missing (.) if the respondent did not participate in the current wave.

SwRACANY indicates whether the respondent's current wave's spouse receives any care for difficulties with ADLs, and its values are taken from RWRACANY. In addition to the special missing codes employed by RWRACANY, SwRACANY employs two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

No differences known.

## MHAS Variables Used

### Wave 1:

|       |                                       |
|-------|---------------------------------------|
| H14   | help dressing                         |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H19_3 | spouse helps using toilet             |
| H19_4 | other helps using toilet              |

### Wave 2:

|      |                                 |
|------|---------------------------------|
| H14  | someone help you to get dressed |
| H15E | spouse helps                    |
| H15F | additional person helps         |
| H16E | spouse helps                    |
| H16F | additional person helps         |
| H17E | spouse helps                    |
| H17F | additional person helps         |
| H18E | spouse helps                    |
| H18F | additional person helps         |
| H19E | spouse helps                    |
| H19F | additional person helps         |

### Wave 3:

|         |  |
|---------|--|
| H14_12  | Someone help you to get dressed              |
| H15D_12 | Someone help you walk across room            |
| H16D_12 | Someone help you to bathe or shower          |
| H17D_12 | Does someone help you eat your food          |
| H18D_12 | Does someone help you get into or out of bed |
| H19D_12 | Does someone help you use toilet, get on off |

### Wave 4:

|         |   |
|---------|---|
| H14_15  | Does someone help respondent to get dressed           |
| H15D_15 | Does someone help respondent walking across a room    |
| H16D_15 | Does someone help respondent bathing or showering     |
| H17D_15 | Does someone help respondent eating                   |
| H18D_15 | Does someone help respondent getting in or out of bed |
| H19D_15 | Does someone help respondent using the toilet         |

### Wave 5:

|         |  |
|---------|--|
| H14_18  | Does someone help R to get dressed           |
| H15D_18 | Does someone help R walking across a room    |
| H16D_18 | Does someone help R bathing or showering     |
| H17D_18 | Does someone help R eating                   |
| H18D_18 | Does someone help R getting in or out of bed |



H19D\_18 Does someone help R using the toilet

### Activities of Daily Living: Whether Receives Any Informal Care

| Wave | Variable  | Label   | Type  |
|------|-----------|---|-------|
| 1    | R1RACAANY | r1racaany: w1 R receives any informal care for ADLs | Categ |
| 2    | R2RACAANY | r2racaany: w2 R receives any informal care for ADLs | Categ |
| 3    | R3RACAANY | r3racaany: w3 R receives any informal care for ADLs | Categ |
| 4    | R4RACAANY | r4racaany: w4 R receives any informal care for ADLs | Categ |
| 5    | R5RACAANY | r5racaany: w5 R receives any informal care for ADLs | Categ |
| 1    | S1RACAANY | s1racaany: w1 S receives any informal care for ADLs | Categ |
| 2    | S2RACAANY | s2racaany: w2 S receives any informal care for ADLs | Categ |
| 3    | S3RACAANY | s3racaany: w3 S receives any informal care for ADLs | Categ |
| 4    | S4RACAANY | s4racaany: w4 S receives any informal care for ADLs | Categ |
| 5    | S5RACAANY | s5racaany: w5 S receives any informal care for ADLs | Categ |

### Descriptive Statistics

| Variable  | N    | Mean | Std Dev | Minimum | Maximum |
|-----------|------|------|---------|---------|---------|
| R1RACAANY | 1653 | 0.41 | 0.49    | 0.00    | 1.00    |
| R2RACAANY | 1530 | 0.44 | 0.50    | 0.00    | 1.00    |
| R3RACAANY | 2957 | 0.35 | 0.48    | 0.00    | 1.00    |
| R4RACAANY | 3012 | 0.37 | 0.48    | 0.00    | 1.00    |
| R5RACAANY | 3034 | 0.40 | 0.49    | 0.00    | 1.00    |
| S1RACAANY | 980  | 0.41 | 0.49    | 0.00    | 1.00    |
| S2RACAANY | 869  | 0.45 | 0.50    | 0.00    | 1.00    |
| S3RACAANY | 1682 | 0.28 | 0.45    | 0.00    | 1.00    |
| S4RACAANY | 1650 | 0.31 | 0.46    | 0.00    | 1.00    |
| S5RACAANY | 1296 | 0.37 | 0.48    | 0.00    | 1.00    |

### Categorical Variable Codes

| Value-----       | R1RACAANY | R2RACAANY | R3RACAANY | R4RACAANY | R5RACAANY |
|------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK            | 1         |           | 1         | 6         | 2         |
| .m:Missing       | 40        | 30        |           | 40        | 18        |
| .r:Refuse        | 2         |           | 1         | 1         | 82        |
| .x:no difficulty | 13490     | 12144     | 12764     | 11720     | 13978     |
| 0.No             | 969       | 852       | 1926      | 1912      | 1834      |
| 1.Yes            | 684       | 678       | 1031      | 1100      | 1200      |

| Value-----       | S1RACAANY | S2RACAANY | S3RACAANY | S4RACAANY | S5RACAANY |
|------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK            |           |           | 1         | 5         |           |
| .m:Missing       | 14        | 8         |           | 10        | 3         |
| .r:Refuse        | 1         |           |           |           | 55        |
| .u:Unmar         | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR         | 333       | 131       | 349       | 280       | 501       |
| .x:no difficulty | 9653      | 8687      | 8909      | 7987      | 6107      |
| 0.No             | 581       | 479       | 1208      | 1133      | 816       |
| 1.Yes            | 399       | 390       | 474       | 517       | 480       |

### How Constructed

RwRACAANY indicates whether the respondent receives any informal care for difficulties with activities of daily living (ADL). The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. If the respondent reports having difficulty with an ADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with ADLs. The following relationships are considered to provide informal care: spouse, child, child-in-law, grandchild, parent, other relative, other person.

Please note that for each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

RwRACAANY is assigned a value of 0 if the respondent has difficulty with at least one ADL but receives no help with the activity from an informal caregiver, or does not receive any help at all. RwRACAANY is assigned a value of 1 if the respondent has difficulty with at least one ADL and an informal caregiver helps with at least one of the activities. RwRACAANY is assigned special missing value .x if the respondent has no difficulty with any ADLs. Don't know, refused, and other missing responses are assigned special missing values .d, .r, and .m, respectively. RwRACAANY is assigned a blank missing (.) if the respondent did not participate in the current wave.

SwRACAANY indicates whether the respondent's current wave's spouse receives any informal care for difficulties with ADLs, and its values are taken from RwRACAANY. In addition to the special missing codes employed by RwRACAANY, SwRACAANY employs two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers in Waves 1 and 2, up to 8 caregivers in Waves 3 and 4, and up to 3 caregivers in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible in the Harmonized HRS and Harmonized MHAS.

## MHAS Variables Used

### Wave 1:

|       |                                       |
|-------|---------------------------------------|
| H14   | help dressing                         |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H19_3 | spouse helps using toilet             |
| H19_4 | other helps using toilet              |

### Wave 1 Helper:

|     |                         |
|-----|-------------------------|
| H22 | kinship of helper       |
| H23 | roster number of helper |

### Wave 2:

|      |                                 |
|------|---------------------------------|
| H14  | someone help you to get dressed |
| H15E | spouse helps                    |
| H15F | additional person helps         |
| H16E | spouse helps                    |
| H16F | additional person helps         |
| H17E | spouse helps                    |
| H17F | additional person helps         |
| H18E | spouse helps                    |
| H18F | additional person helps         |

|                |   |
|----------------|---|
| H19E           | spouse helps  |
| H19F           | additional person helps                                 |
| Wave 2 Helper: |   |
| H22            | relationship  |
| H23            | registration number                                     |
| Wave 3:        |   |
| H14_12         | Someone help you to get dressed                         |
| H15D_12        | Someone help you walk across room                       |
| H16D_12        | Someone help you to bathe or shower                     |
| H17D_12        | Does someone help you eat your food                     |
| H18D_12        | Does someone help you get into or out of bed            |
| H19D_12        | Does someone help you use toilet, get on off            |
| H22_1_12       | Relationship with helper for ADLs                       |
| H22_2_12       | Relationship with helper for ADLs                       |
| H22_3_12       | Relationship with helper for ADLs                       |
| H22_4_12       | Relationship with helper for ADLs                       |
| H22_5_12       | Relationship with helper for ADLs                       |
| H22_6_12       | Relationship with helper for ADLs                       |
| H22_7_12       | Relationship with helper for ADLs                       |
| H22_8_12       | Relationship with helper for ADLs                       |
| H23_1_12       | Registration number of helper for ADLs                  |
| H23_2_12       | Registration number of helper for ADLs                  |
| H23_3_12       | Registration number of helper for ADLs                  |
| H23_4_12       | Registration number of helper for ADLs                  |
| H23_5_12       | Registration number of helper for ADLs                  |
| H23_6_12       | Registration number of helper for ADLs                  |
| H23_7_12       | Registration number of helper for ADLs                  |
| H23_8_12       | Registration number of helper for ADLs                  |
| Wave 4:        |   |
| H14_15         | Does someone help respondent to get dressed             |
| H15D_15        | Does someone help respondent walking across a room      |
| H16D_15        | Does someone help respondent bathing or showering       |
| H17D_15        | Does someone help respondent eating                     |
| H18D_15        | Does someone help respondent getting in or out of bed   |
| H19D_15        | Does someone help respondent using the toilet           |
| H22_1_15       | Respondent's relationship with person helping with ADLs |
| H22_2_15       | Respondent's relationship with person helping with ADLs |
| H22_3_15       | Respondent's relationship with person helping with ADLs |
| H22_4_15       | Respondent's relationship with person helping with ADLs |
| H22_5_15       | Respondent's relationship with person helping with ADLs |
| H22_6_15       | Respondent's relationship with person helping with ADLs |
| H22_7_15       | Respondent's relationship with person helping with ADLs |
| H22_8_15       | Respondent's relationship with person helping with ADLs |
| H23_1_15       | Registration number of person helping with ADLs         |
| H23_2_15       | Registration number of person helping with ADLs         |
| H23_3_15       | Registration number of person helping with ADLs         |
| H23_4_15       | Registration number of person helping with ADLs         |
| H23_5_15       | Registration number of person helping with ADLs         |
| H23_6_15       | Registration number of person helping with ADLs         |
| H23_7_15       | Registration number of person helping with ADLs         |
| H23_8_15       | Registration number of person helping with ADLs         |
| Wave 5:        |   |
| H14_18         | Does someone help R to get dressed                      |
| H15D_18        | Does someone help R walking across a room               |
| H16D_18        | Does someone help R bathing or showering                |
| H17D_18        | Does someone help R eating                              |
| H18D_18        | Does someone help R getting in or out of bed            |
| H19D_18        | Does someone help R using the toilet                    |
| H22_1_18       | R's relationship with person helping with ADLs          |
| H22_2_18       | R's relationship with person helping with ADLs          |
| H22_3_18       | R's relationship with person helping with ADLs          |
| H23_1_18       | Registration number of person helping with ADLs         |
| H23_2_18       | Registration number of person helping with ADLs         |
| H23_3_18       | Registration number of person helping with ADLs         |

|   |
|---|
| <b>Activities of Daily Living: Receives Informal Care from Spouse</b> |
|---|

| Wave | Variable      | Label   | Type  |
|------|---------------|---|-------|
| 1    | R1RASCARE     | r1rascare: w1 R receives informal care from spouse for ADLs | Categ |
| 2    | R2RASCARE     | r2rascare: w2 R receives informal care from spouse for ADLs | Categ |
| 3    | R3RASCARE     | r3rascare: w3 R receives informal care from spouse for ADLs | Categ |
| 4    | R4RASCARE     | r4rascare: w4 R receives informal care from spouse for ADLs | Categ |
| 5    | R5RASCARE     | r5rascare: w5 R receives informal care from spouse for ADLs | Categ |
|      |               |   |       |
| 1    | S1RASCARE     | s1rascare: w1 S receives informal care from spouse for ADLs | Categ |
| 2    | S2RASCARE     | s2rascare: w2 S receives informal care from spouse for ADLs | Categ |
| 3    | S3RASCARE     | s3rascare: w3 S receives informal care from spouse for ADLs | Categ |
| 4    | S4RASCARE     | s4rascare: w4 S receives informal care from spouse for ADLs | Categ |
| 5    | S5RASCARE     | s5rascare: w5 S receives informal care from spouse for ADLs | Categ |
|      |               |   |       |
| 2    | R2RASCAREDPM  | r2rascaredpm: w2 days/month spouse helps R with ADLs        | Cont  |
| 3    | R3RASCAREDPM  | r3rascaredpm: w3 days/month spouse helps R with ADLs        | Cont  |
| 4    | R4RASCAREDPM  | r4rascaredpm: w4 days/month spouse helps R with ADLs        | Cont  |
| 5    | R5RASCAREDPM  | r5rascaredpm: w5 days/month spouse helps R with ADLs        | Cont  |
|      |               |   |       |
| 2    | S2RASCAREDPM  | s2rascaredpm: w2 days/month spouse helps S with ADLs        | Cont  |
| 3    | S3RASCAREDPM  | s3rascaredpm: w3 days/month spouse helps S with ADLs        | Cont  |
| 4    | S4RASCAREDPM  | s4rascaredpm: w4 days/month spouse helps S with ADLs        | Cont  |
| 5    | S5RASCAREDPM  | s5rascaredpm: w5 days/month spouse helps S with ADLs        | Cont  |
|      |               |   |       |
| 2    | R2RASCAREDPMM | r2rascaredpmm: w2 R # spouse missing days of help for ADLs  | Cont  |
| 3    | R3RASCAREDPMM | r3rascaredpmm: w3 R # spouse missing days of help for ADLs  | Cont  |
| 4    | R4RASCAREDPMM | r4rascaredpmm: w4 R # spouse missing days of help for ADLs  | Cont  |
| 5    | R5RASCAREDPMM | r5rascaredpmm: w5 R # spouse missing days of help for ADLs  | Cont  |
|      |               |   |       |
| 2    | S2RASCAREDPMM | s2rascaredpmm: w2 S # spouse missing days of help for ADLs  | Cont  |
| 3    | S3RASCAREDPMM | s3rascaredpmm: w3 S # spouse missing days of help for ADLs  | Cont  |
| 4    | S4RASCAREDPMM | s4rascaredpmm: w4 S # spouse missing days of help for ADLs  | Cont  |
| 5    | S5RASCAREDPMM | s5rascaredpmm: w5 S # spouse missing days of help for ADLs  | Cont  |
|      |               |   |       |
| 2    | R2RASCAREHR   | r2rascarehr: w2 hours/day spouse helps R with ADLs          | Cont  |
| 3    | R3RASCAREHR   | r3rascarehr: w3 hours/day spouse helps R with ADLs          | Cont  |
| 4    | R4RASCAREHR   | r4rascarehr: w4 hours/day spouse helps R with ADLs          | Cont  |
| 5    | R5RASCAREHR   | r5rascarehr: w5 hours/day spouse helps R with ADLs          | Cont  |
|      |               |   |       |
| 2    | S2RASCAREHR   | s2rascarehr: w2 hours/day spouse helps S with ADLs          | Cont  |
| 3    | S3RASCAREHR   | s3rascarehr: w3 hours/day spouse helps S with ADLs          | Cont  |
| 4    | S4RASCAREHR   | s4rascarehr: w4 hours/day spouse helps S with ADLs          | Cont  |
| 5    | S5RASCAREHR   | s5rascarehr: w5 hours/day spouse helps S with ADLs          | Cont  |
|      |               |   |       |
| 2    | R2RASCAREHRM  | r2rascarehrm: w2 R # spouse missing hours of help for ADLs  | Cont  |
| 3    | R3RASCAREHRM  | r3rascarehrm: w3 R # spouse missing hours of help for ADLs  | Cont  |
| 4    | R4RASCAREHRM  | r4rascarehrm: w4 R # spouse missing hours of help for ADLs  | Cont  |
| 5    | R5RASCAREHRM  | r5rascarehrm: w5 R # spouse missing hours of help for ADLs  | Cont  |
|      |               |   |       |
| 2    | S2RASCAREHRM  | s2rascarehrm: w2 S # spouse missing hours of help for ADLs  | Cont  |
| 3    | S3RASCAREHRM  | s3rascarehrm: w3 S # spouse missing hours of help for ADLs  | Cont  |
| 4    | S4RASCAREHRM  | s4rascarehrm: w4 S # spouse missing hours of help for ADLs  | Cont  |
| 5    | S5RASCAREHRM  | s5rascarehrm: w5 S # spouse missing hours of help for ADLs  | Cont  |

### Descriptive Statistics

| Variable  | N   | Mean | Std Dev | Minimum | Maximum |
|-----------|-----|------|---------|---------|---------|
| R1RASCARE | 780 | 0.45 | 0.50    | 0.00    | 1.00    |
| R2RASCARE | 793 | 0.34 | 0.48    | 0.00    | 1.00    |

|               |      |       |       |      |       |
|---------------|------|-------|-------|------|-------|
| R3RASCARE     | 1172 | 0.25  | 0.43  | 0.00 | 1.00  |
| R4RASCARE     | 1297 | 0.25  | 0.43  | 0.00 | 1.00  |
| R5RASCARE     | 1380 | 0.17  | 0.38  | 0.00 | 1.00  |
| S1RASCARE     | 456  | 0.75  | 0.43  | 0.00 | 1.00  |
| S2RASCARE     | 461  | 0.59  | 0.49  | 0.00 | 1.00  |
| S3RASCARE     | 575  | 0.50  | 0.50  | 0.00 | 1.00  |
| S4RASCARE     | 638  | 0.50  | 0.50  | 0.00 | 1.00  |
| S5RASCARE     | 572  | 0.33  | 0.47  | 0.00 | 1.00  |
| R2RASCAREDPM  | 793  | 8.60  | 13.16 | 0.00 | 30.00 |
| R3RASCAREDPM  | 1172 | 5.89  | 11.49 | 0.00 | 30.00 |
| R4RASCAREDPM  | 1295 | 5.22  | 10.80 | 0.00 | 30.00 |
| R5RASCAREDPM  | 1362 | 4.10  | 10.10 | 0.00 | 30.00 |
| S2RASCAREDPM  | 461  | 14.73 | 14.36 | 0.00 | 30.00 |
| S3RASCAREDPM  | 575  | 11.76 | 13.96 | 0.00 | 30.00 |
| S4RASCAREDPM  | 636  | 10.32 | 13.34 | 0.00 | 30.00 |
| S5RASCAREDPM  | 556  | 7.98  | 13.01 | 0.00 | 30.00 |
| R2RASCAREDPMM | 793  | 0.00  | 0.00  | 0.00 | 0.00  |
| R3RASCAREDPMM | 1172 | 0.00  | 0.00  | 0.00 | 0.00  |
| R4RASCAREDPMM | 1297 | 0.00  | 0.04  | 0.00 | 1.00  |
| R5RASCAREDPMM | 1380 | 0.01  | 0.11  | 0.00 | 1.00  |
| S2RASCAREDPMM | 461  | 0.00  | 0.00  | 0.00 | 0.00  |
| S3RASCAREDPMM | 575  | 0.00  | 0.00  | 0.00 | 0.00  |
| S4RASCAREDPMM | 638  | 0.00  | 0.06  | 0.00 | 1.00  |
| S5RASCAREDPMM | 572  | 0.03  | 0.17  | 0.00 | 1.00  |
| R2RASCAREHR   | 791  | 2.08  | 4.98  | 0.00 | 24.00 |
| R3RASCAREHR   | 1170 | 2.67  | 6.73  | 0.00 | 24.00 |
| R4RASCAREHR   | 1295 | 1.51  | 4.01  | 0.00 | 24.00 |
| R5RASCAREHR   | 1360 | 1.21  | 4.31  | 0.00 | 24.00 |
| S2RASCAREHR   | 459  | 3.58  | 6.12  | 0.00 | 24.00 |
| S3RASCAREHR   | 573  | 5.36  | 8.77  | 0.00 | 24.00 |
| S4RASCAREHR   | 636  | 2.97  | 5.21  | 0.00 | 24.00 |
| S5RASCAREHR   | 553  | 2.61  | 6.23  | 0.00 | 24.00 |
| R2RASCAREHRM  | 793  | 0.00  | 0.05  | 0.00 | 1.00  |
| R3RASCAREHRM  | 1172 | 0.00  | 0.04  | 0.00 | 1.00  |
| R4RASCAREHRM  | 1297 | 0.00  | 0.04  | 0.00 | 1.00  |
| R5RASCAREHRM  | 1380 | 0.01  | 0.12  | 0.00 | 1.00  |
| S2RASCAREHRM  | 461  | 0.00  | 0.07  | 0.00 | 1.00  |
| S3RASCAREHRM  | 575  | 0.00  | 0.06  | 0.00 | 1.00  |
| S4RASCAREHRM  | 638  | 0.00  | 0.06  | 0.00 | 1.00  |
| S5RASCAREHRM  | 572  | 0.03  | 0.18  | 0.00 | 1.00  |

Categorical Variable Codes

|                     |           |           |           |           |           |
|---------------------|-----------|-----------|-----------|-----------|-----------|
| Value-----          | R1RASCARE | R2RASCARE | R3RASCARE | R4RASCARE | R5RASCARE |
| .d:DK               | 1         |           | 1         | 6         | 2         |
| .h:no help received | 873       | 737       | 1785      | 1715      | 1654      |
| .m:Missing          | 40        | 30        |           | 40        | 18        |
| .r:Refuse           | 2         |           | 1         | 1         | 82        |
| .x:no difficulty    | 13490     | 12144     | 12764     | 11720     | 13978     |
| 0.No                | 432       | 521       | 878       | 971       | 1143      |
| 1.Yes               | 348       | 272       | 294       | 326       | 237       |
| Value-----          | S1RASCARE | S2RASCARE | S3RASCARE | S4RASCARE | S5RASCARE |
| .d:DK               |           |           | 1         | 5         |           |
| .h:no help received | 524       | 408       | 1107      | 1012      | 724       |
| .m:Missing          | 14        | 8         |           | 10        | 3         |

|                  |  |      |      |      |      |      |
|------------------|--|------|------|------|------|------|
| .r:Refuse        |  | 1    |      |      |      | 55   |
| .u:Unmar         |  | 4205 | 4009 | 4782 | 4847 | 5227 |
| .v:SP NR         |  | 333  | 131  | 349  | 280  | 501  |
| .x:no difficulty |  | 9653 | 8687 | 8909 | 7987 | 6107 |
| 0.No             |  | 112  | 190  | 288  | 321  | 386  |
| 1.Yes            |  | 344  | 271  | 287  | 317  | 186  |

## How Constructed

The following variables indicate whether the respondent's spouse helps the respondent with any ADL needs. The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. If the respondent reports having difficulty with an ADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with ADLs. The information used to derive these variables is taken from the help files in Waves 1 and 2 and from the individual files in Waves 3 and forward. For each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

The following variables are coded as special missing value .x if the respondent reports no difficulty with any ADL, and are coded as special missing value .h if the respondent reports difficulty with an ADL but does not receive any help. Don't know, refused, and other missing responses are assigned special missing values .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwRASCARE, RwRASCAREDPM, RwRASCAREDPMM, RwRASCAREHR, and RwRASCAREHRM include help from the respondent's spouse.

RwRASCARE indicates whether the respondent's spouse helps the respondent with any ADL needs. RwRASCARE is coded as 0 if the respondent receives no assistance from their spouse; and is coded as 1 if the respondent does receive help from their spouse.

RwRASCAREDPM indicates the number of days in the last month the respondent's spouse helped the respondent with ADL needs. If the respondent reports receiving help every day from their spouse, then a value of 30 is assumed. RwRASCAREDPM is assigned a value of 0 if the respondent did not receive help from their spouse. RwRASCAREDPMM indicates whether no value of days was reported for their spouse helper and so was not accounted for in RwRASCAREDPM. RwRASCAREDPMM is assigned special missing value .m if the respondent was not helped by their spouse. RwRASCAREDPM and RwRASCAREDPMM are not available in wave 1.

RwRASCAREHR indicates the number of hours per day the respondent's spouse helps the respondent with any ADL needs on the days that the respondent receives help. Respondents are asked, on days their spouse helps with a particular ADL need, how many hours per day their spouse helps. If the respondent reports less than an hour for their spouse, then a 1 is assumed. RwRASCAREHR is assigned a value of 0 if the respondent did not receive help from their spouse. RwRASCAREHRM indicates whether no value of hours was reported for their spouse helper and so was not accounted for in RwRASCAREHR. RwRASCAREHRM is assigned special missing value .m if the respondent was not helped by their spouse. RwRASCAREHR and RwRASCAREHRM are not available in wave 1.

SwRASCARE, SwRASCAREDPM, and SwRASCAREHR indicate whether and the frequency with which the respondent's current wave's spouse receives help from the respondent, and their values are taken from RwRASCARE, RwRASCAREDPM, and RwRASCAREHR. SwRASCAREDPMM and SwRASCAREHRM indicate whether or not a value was reported for the number of days and hours the respondent's current spouse was helped by the respondent and are taken from RwRASCAREDPMM and RwRASCAREHRM. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

The respondent is asked the number of days per month and hours per day the respondent receives help from their spouse starting in Wave 2.

Respondents are allowed to mention up to 12 caregivers in Waves 1 and 2, up to 8 caregivers in Waves 3 and 4, and up to 3 caregivers in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible. These variables in the Harmonized HRS include help provided by the respondent's spouse or former spouse, whereas these variables only include help provided by the respondent's spouse in the Harmonized MHAS.

RwRASCAREDPW in the Harmonized HRS indicates the days per week the respondent received help, while RwRASCAREDPM in the Harmonized MHAS indicates the days per month the respondent received help. As such, adjustment must be made before comparison of these variables.

The HRS asks for up to 7 relationships of people who help with ADLs (dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet). The MHAS, in contrast, asks for the relationships of a varying number of people across waves who help with ADLs.

## MHAS Variables Used

### Wave 1:

|       |                                       |
|-------|---------------------------------------|
| H14   | help dressing                         |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H19_3 | spouse helps using toilet             |
| H19_4 | other helps using toilet              |

### Wave 1 Helper:

|     |                         |
|-----|-------------------------|
| H22 | kinship of helper       |
| H23 | roster number of helper |
| H24 | days of help            |
| H25 | hours of help           |

### Wave 2:

|      |                                 |
|------|---------------------------------|
| H14  | someone help you to get dressed |
| H15E | spouse helps                    |
| H15F | additional person helps         |
| H16E | spouse helps                    |
| H16F | additional person helps         |
| H17E | spouse helps                    |
| H17F | additional person helps         |
| H18E | spouse helps                    |
| H18F | additional person helps         |
| H19E | spouse helps                    |
| H19F | additional person helps         |

### Wave 2 Helper:

|     |   |
|-----|---|
| H22 | relationship                            |
| H23 | registration number                     |
| H24 | number of days (name) helped last month |
| H25 | number of hours during those days       |

### Wave 3:

|         |                                     |
|---------|-------------------------------------|
| H14_12  | Someone help you to get dressed     |
| H15D_12 | Someone help you walk across room   |
| H16D_12 | Someone help you to bathe or shower |



|          |   |
|----------|---|
| H17D_12  | Does someone help you eat your food             |
| H18D_12  | Does someone help you get into or out of bed    |
| H19D_12  | Does someone help you use toilet, get on off    |
| H22_1_12 | Relationship with helper for ADLs               |
| H22_2_12 | Relationship with helper for ADLs               |
| H22_3_12 | Relationship with helper for ADLs               |
| H22_4_12 | Relationship with helper for ADLs               |
| H22_5_12 | Relationship with helper for ADLs               |
| H22_6_12 | Relationship with helper for ADLs               |
| H22_7_12 | Relationship with helper for ADLs               |
| H22_8_12 | Relationship with helper for ADLs               |
| H23_1_12 | Registration number of helper for ADLs          |
| H23_2_12 | Registration number of helper for ADLs          |
| H23_3_12 | Registration number of helper for ADLs          |
| H23_4_12 | Registration number of helper for ADLs          |
| H23_5_12 | Registration number of helper for ADLs          |
| H23_6_12 | Registration number of helper for ADLs          |
| H23_7_12 | Registration number of helper for ADLs          |
| H23_8_12 | Registration number of helper for ADLs          |
| H24_1_12 | Number of days (name) helped last month         |
| H24_2_12 | Number of days (name) helped last month         |
| H24_3_12 | Number of days (name) helped last month         |
| H24_4_12 | Number of days (name) helped last month         |
| H24_5_12 | Number of days (name) helped last month         |
| H24_6_12 | Number of days (name) helped last month         |
| H24_7_12 | Number of days (name) helped last month         |
| H24_8_12 | Number of days (name) helped last month         |
| H25_1_12 | Number of hours during those days (NAME) helped |
| H25_2_12 | Number of hours during those days (NAME) helped |
| H25_3_12 | Number of hours during those days (NAME) helped |
| H25_4_12 | Number of hours during those days (NAME) helped |
| H25_5_12 | Number of hours during those days (NAME) helped |
| H25_6_12 | Number of hours during those days (NAME) helped |
| H25_7_12 | Number of hours during those days (NAME) helped |
| H25_8_12 | Number of hours during those days (NAME) helped |

## Wave 4:

|          |   |
|----------|---|
| H14_15   | Does someone help respondent to get dressed             |
| H15D_15  | Does someone help respondent walking across a room      |
| H16D_15  | Does someone help respondent bathing or showering       |
| H17D_15  | Does someone help respondent eating                     |
| H18D_15  | Does someone help respondent getting in or out of bed   |
| H19D_15  | Does someone help respondent using the toilet           |
| H22_1_15 | Respondent's relationship with person helping with ADLs |
| H22_2_15 | Respondent's relationship with person helping with ADLs |
| H22_3_15 | Respondent's relationship with person helping with ADLs |
| H22_4_15 | Respondent's relationship with person helping with ADLs |
| H22_5_15 | Respondent's relationship with person helping with ADLs |
| H22_6_15 | Respondent's relationship with person helping with ADLs |
| H22_7_15 | Respondent's relationship with person helping with ADLs |
| H22_8_15 | Respondent's relationship with person helping with ADLs |
| H23_1_15 | Registration number of person helping with ADLs         |
| H23_2_15 | Registration number of person helping with ADLs         |
| H23_3_15 | Registration number of person helping with ADLs         |
| H23_4_15 | Registration number of person helping with ADLs         |
| H23_5_15 | Registration number of person helping with ADLs         |
| H23_6_15 | Registration number of person helping with ADLs         |
| H23_7_15 | Registration number of person helping with ADLs         |
| H23_8_15 | Registration number of person helping with ADLs         |
| H24_1_15 | Number of days the person helped during last month      |
| H24_2_15 | Number of days the person helped during last month      |
| H24_3_15 | Number of days the person helped during last month      |
| H24_4_15 | Number of days the person helped during last month      |
| H24_5_15 | Number of days the person helped during last month      |
| H24_6_15 | Number of days the person helped during last month      |

|          |   |
|----------|---|
| H24_7_15 | Number of days the person helped during last month      |
| H24_8_15 | Number of days the person helped during last month      |
| H25_1_15 | Number of hours during those days that the person helps |
| H25_2_15 | Number of hours during those days that the person helps |
| H25_3_15 | Number of hours during those days that the person helps |
| H25_4_15 | Number of hours during those days that the person helps |
| H25_5_15 | Number of hours during those days that the person helps |
| H25_6_15 | Number of hours during those days that the person helps |
| H25_7_15 | Number of hours during those days that the person helps |
| H25_8_15 | Number of hours during those days that the person helps |

## Wave 5:

|          |   |
|----------|---|
| H14_18   | Does someone help R to get dressed                      |
| H15D_18  | Does someone help R walking across a room               |
| H16D_18  | Does someone help R bathing or showering                |
| H17D_18  | Does someone help R eating                              |
| H18D_18  | Does someone help R getting in or out of bed            |
| H19D_18  | Does someone help R using the toilet                    |
| H22_1_18 | R's relationship with person helping with ADLs          |
| H22_2_18 | R's relationship with person helping with ADLs          |
| H22_3_18 | R's relationship with person helping with ADLs          |
| H23_1_18 | Registration number of person helping with ADLs         |
| H23_2_18 | Registration number of person helping with ADLs         |
| H23_3_18 | Registration number of person helping with ADLs         |
| H24_1_18 | Number of days the person helped during last month      |
| H24_2_18 | Number of days the person helped during last month      |
| H24_3_18 | Number of days the person helped during last month      |
| H25_1_18 | Number of hours during those days that the person helps |
| H25_2_18 | Number of hours during those days that the person helps |
| H25_3_18 | Number of hours during those days that the person helps |

### Activities of Daily Living: Receives Informal Care from Children or Grandchildren

| Wave | Variable      | Label  | Type  |
|------|---------------|--|-------|
| 1    | R1RACCARE     | r1raccare: w1 R receives informal care from kids/grandkids f | Categ |
| 2    | R2RACCARE     | r2raccare: w2 R receives informal care from kids/grandkids f | Categ |
| 3    | R3RACCARE     | r3raccare: w3 R receives informal care from kids/grandkids f | Categ |
| 4    | R4RACCARE     | r4raccare: w4 R receives informal care from kids/grandkids f | Categ |
| 5    | R5RACCARE     | r5raccare: w5 R receives informal care from kids/grandkids f | Categ |
| 1    | S1RACCARE     | s1raccare: w1 S receives informal care from kids/grandkids f | Categ |
| 2    | S2RACCARE     | s2raccare: w2 S receives informal care from kids/grandkids f | Categ |
| 3    | S3RACCARE     | s3raccare: w3 S receives informal care from kids/grandkids f | Categ |
| 4    | S4RACCARE     | s4raccare: w4 S receives informal care from kids/grandkids f | Categ |
| 5    | S5RACCARE     | s5raccare: w5 S receives informal care from kids/grandkids f | Categ |
| 1    | R1RACCAREN    | r1raccaren: w1 # kids/grandkids who help R with ADLs         | Cont  |
| 2    | R2RACCAREN    | r2raccaren: w2 # kids/grandkids who help R with ADLs         | Cont  |
| 3    | R3RACCAREN    | r3raccaren: w3 # kids/grandkids who help R with ADLs         | Cont  |
| 4    | R4RACCAREN    | r4raccaren: w4 # kids/grandkids who help R with ADLs         | Cont  |
| 5    | R5RACCAREN    | r5raccaren: w5 # kids/grandkids who help R with ADLs         | Cont  |
| 1    | S1RACCAREN    | s1raccaren: w1 # kids/grandkids who help S with ADLs         | Cont  |
| 2    | S2RACCAREN    | s2raccaren: w2 # kids/grandkids who help S with ADLs         | Cont  |
| 3    | S3RACCAREN    | s3raccaren: w3 # kids/grandkids who help S with ADLs         | Cont  |
| 4    | S4RACCAREN    | s4raccaren: w4 # kids/grandkids who help S with ADLs         | Cont  |
| 5    | S5RACCAREN    | s5raccaren: w5 # kids/grandkids who help S with ADLs         | Cont  |
| 1    | R1RACCAREDPM  | r1raccaredpm: w1 days/month kids/grandkids help R with ADLs  | Cont  |
| 2    | R2RACCAREDPM  | r2raccaredpm: w2 days/month kids/grandkids help R with ADLs  | Cont  |
| 3    | R3RACCAREDPM  | r3raccaredpm: w3 days/month kids/grandkids help R with ADLs  | Cont  |
| 4    | R4RACCAREDPM  | r4raccaredpm: w4 days/month kids/grandkids help R with ADLs  | Cont  |
| 5    | R5RACCAREDPM  | r5raccaredpm: w5 days/month kids/grandkids help R with ADLs  | Cont  |
| 1    | S1RACCAREDPM  | s1raccaredpm: w1 days/month kids/grandkids help S with ADLs  | Cont  |
| 2    | S2RACCAREDPM  | s2raccaredpm: w2 days/month kids/grandkids help S with ADLs  | Cont  |
| 3    | S3RACCAREDPM  | s3raccaredpm: w3 days/month kids/grandkids help S with ADLs  | Cont  |
| 4    | S4RACCAREDPM  | s4raccaredpm: w4 days/month kids/grandkids help S with ADLs  | Cont  |
| 5    | S5RACCAREDPM  | s5raccaredpm: w5 days/month kids/grandkids help S with ADLs  | Cont  |
| 1    | R1RACCAREDPMM | r1raccaredpmm: w1 R # kids/grandkids missing days of help fo | Cont  |
| 2    | R2RACCAREDPMM | r2raccaredpmm: w2 R # kids/grandkids missing days of help fo | Cont  |
| 3    | R3RACCAREDPMM | r3raccaredpmm: w3 R # kids/grandkids missing days of help fo | Cont  |
| 4    | R4RACCAREDPMM | r4raccaredpmm: w4 R # kids/grandkids missing days of help fo | Cont  |
| 5    | R5RACCAREDPMM | r5raccaredpmm: w5 R # kids/grandkids missing days of help fo | Cont  |
| 1    | S1RACCAREDPMM | s1raccaredpmm: w1 S # kids/grandkids missing days of help fo | Cont  |
| 2    | S2RACCAREDPMM | s2raccaredpmm: w2 S # kids/grandkids missing days of help fo | Cont  |
| 3    | S3RACCAREDPMM | s3raccaredpmm: w3 S # kids/grandkids missing days of help fo | Cont  |
| 4    | S4RACCAREDPMM | s4raccaredpmm: w4 S # kids/grandkids missing days of help fo | Cont  |
| 5    | S5RACCAREDPMM | s5raccaredpmm: w5 S # kids/grandkids missing days of help fo | Cont  |
| 1    | R1RACCAREHR   | r1raccarehr: w1 hours/day kids/grandkids help R with ADLs    | Cont  |
| 2    | R2RACCAREHR   | r2raccarehr: w2 hours/day kids/grandkids help R with ADLs    | Cont  |
| 3    | R3RACCAREHR   | r3raccarehr: w3 hours/day kids/grandkids help R with ADLs    | Cont  |
| 4    | R4RACCAREHR   | r4raccarehr: w4 hours/day kids/grandkids help R with ADLs    | Cont  |
| 5    | R5RACCAREHR   | r5raccarehr: w5 hours/day kids/grandkids help R with ADLs    | Cont  |
| 1    | S1RACCAREHR   | s1raccarehr: w1 hours/day kids/grandkids help S with ADLs    | Cont  |
| 2    | S2RACCAREHR   | s2raccarehr: w2 hours/day kids/grandkids help S with ADLs    | Cont  |
| 3    | S3RACCAREHR   | s3raccarehr: w3 hours/day kids/grandkids help S with ADLs    | Cont  |
| 4    | S4RACCAREHR   | s4raccarehr: w4 hours/day kids/grandkids help S with ADLs    | Cont  |
| 5    | S5RACCAREHR   | s5raccarehr: w5 hours/day kids/grandkids help S with ADLs    | Cont  |

|   |              |                  |                    |                          |      |
|---|--------------|------------------|--------------------|--------------------------|------|
| 1 | R1RACCAREHRM | r1raccarehrm: w1 | R # kids/grandkids | missing hours of help fo | Cont |
| 2 | R2RACCAREHRM | r2raccarehrm: w2 | R # kids/grandkids | missing hours of help fo | Cont |
| 3 | R3RACCAREHRM | r3raccarehrm: w3 | R # kids/grandkids | missing hours of help fo | Cont |
| 4 | R4RACCAREHRM | r4raccarehrm: w4 | R # kids/grandkids | missing hours of help fo | Cont |
| 5 | R5RACCAREHRM | r5raccarehrm: w5 | R # kids/grandkids | missing hours of help fo | Cont |
|   |              |                  |                    |                          |      |
| 1 | S1RACCAREHRM | s1raccarehrm: w1 | S # kids/grandkids | missing hours of help fo | Cont |
| 2 | S2RACCAREHRM | s2raccarehrm: w2 | S # kids/grandkids | missing hours of help fo | Cont |
| 3 | S3RACCAREHRM | s3raccarehrm: w3 | S # kids/grandkids | missing hours of help fo | Cont |
| 4 | S4RACCAREHRM | s4raccarehrm: w4 | S # kids/grandkids | missing hours of help fo | Cont |
| 5 | S5RACCAREHRM | s5raccarehrm: w5 | S # kids/grandkids | missing hours of help fo | Cont |

## Descriptive Statistics

| Variable      | N    | Mean  | Std Dev | Minimum | Maximum |
|---------------|------|-------|---------|---------|---------|
|               |      |       |         |         |         |
| R1RACCARE     | 780  | 0.55  | 0.50    | 0.00    | 1.00    |
| R2RACCARE     | 793  | 0.54  | 0.50    | 0.00    | 1.00    |
| R3RACCARE     | 1172 | 0.58  | 0.49    | 0.00    | 1.00    |
| R4RACCARE     | 1297 | 0.56  | 0.50    | 0.00    | 1.00    |
| R5RACCARE     | 1380 | 0.61  | 0.49    | 0.00    | 1.00    |
|               |      |       |         |         |         |
| S1RACCARE     | 456  | 0.43  | 0.50    | 0.00    | 1.00    |
| S2RACCARE     | 461  | 0.42  | 0.49    | 0.00    | 1.00    |
| S3RACCARE     | 575  | 0.39  | 0.49    | 0.00    | 1.00    |
| S4RACCARE     | 638  | 0.39  | 0.49    | 0.00    | 1.00    |
| S5RACCARE     | 572  | 0.49  | 0.50    | 0.00    | 1.00    |
|               |      |       |         |         |         |
| R1RACCAREN    | 780  | 0.89  | 1.16    | 0.00    | 12.00   |
| R2RACCAREN    | 793  | 0.87  | 1.12    | 0.00    | 9.00    |
| R3RACCAREN    | 1172 | 0.80  | 0.90    | 0.00    | 8.00    |
| R4RACCAREN    | 1297 | 0.79  | 0.93    | 0.00    | 8.00    |
| R5RACCAREN    | 1380 | 1.02  | 1.03    | 0.00    | 3.00    |
|               |      |       |         |         |         |
| S1RACCAREN    | 456  | 0.70  | 1.04    | 0.00    | 8.00    |
| S2RACCAREN    | 461  | 0.69  | 1.08    | 0.00    | 7.00    |
| S3RACCAREN    | 575  | 0.54  | 0.85    | 0.00    | 6.00    |
| S4RACCAREN    | 638  | 0.53  | 0.87    | 0.00    | 8.00    |
| S5RACCAREN    | 572  | 0.76  | 0.94    | 0.00    | 3.00    |
|               |      |       |         |         |         |
| R1RACCAREDPM  | 780  | 21.95 | 31.72   | 0.00    | 360.00  |
| R2RACCAREDPM  | 793  | 20.03 | 27.12   | 0.00    | 195.00  |
| R3RACCAREDPM  | 1168 | 17.83 | 22.55   | 0.00    | 178.00  |
| R4RACCAREDPM  | 1295 | 16.21 | 21.06   | 0.00    | 210.00  |
| R5RACCAREDPM  | 1355 | 24.15 | 27.55   | 0.00    | 90.00   |
|               |      |       |         |         |         |
| S1RACCAREDPM  | 456  | 16.78 | 26.35   | 0.00    | 150.00  |
| S2RACCAREDPM  | 461  | 15.52 | 26.09   | 0.00    | 195.00  |
| S3RACCAREDPM  | 572  | 10.81 | 19.30   | 0.00    | 150.00  |
| S4RACCAREDPM  | 637  | 10.16 | 16.88   | 0.00    | 92.00   |
| S5RACCAREDPM  | 565  | 17.46 | 25.07   | 0.00    | 90.00   |
|               |      |       |         |         |         |
| R1RACCAREDPMM | 780  | 0.00  | 0.00    | 0.00    | 0.00    |
| R2RACCAREDPMM | 793  | 0.00  | 0.00    | 0.00    | 0.00    |
| R3RACCAREDPMM | 1172 | 0.01  | 0.07    | 0.00    | 1.00    |
| R4RACCAREDPMM | 1297 | 0.01  | 0.08    | 0.00    | 2.00    |
| R5RACCAREDPMM | 1380 | 0.03  | 0.21    | 0.00    | 3.00    |
|               |      |       |         |         |         |
| S1RACCAREDPMM | 456  | 0.00  | 0.00    | 0.00    | 0.00    |
| S2RACCAREDPMM | 461  | 0.00  | 0.00    | 0.00    | 0.00    |
| S3RACCAREDPMM | 575  | 0.01  | 0.07    | 0.00    | 1.00    |
| S4RACCAREDPMM | 638  | 0.00  | 0.04    | 0.00    | 1.00    |
| S5RACCAREDPMM | 572  | 0.02  | 0.18    | 0.00    | 3.00    |

|              |      |      |       |      |        |
|--------------|------|------|-------|------|--------|
| R1RACCAREHR  | 780  | 4.79 | 8.23  | 0.00 | 80.00  |
| R2RACCAREHR  | 793  | 4.98 | 11.19 | 0.00 | 216.00 |
| R3RACCAREHR  | 1164 | 7.45 | 11.16 | 0.00 | 90.00  |
| R4RACCAREHR  | 1293 | 4.92 | 9.21  | 0.00 | 168.00 |
| R5RACCAREHR  | 1355 | 7.14 | 11.78 | 0.00 | 72.00  |
|              |      |      |       |      |        |
| S1RACCAREHR  | 456  | 3.36 | 7.39  | 0.00 | 80.00  |
| S2RACCAREHR  | 461  | 2.93 | 5.86  | 0.00 | 48.00  |
| S3RACCAREHR  | 570  | 4.16 | 9.37  | 0.00 | 90.00  |
| S4RACCAREHR  | 636  | 2.64 | 5.51  | 0.00 | 55.00  |
| S5RACCAREHR  | 565  | 4.55 | 8.84  | 0.00 | 72.00  |
|              |      |      |       |      |        |
| R1RACCAREHRM | 780  | 0.00 | 0.00  | 0.00 | 0.00   |
| R2RACCAREHRM | 793  | 0.00 | 0.00  | 0.00 | 0.00   |
| R3RACCAREHRM | 1172 | 0.01 | 0.13  | 0.00 | 3.00   |
| R4RACCAREHRM | 1297 | 0.01 | 0.14  | 0.00 | 4.00   |
| R5RACCAREHRM | 1380 | 0.04 | 0.24  | 0.00 | 3.00   |
|              |      |      |       |      |        |
| S1RACCAREHRM | 456  | 0.00 | 0.00  | 0.00 | 0.00   |
| S2RACCAREHRM | 461  | 0.00 | 0.00  | 0.00 | 0.00   |
| S3RACCAREHRM | 575  | 0.01 | 0.15  | 0.00 | 3.00   |
| S4RACCAREHRM | 638  | 0.00 | 0.06  | 0.00 | 1.00   |
| S5RACCAREHRM | 572  | 0.02 | 0.18  | 0.00 | 3.00   |

## Categorical Variable Codes

| Value-----          | R1RACCARE | R2RACCARE | R3RACCARE | R4RACCARE | R5RACCARE |
|---------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK               | 1         |           | 1         | 6         | 2         |
| .h:no help received | 873       | 737       | 1785      | 1715      | 1654      |
| .m:Missing          | 40        | 30        |           | 40        | 18        |
| .r:Refuse           | 2         |           | 1         | 1         | 82        |
| .x:no difficulty    | 13490     | 12144     | 12764     | 11720     | 13978     |
| 0.No                | 351       | 363       | 495       | 570       | 534       |
| 1.Yes               | 429       | 430       | 677       | 727       | 846       |

| Value-----          | S1RACCARE | S2RACCARE | S3RACCARE | S4RACCARE | S5RACCARE |
|---------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK               |           |           | 1         | 5         |           |
| .h:no help received | 524       | 408       | 1107      | 1012      | 724       |
| .m:Missing          | 14        | 8         |           | 10        | 3         |
| .r:Refuse           | 1         |           |           |           | 55        |
| .u:Unmar            | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR            | 333       | 131       | 349       | 280       | 501       |
| .x:no difficulty    | 9653      | 8687      | 8909      | 7987      | 6107      |
| 0.No                | 259       | 267       | 352       | 387       | 293       |
| 1.Yes               | 197       | 194       | 223       | 251       | 279       |

## How Constructed

The following variables indicate whether the respondent's children or grandchildren help the respondent with any ADL needs. The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. If the respondent reports having difficulty with an ADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with ADLs. The information used to derive these variables is taken from the help files in Waves 1 and 2 and from the individual files in Waves 3 and forward. For each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

The following variables are coded as special missing value .x if the respondent reports no difficulty with any ADL, and are coded as special missing value .h if the respondent reports difficulty with an ADL but does not receive any help. Don't know, refused, or other missing responses are assigned special missing values .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwRACCARE, RwRACCAREN, RwRACCAREDPM, RwRACCAREDPMM, RwRACCAREHR, and RwRACCAREHRM include help from a child, child-in-law, or grandchild.

RwRACCARE indicates whether any of the respondent's children or grandchildren help the respondent with ADL needs. RwRACCAREN indicates the number of the respondent's children or grandchildren who help the respondent with ADL needs. RwRACCARE is coded as 0 if none of the respondent's children or grandchildren help the respondent with ADLs; and is coded as 1 if at least one of the respondent's children or grandchildren help the respondent with ADLs.

RwRACCAREDPM indicates the number of total days per month the respondent's children or grandchildren help the respondent with ADL needs. If the respondent reports receiving help every day from that child or grandchild, then a value of 30 is assumed. RwRACCAREDPM is the sum of days per month for all children or grandchildren helpers, and so values can be over 30 days. RwRACCAREDPM is calculated as long as there is one non-missing value. RwRACCAREDPM is assigned a value of 0 if the respondent did not receive help from any children or grandchildren. RwRACCAREDPMM indicates the number of children or grandchildren who helped the respondent for whom no value of days was reported and was not accounted for in RwRACCAREDPM. RwRACCAREDPMM is assigned special missing value .m if the respondent was not helped by any children or grandchildren.

RwRACCAREHR indicates the number of hours per day the respondent's children or grandchildren help the respondent with ADL needs. Respondents are asked, on days their children or grandchildren help, how many hours per day that is. If the respondent reports less than an hour for that child or grandchild, then a 1 is assumed. RwRACCAREHR is the sum of hours per day for all children or grandchildren helpers, and so values can be over 24 hours. RwRACCAREHR is calculated as long as there is one non-missing value. RwRACCAREHR is assigned a value of 0 if the respondent did not receive help from any children or grandchildren. RwRACCAREHRM indicates the number of children or grandchildren who helped the respondent for whom no value of hours was reported and was not accounted for in RwRACCAREHR. RwRACCAREHRM is assigned special missing value .m if the respondent was not helped by any children or grandchildren.

SwRACCARE, SwRACCAREN, SwRACCAREDPM, and SwRACCAREHR indicate whether the respondent's current wave's spouse receives help from children or grandchildren, the number, and the frequency with which, and their values are taken from RwRACCARE, RwRACCAREN, RwRACCAREDPM, and RwRACCAREHR. SwRACCAREDPMM and SwRACCAREHRM indicate the number of children who helped the respondent's current spouse for whom a value was not reported for the number of days and hours and are taken from RwRACCAREDPMM and RwRACCAREHRM. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers in Waves 1 and 2, up to 8 caregivers in Waves 3 and 4, and up to 3 caregivers in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible.

RwRACCAREDPW in the Harmonized HRS indicates the days per week the respondent received help, while RwRACCAREDPM in the Harmonized MHAS indicates the days per month the respondent received help. As such, adjustment must be made before comparison of these variables.

The HRS asks for up to 7 relationships of people who help with ADLs (dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet). The MHAS, in contrast, asks for the relationships of a varying number of people across waves who help with ADLs.

**MHAS Variables Used****Wave 1:**

|       |                                       |
|-------|---------------------------------------|
| H14   | help dressing                         |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H19_3 | spouse helps using toilet             |
| H19_4 | other helps using toilet              |

**Wave 1 Helper:**

|     |                         |
|-----|-------------------------|
| H22 | kinship of helper       |
| H23 | roster number of helper |
| H24 | days of help            |
| H25 | hours of help           |

**Wave 2:**

|      |                                 |
|------|---------------------------------|
| H14  | someone help you to get dressed |
| H15E | spouse helps                    |
| H15F | additional person helps         |
| H16E | spouse helps                    |
| H16F | additional person helps         |
| H17E | spouse helps                    |
| H17F | additional person helps         |
| H18E | spouse helps                    |
| H18F | additional person helps         |
| H19E | spouse helps                    |
| H19F | additional person helps         |

**Wave 2 Helper:**

|     |   |
|-----|---|
| H22 | relationship                            |
| H23 | registration number                     |
| H24 | number of days (name) helped last month |
| H25 | number of hours during those days       |

**Wave 3:**

|          |  |
|----------|--|
| H14_12   | Someone help you to get dressed              |
| H15D_12  | Someone help you walk across room            |
| H16D_12  | Someone help you to bathe or shower          |
| H17D_12  | Does someone help you eat your food          |
| H18D_12  | Does someone help you get into or out of bed |
| H19D_12  | Does someone help you use toilet, get on off |
| H22_1_12 | Relationship with helper for ADLs            |
| H22_2_12 | Relationship with helper for ADLs            |
| H22_3_12 | Relationship with helper for ADLs            |
| H22_4_12 | Relationship with helper for ADLs            |
| H22_5_12 | Relationship with helper for ADLs            |
| H22_6_12 | Relationship with helper for ADLs            |
| H22_7_12 | Relationship with helper for ADLs            |
| H22_8_12 | Relationship with helper for ADLs            |
| H23_1_12 | Registration number of helper for ADLs       |
| H23_2_12 | Registration number of helper for ADLs       |
| H23_3_12 | Registration number of helper for ADLs       |
| H23_4_12 | Registration number of helper for ADLs       |
| H23_5_12 | Registration number of helper for ADLs       |
| H23_6_12 | Registration number of helper for ADLs       |
| H23_7_12 | Registration number of helper for ADLs       |
| H23_8_12 | Registration number of helper for ADLs       |
| H24_1_12 | Number of days (name) helped last month      |
| H24_2_12 | Number of days (name) helped last month      |
| H24_3_12 | Number of days (name) helped last month      |
| H24_4_12 | Number of days (name) helped last month      |
| H24_5_12 | Number of days (name) helped last month      |

|          |   |
|----------|---|
| H24_6_12 | Number of days (name) helped last month         |
| H24_7_12 | Number of days (name) helped last month         |
| H24_8_12 | Number of days (name) helped last month         |
| H25_1_12 | Number of hours during those days (NAME) helped |
| H25_2_12 | Number of hours during those days (NAME) helped |
| H25_3_12 | Number of hours during those days (NAME) helped |
| H25_4_12 | Number of hours during those days (NAME) helped |
| H25_5_12 | Number of hours during those days (NAME) helped |
| H25_6_12 | Number of hours during those days (NAME) helped |
| H25_7_12 | Number of hours during those days (NAME) helped |
| H25_8_12 | Number of hours during those days (NAME) helped |

## Wave 4:

|          |   |
|----------|---|
| H14_15   | Does someone help respondent to get dressed             |
| H15D_15  | Does someone help respondent walking across a room      |
| H16D_15  | Does someone help respondent bathing or showering       |
| H17D_15  | Does someone help respondent eating                     |
| H18D_15  | Does someone help respondent getting in or out of bed   |
| H19D_15  | Does someone help respondent using the toilet           |
| H22_1_15 | Respondent's relationship with person helping with ADLs |
| H22_2_15 | Respondent's relationship with person helping with ADLs |
| H22_3_15 | Respondent's relationship with person helping with ADLs |
| H22_4_15 | Respondent's relationship with person helping with ADLs |
| H22_5_15 | Respondent's relationship with person helping with ADLs |
| H22_6_15 | Respondent's relationship with person helping with ADLs |
| H22_7_15 | Respondent's relationship with person helping with ADLs |
| H22_8_15 | Respondent's relationship with person helping with ADLs |
| H23_1_15 | Registration number of person helping with ADLs         |
| H23_2_15 | Registration number of person helping with ADLs         |
| H23_3_15 | Registration number of person helping with ADLs         |
| H23_4_15 | Registration number of person helping with ADLs         |
| H23_5_15 | Registration number of person helping with ADLs         |
| H23_6_15 | Registration number of person helping with ADLs         |
| H23_7_15 | Registration number of person helping with ADLs         |
| H23_8_15 | Registration number of person helping with ADLs         |
| H24_1_15 | Number of days the person helped during last month      |
| H24_2_15 | Number of days the person helped during last month      |
| H24_3_15 | Number of days the person helped during last month      |
| H24_4_15 | Number of days the person helped during last month      |
| H24_5_15 | Number of days the person helped during last month      |
| H24_6_15 | Number of days the person helped during last month      |
| H24_7_15 | Number of days the person helped during last month      |
| H24_8_15 | Number of days the person helped during last month      |
| H25_1_15 | Number of hours during those days that the person helps |
| H25_2_15 | Number of hours during those days that the person helps |
| H25_3_15 | Number of hours during those days that the person helps |
| H25_4_15 | Number of hours during those days that the person helps |
| H25_5_15 | Number of hours during those days that the person helps |
| H25_6_15 | Number of hours during those days that the person helps |
| H25_7_15 | Number of hours during those days that the person helps |
| H25_8_15 | Number of hours during those days that the person helps |

## Wave 5:

|          |  |
|----------|--|
| H14_18   | Does someone help R to get dressed                 |
| H15D_18  | Does someone help R walking across a room          |
| H16D_18  | Does someone help R bathing or showering           |
| H17D_18  | Does someone help R eating                         |
| H18D_18  | Does someone help R getting in or out of bed       |
| H19D_18  | Does someone help R using the toilet               |
| H22_1_18 | R's relationship with person helping with ADLs     |
| H22_2_18 | R's relationship with person helping with ADLs     |
| H22_3_18 | R's relationship with person helping with ADLs     |
| H23_1_18 | Registration number of person helping with ADLs    |
| H23_2_18 | Registration number of person helping with ADLs    |
| H23_3_18 | Registration number of person helping with ADLs    |
| H24_1_18 | Number of days the person helped during last month |



|          |   |
|----------|---|
| H24_2_18 | Number of days the person helped during last month      |
| H24_3_18 | Number of days the person helped during last month      |
| H25_1_18 | Number of hours during those days that the person helpe |
| H25_2_18 | Number of hours during those days that the person helpe |
| H25_3_18 | Number of hours during those days that the person helpe |

|  |
|--|
| <b>Activities of Daily Living: Receives Informal Care from Relatives</b> |
|--|

| Wave | Variable      | Label  | Type  |
|------|---------------|--|-------|
| 1    | R1RARCARE     | r1rarcare: w1 R receives informal care from relatives for AD | Categ |
| 2    | R2RARCARE     | r2rarcare: w2 R receives informal care from relatives for AD | Categ |
| 3    | R3RARCARE     | r3rarcare: w3 R receives informal care from relatives for AD | Categ |
| 4    | R4RARCARE     | r4rarcare: w4 R receives informal care from relatives for AD | Categ |
| 5    | R5RARCARE     | r5rarcare: w5 R receives informal care from relatives for AD | Categ |
|      |               |  |       |
| 1    | S1RARCARE     | s1rarcare: w1 S receives informal care from relatives for AD | Categ |
| 2    | S2RARCARE     | s2rarcare: w2 S receives informal care from relatives for AD | Categ |
| 3    | S3RARCARE     | s3rarcare: w3 S receives informal care from relatives for AD | Categ |
| 4    | S4RARCARE     | s4rarcare: w4 S receives informal care from relatives for AD | Categ |
| 5    | S5RARCARE     | s5rarcare: w5 S receives informal care from relatives for AD | Categ |
|      |               |  |       |
| 1    | R1RARCAREN    | r1rarcaren: w1 # relatives who help R with ADLs              | Cont  |
| 2    | R2RARCAREN    | r2rarcaren: w2 # relatives who help R with ADLs              | Cont  |
| 3    | R3RARCAREN    | r3rarcaren: w3 # relatives who help R with ADLs              | Cont  |
| 4    | R4RARCAREN    | r4rarcaren: w4 # relatives who help R with ADLs              | Cont  |
| 5    | R5RARCAREN    | r5rarcaren: w5 # relatives who help R with ADLs              | Cont  |
|      |               |  |       |
| 1    | S1RARCAREN    | s1rarcaren: w1 # relatives who help S with ADLs              | Cont  |
| 2    | S2RARCAREN    | s2rarcaren: w2 # relatives who help S with ADLs              | Cont  |
| 3    | S3RARCAREN    | s3rarcaren: w3 # relatives who help S with ADLs              | Cont  |
| 4    | S4RARCAREN    | s4rarcaren: w4 # relatives who help S with ADLs              | Cont  |
| 5    | S5RARCAREN    | s5rarcaren: w5 # relatives who help S with ADLs              | Cont  |
|      |               |  |       |
| 1    | R1RARCAREDPM  | r1rarcaredpm: w1 days/month relatives help R with ADLs       | Cont  |
| 2    | R2RARCAREDPM  | r2rarcaredpm: w2 days/month relatives help R with ADLs       | Cont  |
| 3    | R3RARCAREDPM  | r3rarcaredpm: w3 days/month relatives help R with ADLs       | Cont  |
| 4    | R4RARCAREDPM  | r4rarcaredpm: w4 days/month relatives help R with ADLs       | Cont  |
| 5    | R5RARCAREDPM  | r5rarcaredpm: w5 days/month relatives help R with ADLs       | Cont  |
|      |               |  |       |
| 1    | S1RARCAREDPM  | s1rarcaredpm: w1 days/month relatives help S with ADLs       | Cont  |
| 2    | S2RARCAREDPM  | s2rarcaredpm: w2 days/month relatives help S with ADLs       | Cont  |
| 3    | S3RARCAREDPM  | s3rarcaredpm: w3 days/month relatives help S with ADLs       | Cont  |
| 4    | S4RARCAREDPM  | s4rarcaredpm: w4 days/month relatives help S with ADLs       | Cont  |
| 5    | S5RARCAREDPM  | s5rarcaredpm: w5 days/month relatives help S with ADLs       | Cont  |
|      |               |  |       |
| 1    | R1RARCAREDPMM | r1rarcaredpmm: w1 R # relatives missing days of help for ADL | Cont  |
| 2    | R2RARCAREDPMM | r2rarcaredpmm: w2 R # relatives missing days of help for ADL | Cont  |
| 3    | R3RARCAREDPMM | r3rarcaredpmm: w3 R # relatives missing days of help for ADL | Cont  |
| 4    | R4RARCAREDPMM | r4rarcaredpmm: w4 R # relatives missing days of help for ADL | Cont  |
| 5    | R5RARCAREDPMM | r5rarcaredpmm: w5 R # relatives missing days of help for ADL | Cont  |
|      |               |  |       |
| 1    | S1RARCAREDPMM | s1rarcaredpmm: w1 S # relatives missing days of help for ADL | Cont  |
| 2    | S2RARCAREDPMM | s2rarcaredpmm: w2 S # relatives missing days of help for ADL | Cont  |
| 3    | S3RARCAREDPMM | s3rarcaredpmm: w3 S # relatives missing days of help for ADL | Cont  |
| 4    | S4RARCAREDPMM | s4rarcaredpmm: w4 S # relatives missing days of help for ADL | Cont  |
| 5    | S5RARCAREDPMM | s5rarcaredpmm: w5 S # relatives missing days of help for ADL | Cont  |
|      |               |  |       |
| 1    | R1RARCAREHR   | r1rarcarehr: w1 hours/day relatives help R with ADLs         | Cont  |
| 2    | R2RARCAREHR   | r2rarcarehr: w2 hours/day relatives help R with ADLs         | Cont  |
| 3    | R3RARCAREHR   | r3rarcarehr: w3 hours/day relatives help R with ADLs         | Cont  |
| 4    | R4RARCAREHR   | r4rarcarehr: w4 hours/day relatives help R with ADLs         | Cont  |
| 5    | R5RARCAREHR   | r5rarcarehr: w5 hours/day relatives help R with ADLs         | Cont  |
|      |               |  |       |
| 1    | S1RARCAREHR   | s1rarcarehr: w1 hours/day relatives help S with ADLs         | Cont  |
| 2    | S2RARCAREHR   | s2rarcarehr: w2 hours/day relatives help S with ADLs         | Cont  |
| 3    | S3RARCAREHR   | s3rarcarehr: w3 hours/day relatives help S with ADLs         | Cont  |
| 4    | S4RARCAREHR   | s4rarcarehr: w4 hours/day relatives help S with ADLs         | Cont  |
| 5    | S5RARCAREHR   | s5rarcarehr: w5 hours/day relatives help S with ADLs         | Cont  |

|   |              |                  |     |           |         |       |    |      |     |     |      |
|---|--------------|------------------|-----|-----------|---------|-------|----|------|-----|-----|------|
| 1 | R1RARCAREHRM | r1rarcarehrm: w1 | R # | relatives | missing | hours | of | help | for | ADL | Cont |
| 2 | R2RARCAREHRM | r2rarcarehrm: w2 | R # | relatives | missing | hours | of | help | for | ADL | Cont |
| 3 | R3RARCAREHRM | r3rarcarehrm: w3 | R # | relatives | missing | hours | of | help | for | ADL | Cont |
| 4 | R4RARCAREHRM | r4rarcarehrm: w4 | R # | relatives | missing | hours | of | help | for | ADL | Cont |
| 5 | R5RARCAREHRM | r5rarcarehrm: w5 | R # | relatives | missing | hours | of | help | for | ADL | Cont |
|   |              |                  |     |           |         |       |    |      |     |     |      |
| 1 | S1RARCAREHRM | s1rarcarehrm: w1 | S # | relatives | missing | hours | of | help | for | ADL | Cont |
| 2 | S2RARCAREHRM | s2rarcarehrm: w2 | S # | relatives | missing | hours | of | help | for | ADL | Cont |
| 3 | S3RARCAREHRM | s3rarcarehrm: w3 | S # | relatives | missing | hours | of | help | for | ADL | Cont |
| 4 | S4RARCAREHRM | s4rarcarehrm: w4 | S # | relatives | missing | hours | of | help | for | ADL | Cont |
| 5 | S5RARCAREHRM | s5rarcarehrm: w5 | S # | relatives | missing | hours | of | help | for | ADL | Cont |

## Descriptive Statistics

| Variable      | N    | Mean | Std Dev | Minimum | Maximum |
|---------------|------|------|---------|---------|---------|
|               |      |      |         |         |         |
| R1RARCARE     | 780  | 0.05 | 0.22    | 0.00    | 1.00    |
| R2RARCARE     | 793  | 0.05 | 0.22    | 0.00    | 1.00    |
| R3RARCARE     | 1172 | 0.05 | 0.23    | 0.00    | 1.00    |
| R4RARCARE     | 1297 | 0.05 | 0.21    | 0.00    | 1.00    |
| R5RARCARE     | 1380 | 0.05 | 0.22    | 0.00    | 1.00    |
|               |      |      |         |         |         |
| S1RARCARE     | 456  | 0.02 | 0.15    | 0.00    | 1.00    |
| S2RARCARE     | 461  | 0.02 | 0.12    | 0.00    | 1.00    |
| S3RARCARE     | 575  | 0.02 | 0.13    | 0.00    | 1.00    |
| S4RARCARE     | 638  | 0.01 | 0.11    | 0.00    | 1.00    |
| S5RARCARE     | 572  | 0.01 | 0.08    | 0.00    | 1.00    |
|               |      |      |         |         |         |
| R1RARCAREN    | 780  | 0.06 | 0.30    | 0.00    | 3.00    |
| R2RARCAREN    | 793  | 0.08 | 0.42    | 0.00    | 8.00    |
| R3RARCAREN    | 1172 | 0.07 | 0.34    | 0.00    | 4.00    |
| R4RARCAREN    | 1297 | 0.06 | 0.36    | 0.00    | 8.00    |
| R5RARCAREN    | 1380 | 0.07 | 0.35    | 0.00    | 3.00    |
|               |      |      |         |         |         |
| S1RARCAREN    | 456  | 0.02 | 0.15    | 0.00    | 1.00    |
| S2RARCAREN    | 461  | 0.02 | 0.12    | 0.00    | 1.00    |
| S3RARCAREN    | 575  | 0.02 | 0.13    | 0.00    | 1.00    |
| S4RARCAREN    | 638  | 0.01 | 0.13    | 0.00    | 2.00    |
| S5RARCAREN    | 572  | 0.01 | 0.19    | 0.00    | 3.00    |
|               |      |      |         |         |         |
| R1RARCAREDPM  | 780  | 1.44 | 7.15    | 0.00    | 90.00   |
| R2RARCAREDPM  | 793  | 1.96 | 12.28   | 0.00    | 240.00  |
| R3RARCAREDPM  | 1171 | 1.53 | 7.45    | 0.00    | 90.00   |
| R4RARCAREDPM  | 1295 | 1.49 | 9.93    | 0.00    | 240.00  |
| R5RARCAREDPM  | 1377 | 1.54 | 8.92    | 0.00    | 90.00   |
|               |      |      |         |         |         |
| S1RARCAREDPM  | 456  | 0.57 | 4.00    | 0.00    | 30.00   |
| S2RARCAREDPM  | 461  | 0.33 | 2.91    | 0.00    | 30.00   |
| S3RARCAREDPM  | 575  | 0.48 | 3.66    | 0.00    | 30.00   |
| S4RARCAREDPM  | 638  | 0.34 | 3.47    | 0.00    | 60.00   |
| S5RARCAREDPM  | 572  | 0.23 | 3.97    | 0.00    | 90.00   |
|               |      |      |         |         |         |
| R1RARCAREDPMM | 780  | 0.00 | 0.00    | 0.00    | 0.00    |
| R2RARCAREDPMM | 793  | 0.00 | 0.00    | 0.00    | 0.00    |
| R3RARCAREDPMM | 1172 | 0.00 | 0.06    | 0.00    | 2.00    |
| R4RARCAREDPMM | 1297 | 0.00 | 0.04    | 0.00    | 1.00    |
| R5RARCAREDPMM | 1380 | 0.00 | 0.07    | 0.00    | 2.00    |
|               |      |      |         |         |         |
| S1RARCAREDPMM | 456  | 0.00 | 0.00    | 0.00    | 0.00    |
| S2RARCAREDPMM | 461  | 0.00 | 0.00    | 0.00    | 0.00    |
| S3RARCAREDPMM | 575  | 0.00 | 0.00    | 0.00    | 0.00    |
| S4RARCAREDPMM | 638  | 0.00 | 0.00    | 0.00    | 0.00    |
| S5RARCAREDPMM | 572  | 0.00 | 0.00    | 0.00    | 0.00    |

|              |      |      |      |      |       |
|--------------|------|------|------|------|-------|
| R1RARCAREHR  | 780  | 0.39 | 2.30 | 0.00 | 28.00 |
| R2RARCAREHR  | 793  | 0.49 | 2.62 | 0.00 | 36.00 |
| R3RARCAREHR  | 1171 | 0.66 | 4.06 | 0.00 | 50.00 |
| R4RARCAREHR  | 1296 | 0.32 | 2.12 | 0.00 | 32.00 |
| R5RARCAREHR  | 1377 | 0.55 | 4.69 | 0.00 | 72.00 |
| S1RARCAREHR  | 456  | 0.21 | 1.86 | 0.00 | 24.00 |
| S2RARCAREHR  | 461  | 0.16 | 1.34 | 0.00 | 16.00 |
| S3RARCAREHR  | 575  | 0.12 | 1.29 | 0.00 | 24.00 |
| S4RARCAREHR  | 638  | 0.04 | 0.46 | 0.00 | 8.00  |
| S5RARCAREHR  | 572  | 0.18 | 3.26 | 0.00 | 72.00 |
| R1RARCAREHRM | 780  | 0.00 | 0.00 | 0.00 | 0.00  |
| R2RARCAREHRM | 793  | 0.00 | 0.00 | 0.00 | 0.00  |
| R3RARCAREHRM | 1172 | 0.00 | 0.03 | 0.00 | 1.00  |
| R4RARCAREHRM | 1297 | 0.00 | 0.03 | 0.00 | 1.00  |
| R5RARCAREHRM | 1380 | 0.00 | 0.07 | 0.00 | 2.00  |
| S1RARCAREHRM | 456  | 0.00 | 0.00 | 0.00 | 0.00  |
| S2RARCAREHRM | 461  | 0.00 | 0.00 | 0.00 | 0.00  |
| S3RARCAREHRM | 575  | 0.00 | 0.00 | 0.00 | 0.00  |
| S4RARCAREHRM | 638  | 0.00 | 0.00 | 0.00 | 0.00  |
| S5RARCAREHRM | 572  | 0.00 | 0.00 | 0.00 | 0.00  |

## Categorical Variable Codes

| Value-----          | R1RARCARE | R2RARCARE | R3RARCARE | R4RARCARE | R5RARCARE |
|---------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK               | 1         |           | 1         | 6         | 2         |
| .h:no help received | 873       | 737       | 1785      | 1715      | 1654      |
| .m:Missing          | 40        | 30        |           | 40        | 18        |
| .r:Refuse           | 2         |           | 1         | 1         | 82        |
| .x:no difficulty    | 13490     | 12144     | 12764     | 11720     | 13978     |
| 0.No                | 740       | 751       | 1109      | 1236      | 1313      |
| 1.Yes               | 40        | 42        | 63        | 61        | 67        |

| Value-----          | S1RARCARE | S2RARCARE | S3RARCARE | S4RARCARE | S5RARCARE |
|---------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK               |           |           | 1         | 5         |           |
| .h:no help received | 524       | 408       | 1107      | 1012      | 724       |
| .m:Missing          | 14        | 8         |           | 10        | 3         |
| .r:Refuse           | 1         |           |           |           | 55        |
| .u:Unmar            | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR            | 333       | 131       | 349       | 280       | 501       |
| .x:no difficulty    | 9653      | 8687      | 8909      | 7987      | 6107      |
| 0.No                | 446       | 454       | 565       | 630       | 568       |
| 1.Yes               | 10        | 7         | 10        | 8         | 4         |

## How Constructed

The following variables indicate whether any of the respondent's relatives help the respondent with any ADL needs. The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. If the respondent reports having difficulty with an ADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with ADLs. The information used to derive these variables is taken from the help files in Waves 1 and 2 and from the individual files in Waves 3 and forward. For each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

The following variables are coded as special missing value .x if the respondent reports no difficulty with any ADL, and are coded as special missing value .h if the respondent reports difficulty with an ADL or IADL but does not receive any help. Don't know, refused, or other missing responses are assigned special missing values .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwRARCARE, RwRARCAREN, RwRARCAREDPM, RwRARCAREDPMM, RwRARCAREHR, and RwRARCAREHRM include help from the respondent's parent or other relative.

RwRARCARE indicates whether any of the respondent's relatives help the respondent with ADL needs. RwRARCAREN indicates the number of the respondent's relatives who help the respondent with ADL needs. RwRARCARE is coded as 0 if none of the respondent's relatives help the respondent with ADLs; and is coded as 1 if at least one of the respondent's relatives help the respondent with ADLs.

RwRARCAREDPM indicates the number of total days per month the respondent's relatives help the respondent with ADL needs. If the respondent reports receiving help every day from that relative, then a value of 30 is assumed. RwRARCAREDPM is the sum of days per month for all relative helpers, and so values can be over 30 days. RwRARCAREDPM is calculated as long as there is one non-missing value. RwRARCAREDPM is assigned a value of 0 if the respondent did not receive help from any relatives. RwRARCAREDPMM indicates the number of relatives who helped the respondent for whom no value of days was reported and was not accounted for in RwRARCAREDPM. RwRARCAREDPMM is assigned special missing value .m if the respondent was not helped by any relatives.

RwRARCAREHR indicates the number of hours per day the respondent's relatives help the respondent with ADL needs. Respondents are asked, on days their relatives help, how many hours per day that is. If the respondent reports less than an hour for that relative, then a 1 is assumed. RwRARCAREHR is the sum of hours per day for all relative helpers, and so values can be over 24 hours. RwRARCAREHR is calculated as long as there is one non-missing value. RwRARCAREHR is assigned a value of 0 if the respondent did not receive help from any relatives. RwRARCAREHRM indicates the number of relatives who helped the respondent for whom no value of hours was reported and was not accounted for in RwRARCAREHR. RwRARCAREHRM is assigned special missing value .m if the respondent was not helped by any relatives.

SwRARCARE, SwRARCAREN, SwRARCAREDPM, and SwRARCAREHR indicate whether the respondent's current wave's spouse receives help from relatives, the number, and the frequency with which, and their values are taken from RwRARCARE, RwRARCAREN, RwRARCAREDPM, and RwRARCAREHR. SwRARCAREDPMM and SwRARCAREHRM indicate the number of relatives who helped the respondent's current spouse for whom a value was not reported for the number of days and hours and are taken from RwRARCAREDPMM and RwRARCAREHRM. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers in Waves 1 and 2, up to 8 caregivers in Waves 3 and 4, and up to 3 caregivers in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible.

RwRARCAREDPW in the Harmonized HRS indicates the days per week the respondent received help, while RwRARCAREDPM in the Harmonized MHAS indicates the days per month the respondent received help. As such, adjustment must be made before comparison of these variables.

The HRS asks for up to 7 relationships of people who help with ADLs (dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet). The MHAS, in contrast, asks for the relationships of a varying number of people across waves who help with ADLs.

## MHAS Variables Used

## Wave 1:

|       |                                       |
|-------|---------------------------------------|
| H14   | help dressing                         |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H19_3 | spouse helps using toilet             |
| H19_4 | other helps using toilet              |

## Wave 1 Helper:

|     |                         |
|-----|-------------------------|
| H22 | kinship of helper       |
| H23 | roster number of helper |
| H24 | days of help            |
| H25 | hours of help           |

## Wave 2:

|      |                                 |
|------|---------------------------------|
| H14  | someone help you to get dressed |
| H15E | spouse helps                    |
| H15F | additional person helps         |
| H16E | spouse helps                    |
| H16F | additional person helps         |
| H17E | spouse helps                    |
| H17F | additional person helps         |
| H18E | spouse helps                    |
| H18F | additional person helps         |
| H19E | spouse helps                    |
| H19F | additional person helps         |

## Wave 2 Helper:

|     |   |
|-----|---|
| H22 | relationship                            |
| H23 | registration number                     |
| H24 | number of days (name) helped last month |
| H25 | number of hours during those days       |

## Wave 3:

|          |  |
|----------|--|
| H14_12   | Someone help you to get dressed              |
| H15D_12  | Someone help you walk across room            |
| H16D_12  | Someone help you to bathe or shower          |
| H17D_12  | Does someone help you eat your food          |
| H18D_12  | Does someone help you get into or out of bed |
| H19D_12  | Does someone help you use toilet, get on off |
| H22_1_12 | Relationship with helper for ADLs            |
| H22_2_12 | Relationship with helper for ADLs            |
| H22_3_12 | Relationship with helper for ADLs            |
| H22_4_12 | Relationship with helper for ADLs            |
| H22_5_12 | Relationship with helper for ADLs            |
| H22_6_12 | Relationship with helper for ADLs            |
| H22_7_12 | Relationship with helper for ADLs            |
| H22_8_12 | Relationship with helper for ADLs            |
| H23_1_12 | Registration number of helper for ADLs       |
| H23_2_12 | Registration number of helper for ADLs       |
| H23_3_12 | Registration number of helper for ADLs       |
| H23_4_12 | Registration number of helper for ADLs       |
| H23_5_12 | Registration number of helper for ADLs       |
| H23_6_12 | Registration number of helper for ADLs       |
| H23_7_12 | Registration number of helper for ADLs       |
| H23_8_12 | Registration number of helper for ADLs       |
| H24_1_12 | Number of days (name) helped last month      |
| H24_2_12 | Number of days (name) helped last month      |
| H24_3_12 | Number of days (name) helped last month      |
| H24_4_12 | Number of days (name) helped last month      |
| H24_5_12 | Number of days (name) helped last month      |
| H24_6_12 | Number of days (name) helped last month      |
| H24_7_12 | Number of days (name) helped last month      |

|          |   |
|----------|---|
| H24_8_12 | Number of days (name) helped last month         |
| H25_1_12 | Number of hours during those days (NAME) helped |
| H25_2_12 | Number of hours during those days (NAME) helped |
| H25_3_12 | Number of hours during those days (NAME) helped |
| H25_4_12 | Number of hours during those days (NAME) helped |
| H25_5_12 | Number of hours during those days (NAME) helped |
| H25_6_12 | Number of hours during those days (NAME) helped |
| H25_7_12 | Number of hours during those days (NAME) helped |
| H25_8_12 | Number of hours during those days (NAME) helped |

## Wave 4:

|          |  |
|----------|--|
| H14_15   | Does someone help respondent to get dressed              |
| H15D_15  | Does someone help respondent walking across a room       |
| H16D_15  | Does someone help respondent bathing or showering        |
| H17D_15  | Does someone help respondent eating                      |
| H18D_15  | Does someone help respondent getting in or out of bed    |
| H19D_15  | Does someone help respondent using the toilet            |
| H22_1_15 | Respondent's relationship with person helping with ADLs  |
| H22_2_15 | Respondent's relationship with person helping with ADLs  |
| H22_3_15 | Respondent's relationship with person helping with ADLs  |
| H22_4_15 | Respondent's relationship with person helping with ADLs  |
| H22_5_15 | Respondent's relationship with person helping with ADLs  |
| H22_6_15 | Respondent's relationship with person helping with ADLs  |
| H22_7_15 | Respondent's relationship with person helping with ADLs  |
| H22_8_15 | Respondent's relationship with person helping with ADLs  |
| H23_1_15 | Registration number of person helping with ADLs          |
| H23_2_15 | Registration number of person helping with ADLs          |
| H23_3_15 | Registration number of person helping with ADLs          |
| H23_4_15 | Registration number of person helping with ADLs          |
| H23_5_15 | Registration number of person helping with ADLs          |
| H23_6_15 | Registration number of person helping with ADLs          |
| H23_7_15 | Registration number of person helping with ADLs          |
| H23_8_15 | Registration number of person helping with ADLs          |
| H24_1_15 | Number of days the person helped during last month       |
| H24_2_15 | Number of days the person helped during last month       |
| H24_3_15 | Number of days the person helped during last month       |
| H24_4_15 | Number of days the person helped during last month       |
| H24_5_15 | Number of days the person helped during last month       |
| H24_6_15 | Number of days the person helped during last month       |
| H24_7_15 | Number of days the person helped during last month       |
| H24_8_15 | Number of days the person helped during last month       |
| H25_1_15 | Number of hours during those days that the person helped |
| H25_2_15 | Number of hours during those days that the person helped |
| H25_3_15 | Number of hours during those days that the person helped |
| H25_4_15 | Number of hours during those days that the person helped |
| H25_5_15 | Number of hours during those days that the person helped |
| H25_6_15 | Number of hours during those days that the person helped |
| H25_7_15 | Number of hours during those days that the person helped |
| H25_8_15 | Number of hours during those days that the person helped |

## Wave 5:

|          |  |
|----------|--|
| H14_18   | Does someone help R to get dressed                 |
| H15D_18  | Does someone help R walking across a room          |
| H16D_18  | Does someone help R bathing or showering           |
| H17D_18  | Does someone help R eating                         |
| H18D_18  | Does someone help R getting in or out of bed       |
| H19D_18  | Does someone help R using the toilet               |
| H22_1_18 | R's relationship with person helping with ADLs     |
| H22_2_18 | R's relationship with person helping with ADLs     |
| H22_3_18 | R's relationship with person helping with ADLs     |
| H23_1_18 | Registration number of person helping with ADLs    |
| H23_2_18 | Registration number of person helping with ADLs    |
| H23_3_18 | Registration number of person helping with ADLs    |
| H24_1_18 | Number of days the person helped during last month |
| H24_2_18 | Number of days the person helped during last month |
| H24_3_18 | Number of days the person helped during last month |

|          |   |
|----------|---|
| H25_1_18 | Number of hours during those days that the person helpe |
| H25_2_18 | Number of hours during those days that the person helpe |
| H25_3_18 | Number of hours during those days that the person helpe |



|  |
|--|
| <b>Activities of Daily Living: Receives Informal Care from Other Individuals</b> |
|--|

| Wave | Variable      | Label  | Type  |
|------|---------------|--|-------|
| 1    | R1RAFCARE     | r1rafcare: w1 R receives informal care from non-relatives fo | Categ |
| 2    | R2RAFCARE     | r2rafcare: w2 R receives informal care from non-relatives fo | Categ |
| 3    | R3RAFCARE     | r3rafcare: w3 R receives informal care from non-relatives fo | Categ |
| 4    | R4RAFCARE     | r4rafcare: w4 R receives informal care from non-relatives fo | Categ |
| 5    | R5RAFCARE     | r5rafcare: w5 R receives informal care from non-relatives fo | Categ |
|      |               |  |       |
| 1    | S1RAFCARE     | s1rafcare: w1 S receives informal care from non-relatives fo | Categ |
| 2    | S2RAFCARE     | s2rafcare: w2 S receives informal care from non-relatives fo | Categ |
| 3    | S3RAFCARE     | s3rafcare: w3 S receives informal care from non-relatives fo | Categ |
| 4    | S4RAFCARE     | s4rafcare: w4 S receives informal care from non-relatives fo | Categ |
| 5    | S5RAFCARE     | s5rafcare: w5 S receives informal care from non-relatives fo | Categ |
|      |               |  |       |
| 1    | R1RAFCAREN    | r1rafcaren: w1 # non-relatives who help R with ADLs          | Cont  |
| 2    | R2RAFCAREN    | r2rafcaren: w2 # non-relatives who help R with ADLs          | Cont  |
| 3    | R3RAFCAREN    | r3rafcaren: w3 # non-relatives who help R with ADLs          | Cont  |
| 4    | R4RAFCAREN    | r4rafcaren: w4 # non-relatives who help R with ADLs          | Cont  |
| 5    | R5RAFCAREN    | r5rafcaren: w5 # non-relatives who help R with ADLs          | Cont  |
|      |               |  |       |
| 1    | S1RAFCAREN    | s1rafcaren: w1 # non-relatives who help S with ADLs          | Cont  |
| 2    | S2RAFCAREN    | s2rafcaren: w2 # non-relatives who help S with ADLs          | Cont  |
| 3    | S3RAFCAREN    | s3rafcaren: w3 # non-relatives who help S with ADLs          | Cont  |
| 4    | S4RAFCAREN    | s4rafcaren: w4 # non-relatives who help S with ADLs          | Cont  |
| 5    | S5RAFCAREN    | s5rafcaren: w5 # non-relatives who help S with ADLs          | Cont  |
|      |               |  |       |
| 1    | R1RAFCAREDPM  | r1rafcaredpm: w1 days/month non-relatives help R with ADLs   | Cont  |
| 2    | R2RAFCAREDPM  | r2rafcaredpm: w2 days/month non-relatives help R with ADLs   | Cont  |
| 3    | R3RAFCAREDPM  | r3rafcaredpm: w3 days/month non-relatives help R with ADLs   | Cont  |
| 4    | R4RAFCAREDPM  | r4rafcaredpm: w4 days/month non-relatives help R with ADLs   | Cont  |
| 5    | R5RAFCAREDPM  | r5rafcaredpm: w5 days/month non-relatives help R with ADLs   | Cont  |
|      |               |  |       |
| 1    | S1RAFCAREDPM  | s1rafcaredpm: w1 days/month non-relatives help S with ADLs   | Cont  |
| 2    | S2RAFCAREDPM  | s2rafcaredpm: w2 days/month non-relatives help S with ADLs   | Cont  |
| 3    | S3RAFCAREDPM  | s3rafcaredpm: w3 days/month non-relatives help S with ADLs   | Cont  |
| 4    | S4RAFCAREDPM  | s4rafcaredpm: w4 days/month non-relatives help S with ADLs   | Cont  |
| 5    | S5RAFCAREDPM  | s5rafcaredpm: w5 days/month non-relatives help S with ADLs   | Cont  |
|      |               |  |       |
| 1    | R1RAFCAREDPMM | r1rafcaredpmm: w1 R # non-relatives missing days of help for | Cont  |
| 2    | R2RAFCAREDPMM | r2rafcaredpmm: w2 R # non-relatives missing days of help for | Cont  |
| 3    | R3RAFCAREDPMM | r3rafcaredpmm: w3 R # non-relatives missing days of help for | Cont  |
| 4    | R4RAFCAREDPMM | r4rafcaredpmm: w4 R # non-relatives missing days of help for | Cont  |
| 5    | R5RAFCAREDPMM | r5rafcaredpmm: w5 R # non-relatives missing days of help for | Cont  |
|      |               |  |       |
| 1    | S1RAFCAREDPMM | s1rafcaredpmm: w1 S # non-relatives missing days of help for | Cont  |
| 2    | S2RAFCAREDPMM | s2rafcaredpmm: w2 S # non-relatives missing days of help for | Cont  |
| 3    | S3RAFCAREDPMM | s3rafcaredpmm: w3 S # non-relatives missing days of help for | Cont  |
| 4    | S4RAFCAREDPMM | s4rafcaredpmm: w4 S # non-relatives missing days of help for | Cont  |
| 5    | S5RAFCAREDPMM | s5rafcaredpmm: w5 S # non-relatives missing days of help for | Cont  |
|      |               |  |       |
| 1    | R1RAFCAREHR   | r1rafcarehr: w1 hours/day non-relatives help R with ADLs     | Cont  |
| 2    | R2RAFCAREHR   | r2rafcarehr: w2 hours/day non-relatives help R with ADLs     | Cont  |
| 3    | R3RAFCAREHR   | r3rafcarehr: w3 hours/day non-relatives help R with ADLs     | Cont  |
| 4    | R4RAFCAREHR   | r4rafcarehr: w4 hours/day non-relatives help R with ADLs     | Cont  |
| 5    | R5RAFCAREHR   | r5rafcarehr: w5 hours/day non-relatives help R with ADLs     | Cont  |
|      |               |  |       |
| 1    | S1RAFCAREHR   | s1rafcarehr: w1 hours/day non-relatives help S with ADLs     | Cont  |
| 2    | S2RAFCAREHR   | s2rafcarehr: w2 hours/day non-relatives help S with ADLs     | Cont  |
| 3    | S3RAFCAREHR   | s3rafcarehr: w3 hours/day non-relatives help S with ADLs     | Cont  |
| 4    | S4RAFCAREHR   | s4rafcarehr: w4 hours/day non-relatives help S with ADLs     | Cont  |
| 5    | S5RAFCAREHR   | s5rafcarehr: w5 hours/day non-relatives help S with ADLs     | Cont  |

|   |              |                  |                   |                           |      |
|---|--------------|------------------|-------------------|---------------------------|------|
| 1 | R1RAFCAREHRM | r1rafcarehrm: w1 | R # non-relatives | missing hours of help for | Cont |
| 2 | R2RAFCAREHRM | r2rafcarehrm: w2 | R # non-relatives | missing hours of help for | Cont |
| 3 | R3RAFCAREHRM | r3rafcarehrm: w3 | R # non-relatives | missing hours of help for | Cont |
| 4 | R4RAFCAREHRM | r4rafcarehrm: w4 | R # non-relatives | missing hours of help for | Cont |
| 5 | R5RAFCAREHRM | r5rafcarehrm: w5 | R # non-relatives | missing hours of help for | Cont |
|   |              |                  |                   |                           |      |
| 1 | S1RAFCAREHRM | s1rafcarehrm: w1 | S # non-relatives | missing hours of help for | Cont |
| 2 | S2RAFCAREHRM | s2rafcarehrm: w2 | S # non-relatives | missing hours of help for | Cont |
| 3 | S3RAFCAREHRM | s3rafcarehrm: w3 | S # non-relatives | missing hours of help for | Cont |
| 4 | S4RAFCAREHRM | s4rafcarehrm: w4 | S # non-relatives | missing hours of help for | Cont |
| 5 | S5RAFCAREHRM | s5rafcarehrm: w5 | S # non-relatives | missing hours of help for | Cont |

## Descriptive Statistics

| Variable      | N    | Mean | Std Dev | Minimum | Maximum |
|---------------|------|------|---------|---------|---------|
|               |      |      |         |         |         |
| R1RAFCARE     | 780  | 0.03 | 0.17    | 0.00    | 1.00    |
| R2RAFCARE     | 793  | 0.03 | 0.16    | 0.00    | 1.00    |
| R3RAFCARE     | 1172 | 0.03 | 0.17    | 0.00    | 1.00    |
| R4RAFCARE     | 1297 | 0.03 | 0.16    | 0.00    | 1.00    |
| R5RAFCARE     | 1380 | 0.06 | 0.24    | 0.00    | 1.00    |
|               |      |      |         |         |         |
| S1RAFCARE     | 456  | 0.01 | 0.10    | 0.00    | 1.00    |
| S2RAFCARE     | 461  | 0.01 | 0.10    | 0.00    | 1.00    |
| S3RAFCARE     | 575  | 0.01 | 0.10    | 0.00    | 1.00    |
| S4RAFCARE     | 638  | 0.01 | 0.10    | 0.00    | 1.00    |
| S5RAFCARE     | 572  | 0.05 | 0.23    | 0.00    | 1.00    |
|               |      |      |         |         |         |
| R1RAFCAREN    | 780  | 0.04 | 0.28    | 0.00    | 6.00    |
| R2RAFCAREN    | 793  | 0.03 | 0.18    | 0.00    | 2.00    |
| R3RAFCAREN    | 1172 | 0.03 | 0.17    | 0.00    | 1.00    |
| R4RAFCAREN    | 1297 | 0.03 | 0.18    | 0.00    | 2.00    |
| R5RAFCAREN    | 1380 | 0.07 | 0.28    | 0.00    | 2.00    |
|               |      |      |         |         |         |
| S1RAFCAREN    | 456  | 0.01 | 0.13    | 0.00    | 2.00    |
| S2RAFCAREN    | 461  | 0.01 | 0.10    | 0.00    | 1.00    |
| S3RAFCAREN    | 575  | 0.01 | 0.10    | 0.00    | 1.00    |
| S4RAFCAREN    | 638  | 0.01 | 0.10    | 0.00    | 1.00    |
| S5RAFCAREN    | 572  | 0.05 | 0.23    | 0.00    | 1.00    |
|               |      |      |         |         |         |
| R1RAFCAREDPM  | 780  | 0.63 | 4.56    | 0.00    | 60.00   |
| R2RAFCAREDPM  | 793  | 0.64 | 4.37    | 0.00    | 50.00   |
| R3RAFCAREDPM  | 1171 | 0.67 | 4.27    | 0.00    | 30.00   |
| R4RAFCAREDPM  | 1297 | 0.54 | 3.73    | 0.00    | 30.00   |
| R5RAFCAREDPM  | 1368 | 1.33 | 6.43    | 0.00    | 60.00   |
|               |      |      |         |         |         |
| S1RAFCAREDPM  | 456  | 0.12 | 2.16    | 0.00    | 46.00   |
| S2RAFCAREDPM  | 461  | 0.33 | 3.11    | 0.00    | 30.00   |
| S3RAFCAREDPM  | 575  | 0.23 | 2.53    | 0.00    | 30.00   |
| S4RAFCAREDPM  | 638  | 0.13 | 1.75    | 0.00    | 30.00   |
| S5RAFCAREDPM  | 567  | 1.09 | 5.43    | 0.00    | 30.00   |
|               |      |      |         |         |         |
| R1RAFCAREDPMM | 780  | 0.00 | 0.00    | 0.00    | 0.00    |
| R2RAFCAREDPMM | 793  | 0.00 | 0.00    | 0.00    | 0.00    |
| R3RAFCAREDPMM | 1172 | 0.00 | 0.03    | 0.00    | 1.00    |
| R4RAFCAREDPMM | 1297 | 0.00 | 0.00    | 0.00    | 0.00    |
| R5RAFCAREDPMM | 1380 | 0.01 | 0.13    | 0.00    | 2.00    |
|               |      |      |         |         |         |
| S1RAFCAREDPMM | 456  | 0.00 | 0.00    | 0.00    | 0.00    |
| S2RAFCAREDPMM | 461  | 0.00 | 0.00    | 0.00    | 0.00    |
| S3RAFCAREDPMM | 575  | 0.00 | 0.00    | 0.00    | 0.00    |
| S4RAFCAREDPMM | 638  | 0.00 | 0.00    | 0.00    | 0.00    |
| S5RAFCAREDPMM | 572  | 0.01 | 0.09    | 0.00    | 1.00    |

|              |      |      |      |      |       |
|--------------|------|------|------|------|-------|
| R1RAFCAREHR  | 780  | 0.17 | 1.51 | 0.00 | 24.00 |
| R2RAFCAREHR  | 793  | 0.14 | 1.12 | 0.00 | 14.00 |
| R3RAFCAREHR  | 1172 | 0.33 | 2.39 | 0.00 | 24.00 |
| R4RAFCAREHR  | 1297 | 0.18 | 1.42 | 0.00 | 24.00 |
| R5RAFCAREHR  | 1369 | 0.39 | 2.42 | 0.00 | 36.00 |
|              |      |      |      |      |       |
| S1RAFCAREHR  | 456  | 0.03 | 0.48 | 0.00 | 10.00 |
| S2RAFCAREHR  | 461  | 0.11 | 1.07 | 0.00 | 12.00 |
| S3RAFCAREHR  | 575  | 0.21 | 2.23 | 0.00 | 24.00 |
| S4RAFCAREHR  | 638  | 0.05 | 0.65 | 0.00 | 12.00 |
| S5RAFCAREHR  | 567  | 0.35 | 2.00 | 0.00 | 20.00 |
|              |      |      |      |      |       |
| R1RAFCAREHRM | 780  | 0.00 | 0.00 | 0.00 | 0.00  |
| R2RAFCAREHRM | 793  | 0.00 | 0.00 | 0.00 | 0.00  |
| R3RAFCAREHRM | 1172 | 0.00 | 0.00 | 0.00 | 0.00  |
| R4RAFCAREHRM | 1297 | 0.00 | 0.00 | 0.00 | 0.00  |
| R5RAFCAREHRM | 1380 | 0.01 | 0.12 | 0.00 | 2.00  |
|              |      |      |      |      |       |
| S1RAFCAREHRM | 456  | 0.00 | 0.00 | 0.00 | 0.00  |
| S2RAFCAREHRM | 461  | 0.00 | 0.00 | 0.00 | 0.00  |
| S3RAFCAREHRM | 575  | 0.00 | 0.00 | 0.00 | 0.00  |
| S4RAFCAREHRM | 638  | 0.00 | 0.00 | 0.00 | 0.00  |
| S5RAFCAREHRM | 572  | 0.01 | 0.09 | 0.00 | 1.00  |

## Categorical Variable Codes

| Value-----          | R1RAFCARE | R2RAFCARE | R3RAFCARE | R4RAFCARE | R5RAFCARE |
|---------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK               | 1         |           | 1         | 6         | 2         |
| .h:no help received | 873       | 737       | 1785      | 1715      | 1654      |
| .m:Missing          | 40        | 30        |           | 40        | 18        |
| .r:Refuse           | 2         |           | 1         | 1         | 82        |
| .x:no difficulty    | 13490     | 12144     | 12764     | 11720     | 13978     |
| 0.No                | 758       | 773       | 1135      | 1261      | 1296      |
| 1.Yes               | 22        | 20        | 37        | 36        | 84        |

| Value-----          | S1RAFCARE | S2RAFCARE | S3RAFCARE | S4RAFCARE | S5RAFCARE |
|---------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK               |           |           | 1         | 5         |           |
| .h:no help received | 524       | 408       | 1107      | 1012      | 724       |
| .m:Missing          | 14        | 8         |           | 10        | 3         |
| .r:Refuse           | 1         |           |           |           | 55        |
| .u:Unmar            | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR            | 333       | 131       | 349       | 280       | 501       |
| .x:no difficulty    | 9653      | 8687      | 8909      | 7987      | 6107      |
| 0.No                | 451       | 456       | 569       | 632       | 541       |
| 1.Yes               | 5         | 5         | 6         | 6         | 31        |

## How Constructed

The following variables indicate whether any non-relative helps the respondent with any ADL needs. The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. If the respondent reports having difficulty with an ADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with ADLs. The information used to derive these variables is taken from the help files in Waves 1 and 2 and from the individual files in Waves 3 and forward. For each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

The following variables are coded as special missing value .x if the respondent reports no difficulty with any ADL, and are coded as special missing value .h if the respondent reports difficulty with an ADL but does not receive any help. Don't know, refused, or other missing responses are assigned special missing values .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwRAFCARE, RwRAFCAREN, RwRAFCAREDPM, RwRAFCAREDPMM, RwRAFCAREHR, and RwRAFCAREHRM include help from another person (not their spouse, child, child-in-law, grandchild, parent, other relative, or paid person).

RwRAFCARE indicates whether any of the respondent's non-relatives help the respondent with ADL needs. RwRAFCAREN indicates the number of the respondent's non-relatives who help the respondent with ADL needs. RwRAFCARE is coded as 0 if none of the respondent's non-relatives help the respondent with ADLs; and is coded as 1 if at least one of the respondent's non-relatives help the respondent with ADLs.

RwRAFCAREDPM indicates the number of total days per month the respondent's non-relatives help the respondent with ADL needs. If the respondent reports receiving help every day from that non-relative, then a value of 30 is assumed. RwRAFCAREDPM is the sum of days per month for all non-relative helpers, and so values can be over 30 days. RwRAFCAREDPM is calculated as long as there is one non-missing value. RwRAFCAREDPM is assigned a value of 0 if the respondent did not receive help from any non-relatives. RwRAFCAREDPMM indicates the number of non-relatives who helped the respondent for whom no value of days was reported and was not accounted for in RwRAFCAREDPM. RwRAFCAREDPMM is assigned special missing value .m if the respondent was not helped by any non-relatives.

RwRAFCAREHR indicates the number of hours per day the respondent's non-relatives help the respondent with ADL needs. Respondents are asked, on days their non-relatives help, how many hours per day that is. If the respondent reports less than an hour for that non-relative, then a 1 is assumed. RwRAFCAREHR is the sum of hours per day for all non-relative helpers, and so values can be over 24 hours. RwRAFCAREHR is calculated as long as there is one non-missing value. RwRAFCAREHRE is assigned a value of 0 if the respondent did not receive help from any non-relatives. RwRAFCAREHRM indicates the number of non-relatives who helped the respondent for whom no value of hours was reported and was not accounted for in RwRAFCAREHR. RwRAFCAREHRM is assigned special missing value .m if the respondent was not helped by any non-relatives.

SwRAFCARE, SwRAFCAREN, SwRAFCAREDPM, and SwRAFCAREHR indicate whether the respondent's current wave's spouse receives help from non-relatives, the number, and the frequency with which, and their values are taken from RwRAFCARE, RwRAFCAREN, RwRAFCAREDPM, and RwRAFCAREHR. SwRAFCAREDPMM and SwRAFCAREHRM indicate the number of non-relatives who helped the respondent's current spouse for whom a value was not reported for the number of days and hours and are taken from RwRAFCAREDPMM and RwRAFCAREHRM. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers in Waves 1 and 2, up to 8 caregivers in Waves 3 and 4, and up to 3 caregivers in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible.

RwRAFCAREDPW in the Harmonized HRS indicates the days per week the respondent received help, while RwRAFCAREDPM in the Harmonized MHAS indicates the days per month the respondent received help. As such, adjustment must be made before comparison of these variables.

The HRS asks for up to 7 relationships of people who help with ADLs (dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet). The MHAS, in contrast, asks for the relationships of a varying number of people across waves who help with ADLs.

**MHAS Variables Used****Wave 1:**

|       |                                       |
|-------|---------------------------------------|
| H14   | help dressing                         |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H19_3 | spouse helps using toilet             |
| H19_4 | other helps using toilet              |

**Wave 1 Helper:**

|     |                         |
|-----|-------------------------|
| H22 | kinship of helper       |
| H23 | roster number of helper |
| H24 | days of help            |
| H25 | hours of help           |

**Wave 2:**

|      |                                 |
|------|---------------------------------|
| H14  | someone help you to get dressed |
| H15E | spouse helps                    |
| H15F | additional person helps         |
| H16E | spouse helps                    |
| H16F | additional person helps         |
| H17E | spouse helps                    |
| H17F | additional person helps         |
| H18E | spouse helps                    |
| H18F | additional person helps         |
| H19E | spouse helps                    |
| H19F | additional person helps         |

**Wave 2 Helper:**

|     |   |
|-----|---|
| H22 | relationship                            |
| H23 | registration number                     |
| H24 | number of days (name) helped last month |
| H25 | number of hours during those days       |

**Wave 3:**

|          |  |
|----------|--|
| H14_12   | Someone help you to get dressed              |
| H15D_12  | Someone help you walk across room            |
| H16D_12  | Someone help you to bathe or shower          |
| H17D_12  | Does someone help you eat your food          |
| H18D_12  | Does someone help you get into or out of bed |
| H19D_12  | Does someone help you use toilet, get on off |
| H22_1_12 | Relationship with helper for ADLs            |
| H22_2_12 | Relationship with helper for ADLs            |
| H22_3_12 | Relationship with helper for ADLs            |
| H22_4_12 | Relationship with helper for ADLs            |
| H22_5_12 | Relationship with helper for ADLs            |
| H22_6_12 | Relationship with helper for ADLs            |
| H22_7_12 | Relationship with helper for ADLs            |
| H22_8_12 | Relationship with helper for ADLs            |
| H23_1_12 | Registration number of helper for ADLs       |
| H23_2_12 | Registration number of helper for ADLs       |
| H23_3_12 | Registration number of helper for ADLs       |
| H23_4_12 | Registration number of helper for ADLs       |
| H23_5_12 | Registration number of helper for ADLs       |
| H23_6_12 | Registration number of helper for ADLs       |
| H23_7_12 | Registration number of helper for ADLs       |
| H23_8_12 | Registration number of helper for ADLs       |
| H24_1_12 | Number of days (name) helped last month      |
| H24_2_12 | Number of days (name) helped last month      |
| H24_3_12 | Number of days (name) helped last month      |
| H24_4_12 | Number of days (name) helped last month      |
| H24_5_12 | Number of days (name) helped last month      |

|          |   |
|----------|---|
| H24_6_12 | Number of days (name) helped last month         |
| H24_7_12 | Number of days (name) helped last month         |
| H24_8_12 | Number of days (name) helped last month         |
| H25_1_12 | Number of hours during those days (NAME) helped |
| H25_2_12 | Number of hours during those days (NAME) helped |
| H25_3_12 | Number of hours during those days (NAME) helped |
| H25_4_12 | Number of hours during those days (NAME) helped |
| H25_5_12 | Number of hours during those days (NAME) helped |
| H25_6_12 | Number of hours during those days (NAME) helped |
| H25_7_12 | Number of hours during those days (NAME) helped |
| H25_8_12 | Number of hours during those days (NAME) helped |

## Wave 4:

|          |   |
|----------|---|
| H14_15   | Does someone help respondent to get dressed             |
| H15D_15  | Does someone help respondent walking across a room      |
| H16D_15  | Does someone help respondent bathing or showering       |
| H17D_15  | Does someone help respondent eating                     |
| H18D_15  | Does someone help respondent getting in or out of bed   |
| H19D_15  | Does someone help respondent using the toilet           |
| H22_1_15 | Respondent's relationship with person helping with ADLs |
| H22_2_15 | Respondent's relationship with person helping with ADLs |
| H22_3_15 | Respondent's relationship with person helping with ADLs |
| H22_4_15 | Respondent's relationship with person helping with ADLs |
| H22_5_15 | Respondent's relationship with person helping with ADLs |
| H22_6_15 | Respondent's relationship with person helping with ADLs |
| H22_7_15 | Respondent's relationship with person helping with ADLs |
| H22_8_15 | Respondent's relationship with person helping with ADLs |
| H23_1_15 | Registration number of person helping with ADLs         |
| H23_2_15 | Registration number of person helping with ADLs         |
| H23_3_15 | Registration number of person helping with ADLs         |
| H23_4_15 | Registration number of person helping with ADLs         |
| H23_5_15 | Registration number of person helping with ADLs         |
| H23_6_15 | Registration number of person helping with ADLs         |
| H23_7_15 | Registration number of person helping with ADLs         |
| H23_8_15 | Registration number of person helping with ADLs         |
| H24_1_15 | Number of days the person helped during last month      |
| H24_2_15 | Number of days the person helped during last month      |
| H24_3_15 | Number of days the person helped during last month      |
| H24_4_15 | Number of days the person helped during last month      |
| H24_5_15 | Number of days the person helped during last month      |
| H24_6_15 | Number of days the person helped during last month      |
| H24_7_15 | Number of days the person helped during last month      |
| H24_8_15 | Number of days the person helped during last month      |
| H25_1_15 | Number of hours during those days that the person helps |
| H25_2_15 | Number of hours during those days that the person helps |
| H25_3_15 | Number of hours during those days that the person helps |
| H25_4_15 | Number of hours during those days that the person helps |
| H25_5_15 | Number of hours during those days that the person helps |
| H25_6_15 | Number of hours during those days that the person helps |
| H25_7_15 | Number of hours during those days that the person helps |
| H25_8_15 | Number of hours during those days that the person helps |

## Wave 5:

|          |  |
|----------|--|
| H14_18   | Does someone help R to get dressed                 |
| H15D_18  | Does someone help R walking across a room          |
| H16D_18  | Does someone help R bathing or showering           |
| H17D_18  | Does someone help R eating                         |
| H18D_18  | Does someone help R getting in or out of bed       |
| H19D_18  | Does someone help R using the toilet               |
| H22_1_18 | R's relationship with person helping with ADLs     |
| H22_2_18 | R's relationship with person helping with ADLs     |
| H22_3_18 | R's relationship with person helping with ADLs     |
| H23_1_18 | Registration number of person helping with ADLs    |
| H23_2_18 | Registration number of person helping with ADLs    |
| H23_3_18 | Registration number of person helping with ADLs    |
| H24_1_18 | Number of days the person helped during last month |

|          |   |
|----------|---|
| H24_2_18 | Number of days the person helped during last month      |
| H24_3_18 | Number of days the person helped during last month      |
| H25_1_18 | Number of hours during those days that the person helpe |
| H25_2_18 | Number of hours during those days that the person helpe |
| H25_3_18 | Number of hours during those days that the person helpe |

Activities of Daily Living: Whether Receives Any Formal Care

| Wave | Variable  | Label   | Type  |
|------|-----------|---|-------|
| 1    | R1RAFAANY | r1rafaany: w1 R receives any formal care for ADLs | Categ |
| 2    | R2RAFAANY | r2rafaany: w2 R receives any formal care for ADLs | Categ |
| 3    | R3RAFAANY | r3rafaany: w3 R receives any formal care for ADLs | Categ |
| 4    | R4RAFAANY | r4rafaany: w4 R receives any formal care for ADLs | Categ |
| 5    | R5RAFAANY | r5rafaany: w5 R receives any formal care for ADLs | Categ |
| 1    | S1RAFAANY | s1rafaany: w1 S receives any formal care for ADLs | Categ |
| 2    | S2RAFAANY | s2rafaany: w2 S receives any formal care for ADLs | Categ |
| 3    | S3RAFAANY | s3rafaany: w3 S receives any formal care for ADLs | Categ |
| 4    | S4RAFAANY | s4rafaany: w4 S receives any formal care for ADLs | Categ |
| 5    | S5RAFAANY | s5rafaany: w5 S receives any formal care for ADLs | Categ |

Descriptive Statistics

| Variable  | N    | Mean | Std Dev | Minimum | Maximum |
|-----------|------|------|---------|---------|---------|
| R1RAFAANY | 1653 | 0.02 | 0.14    | 0.00    | 1.00    |
| R2RAFAANY | 1530 | 0.02 | 0.14    | 0.00    | 1.00    |
| R3RAFAANY | 2957 | 0.01 | 0.11    | 0.00    | 1.00    |
| R4RAFAANY | 3012 | 0.02 | 0.14    | 0.00    | 1.00    |
| R5RAFAANY | 3034 | 0.02 | 0.13    | 0.00    | 1.00    |
| S1RAFAANY | 980  | 0.00 | 0.06    | 0.00    | 1.00    |
| S2RAFAANY | 869  | 0.00 | 0.07    | 0.00    | 1.00    |
| S3RAFAANY | 1682 | 0.00 | 0.06    | 0.00    | 1.00    |
| S4RAFAANY | 1650 | 0.01 | 0.08    | 0.00    | 1.00    |
| S5RAFAANY | 1296 | 0.01 | 0.11    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----       | R1RAFAANY | R2RAFAANY | R3RAFAANY | R4RAFAANY | R5RAFAANY |
|------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK            | 1         |           | 1         | 6         | 2         |
| .m:Missing       | 40        | 30        |           | 40        | 18        |
| .r:Refuse        | 2         |           | 1         | 1         | 82        |
| .x:no difficulty | 13490     | 12144     | 12764     | 11720     | 13978     |
| 0.No             | 1622      | 1501      | 2921      | 2955      | 2983      |
| 1.Yes            | 31        | 29        | 36        | 57        | 51        |

| Value-----       | S1RAFAANY | S2RAFAANY | S3RAFAANY | S4RAFAANY | S5RAFAANY |
|------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK            |           |           | 1         | 5         |           |
| .m:Missing       | 14        | 8         |           | 10        | 3         |
| .r:Refuse        | 1         |           |           |           | 55        |
| .u:Unmar         | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR         | 333       | 131       | 349       | 280       | 501       |
| .x:no difficulty | 9653      | 8687      | 8909      | 7987      | 6107      |
| 0.No             | 976       | 865       | 1675      | 1639      | 1281      |
| 1.Yes            | 4         | 4         | 7         | 11        | 15        |

How Constructed

RwRAFAANY indicates whether the respondent receives any formal care for difficulties with activities of daily living (ADL). The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. If the respondent reports having difficulty with an ADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with ADLs. The following relationship is considered to provide formal care: paid person.



Please note that for each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

RwRAFAANY is assigned a value of 0 if the respondent has difficulty with at least one ADL but receives no help with the activity from a formal caregiver, or does not receive any help at all. RwRAFAANY is assigned a value of 1 if the respondent has difficulty with at least one ADL and a formal caregiver helps with at least one of the activities. RwRAFAANY is assigned special missing value .x if the respondent has no difficulty with any ADLs. Don't know, refused, and other missing responses are assigned special missing values .d, .r, and .m, respectively. RwRAFAANY is assigned a blank missing (.) if the respondent did not participate in the current wave.

SwRAFAANY indicates whether the respondent's current wave's spouse receives any formal care for difficulties with ADLs, and its values are taken from RwRAFAANY. In addition to the special missing codes employed by RwRAFAANY, SwRAFAANY employs two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers in Waves 1 and 2, up to 8 caregivers in Waves 3 and 4, and up to 3 caregivers in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible in the Harmonized HRS and Harmonized MHAS. Please note that the Harmonized HRS includes categories for paid formal helpers and unpaid formal helpers, while the Harmonized MHAS only includes categories for paid formal helpers.

## MHAS Variables Used

### Wave 1:

|       |  |
|-------|--|
| H14   | help dressing                          |
| H15_3 | spouse helps walking                   |
| H15_4 | other helps walking                    |
| H16_3 | spouse helps bathing                   |
| H16_4 | other helps bathing                    |
| H17_3 | spouse helps eating                    |
| H17_4 | other helps eating                     |
| H18_3 | spouse helps getting in and out of bed |
| H18_4 | other helps getting in and out of bed  |
| H19_3 | spouse helps using toilet              |
| H19_4 | other helps using toilet               |

### Wave 1 Helper:

|     |                         |
|-----|-------------------------|
| H22 | kinship of helper       |
| H23 | roster number of helper |

### Wave 2:

|      |                                 |
|------|---------------------------------|
| H14  | someone help you to get dressed |
| H15E | spouse helps                    |
| H15F | additional person helps         |
| H16E | spouse helps                    |
| H16F | additional person helps         |
| H17E | spouse helps                    |
| H17F | additional person helps         |

|                |   |
|----------------|---|
| H18E           | spouse helps  |
| H18F           | additional person helps                                 |
| H19E           | spouse helps  |
| H19F           | additional person helps                                 |
| Wave 2 Helper: |   |
| H22            | relationship  |
| H23            | registration number                                     |
| Wave 3:        |   |
| H14_12         | Someone help you to get dressed                         |
| H15D_12        | Someone help you walk across room                       |
| H16D_12        | Someone help you to bathe or shower                     |
| H17D_12        | Does someone help you eat your food                     |
| H18D_12        | Does someone help you get into or out of bed            |
| H19D_12        | Does someone help you use toilet, get on off            |
| H22_1_12       | Relationship with helper for ADLs                       |
| H22_2_12       | Relationship with helper for ADLs                       |
| H22_3_12       | Relationship with helper for ADLs                       |
| H22_4_12       | Relationship with helper for ADLs                       |
| H22_5_12       | Relationship with helper for ADLs                       |
| H22_6_12       | Relationship with helper for ADLs                       |
| H22_7_12       | Relationship with helper for ADLs                       |
| H22_8_12       | Relationship with helper for ADLs                       |
| H23_1_12       | Registration number of helper for ADLs                  |
| H23_2_12       | Registration number of helper for ADLs                  |
| H23_3_12       | Registration number of helper for ADLs                  |
| H23_4_12       | Registration number of helper for ADLs                  |
| H23_5_12       | Registration number of helper for ADLs                  |
| H23_6_12       | Registration number of helper for ADLs                  |
| H23_7_12       | Registration number of helper for ADLs                  |
| H23_8_12       | Registration number of helper for ADLs                  |
| Wave 4:        |   |
| H14_15         | Does someone help respondent to get dressed             |
| H15D_15        | Does someone help respondent walking across a room      |
| H16D_15        | Does someone help respondent bathing or showering       |
| H17D_15        | Does someone help respondent eating                     |
| H18D_15        | Does someone help respondent getting in or out of bed   |
| H19D_15        | Does someone help respondent using the toilet           |
| H22_1_15       | Respondent's relationship with person helping with ADLs |
| H22_2_15       | Respondent's relationship with person helping with ADLs |
| H22_3_15       | Respondent's relationship with person helping with ADLs |
| H22_4_15       | Respondent's relationship with person helping with ADLs |
| H22_5_15       | Respondent's relationship with person helping with ADLs |
| H22_6_15       | Respondent's relationship with person helping with ADLs |
| H22_7_15       | Respondent's relationship with person helping with ADLs |
| H22_8_15       | Respondent's relationship with person helping with ADLs |
| H23_1_15       | Registration number of person helping with ADLs         |
| H23_2_15       | Registration number of person helping with ADLs         |
| H23_3_15       | Registration number of person helping with ADLs         |
| H23_4_15       | Registration number of person helping with ADLs         |
| H23_5_15       | Registration number of person helping with ADLs         |
| H23_6_15       | Registration number of person helping with ADLs         |
| H23_7_15       | Registration number of person helping with ADLs         |
| H23_8_15       | Registration number of person helping with ADLs         |
| Wave 5:        |   |
| H14_18         | Does someone help R to get dressed                      |
| H15D_18        | Does someone help R walking across a room               |
| H16D_18        | Does someone help R bathing or showering                |
| H17D_18        | Does someone help R eating                              |
| H18D_18        | Does someone help R getting in or out of bed            |
| H19D_18        | Does someone help R using the toilet                    |
| H22_1_18       | R's relationship with person helping with ADLs          |
| H22_2_18       | R's relationship with person helping with ADLs          |
| H22_3_18       | R's relationship with person helping with ADLs          |
| H23_1_18       | Registration number of person helping with ADLs         |

|          |   |
|----------|---|
| H23_2_18 | Registration number of person helping with ADLs |
| H23_3_18 | Registration number of person helping with ADLs |

|  |
|--|
| <b>Activities of Daily Living: Receives Formal Care from Paid Professional</b> |
|--|

| Wave | Variable       | Label  | Type  |
|------|----------------|--|-------|
| 1    | R1RAPFCARE     | r1rapfcare: w1 R receives formal care from paid professional | Categ |
| 2    | R2RAPFCARE     | r2rapfcare: w2 R receives formal care from paid professional | Categ |
| 3    | R3RAPFCARE     | r3rapfcare: w3 R receives formal care from paid professional | Categ |
| 4    | R4RAPFCARE     | r4rapfcare: w4 R receives formal care from paid professional | Categ |
| 5    | R5RAPFCARE     | r5rapfcare: w5 R receives formal care from paid professional | Categ |
|      |                |  |       |
| 1    | S1RAPFCARE     | s1rapfcare: w1 S receives formal care from paid professional | Categ |
| 2    | S2RAPFCARE     | s2rapfcare: w2 S receives formal care from paid professional | Categ |
| 3    | S3RAPFCARE     | s3rapfcare: w3 S receives formal care from paid professional | Categ |
| 4    | S4RAPFCARE     | s4rapfcare: w4 S receives formal care from paid professional | Categ |
| 5    | S5RAPFCARE     | s5rapfcare: w5 S receives formal care from paid professional | Categ |
|      |                |  |       |
| 1    | R1RAPFCAREN    | r1rapfcaren: w1 # paid professionals who help R with ADLs    | Cont  |
| 2    | R2RAPFCAREN    | r2rapfcaren: w2 # paid professionals who help R with ADLs    | Cont  |
| 3    | R3RAPFCAREN    | r3rapfcaren: w3 # paid professionals who help R with ADLs    | Cont  |
| 4    | R4RAPFCAREN    | r4rapfcaren: w4 # paid professionals who help R with ADLs    | Cont  |
| 5    | R5RAPFCAREN    | r5rapfcaren: w5 # paid professionals who help R with ADLs    | Cont  |
|      |                |  |       |
| 1    | S1RAPFCAREN    | s1rapfcaren: w1 # paid professionals who help S with ADLs    | Cont  |
| 2    | S2RAPFCAREN    | s2rapfcaren: w2 # paid professionals who help S with ADLs    | Cont  |
| 3    | S3RAPFCAREN    | s3rapfcaren: w3 # paid professionals who help S with ADLs    | Cont  |
| 4    | S4RAPFCAREN    | s4rapfcaren: w4 # paid professionals who help S with ADLs    | Cont  |
| 5    | S5RAPFCAREN    | s5rapfcaren: w5 # paid professionals who help S with ADLs    | Cont  |
|      |                |  |       |
| 1    | R1RAPFCAREDPM  | r1rapfcaredpm: w1 days/month paid professionals help R with  | Cont  |
| 2    | R2RAPFCAREDPM  | r2rapfcaredpm: w2 days/month paid professionals help R with  | Cont  |
| 3    | R3RAPFCAREDPM  | r3rapfcaredpm: w3 days/month paid professionals help R with  | Cont  |
| 4    | R4RAPFCAREDPM  | r4rapfcaredpm: w4 days/month paid professionals help R with  | Cont  |
| 5    | R5RAPFCAREDPM  | r5rapfcaredpm: w5 days/month paid professionals help R with  | Cont  |
|      |                |  |       |
| 1    | S1RAPFCAREDPM  | s1rapfcaredpm: w1 days/month paid professionals help S with  | Cont  |
| 2    | S2RAPFCAREDPM  | s2rapfcaredpm: w2 days/month paid professionals help S with  | Cont  |
| 3    | S3RAPFCAREDPM  | s3rapfcaredpm: w3 days/month paid professionals help S with  | Cont  |
| 4    | S4RAPFCAREDPM  | s4rapfcaredpm: w4 days/month paid professionals help S with  | Cont  |
| 5    | S5RAPFCAREDPM  | s5rapfcaredpm: w5 days/month paid professionals help S with  | Cont  |
|      |                |  |       |
| 1    | R1RAPFCAREDPMM | r1rapfcaredpmm: w1 R # paid professionals missing days of he | Cont  |
| 2    | R2RAPFCAREDPMM | r2rapfcaredpmm: w2 R # paid professionals missing days of he | Cont  |
| 3    | R3RAPFCAREDPMM | r3rapfcaredpmm: w3 R # paid professionals missing days of he | Cont  |
| 4    | R4RAPFCAREDPMM | r4rapfcaredpmm: w4 R # paid professionals missing days of he | Cont  |
| 5    | R5RAPFCAREDPMM | r5rapfcaredpmm: w5 R # paid professionals missing days of he | Cont  |
|      |                |  |       |
| 1    | S1RAPFCAREDPMM | s1rapfcaredpmm: w1 S # paid professionals missing days of he | Cont  |
| 2    | S2RAPFCAREDPMM | s2rapfcaredpmm: w2 S # paid professionals missing days of he | Cont  |
| 3    | S3RAPFCAREDPMM | s3rapfcaredpmm: w3 S # paid professionals missing days of he | Cont  |
| 4    | S4RAPFCAREDPMM | s4rapfcaredpmm: w4 S # paid professionals missing days of he | Cont  |
| 5    | S5RAPFCAREDPMM | s5rapfcaredpmm: w5 S # paid professionals missing days of he | Cont  |
|      |                |  |       |
| 1    | R1RAPFCAREHR   | r1rapfcarehr: w1 hours/day paid professionals help R with AD | Cont  |
| 2    | R2RAPFCAREHR   | r2rapfcarehr: w2 hours/day paid professionals help R with AD | Cont  |
| 3    | R3RAPFCAREHR   | r3rapfcarehr: w3 hours/day paid professionals help R with AD | Cont  |
| 4    | R4RAPFCAREHR   | r4rapfcarehr: w4 hours/day paid professionals help R with AD | Cont  |
| 5    | R5RAPFCAREHR   | r5rapfcarehr: w5 hours/day paid professionals help R with AD | Cont  |
|      |                |  |       |
| 1    | S1RAPFCAREHR   | s1rapfcarehr: w1 hours/day paid professionals help S with AD | Cont  |
| 2    | S2RAPFCAREHR   | s2rapfcarehr: w2 hours/day paid professionals help S with AD | Cont  |
| 3    | S3RAPFCAREHR   | s3rapfcarehr: w3 hours/day paid professionals help S with AD | Cont  |
| 4    | S4RAPFCAREHR   | s4rapfcarehr: w4 hours/day paid professionals help S with AD | Cont  |
| 5    | S5RAPFCAREHR   | s5rapfcarehr: w5 hours/day paid professionals help S with AD | Cont  |

|   |               |                       |  |      |
|---|---------------|-----------------------|--|------|
| 1 | R1RAPFCAREHRM | r1rapfcarehrm: w1 R # | paid professionals missing hours of he | Cont |
| 2 | R2RAPFCAREHRM | r2rapfcarehrm: w2 R # | paid professionals missing hours of he | Cont |
| 3 | R3RAPFCAREHRM | r3rapfcarehrm: w3 R # | paid professionals missing hours of he | Cont |
| 4 | R4RAPFCAREHRM | r4rapfcarehrm: w4 R # | paid professionals missing hours of he | Cont |
| 5 | R5RAPFCAREHRM | r5rapfcarehrm: w5 R # | paid professionals missing hours of he | Cont |
|   |               |                       |  |      |
| 1 | S1RAPFCAREHRM | s1rapfcarehrm: w1 S # | paid professionals missing hours of he | Cont |
| 2 | S2RAPFCAREHRM | s2rapfcarehrm: w2 S # | paid professionals missing hours of he | Cont |
| 3 | S3RAPFCAREHRM | s3rapfcarehrm: w3 S # | paid professionals missing hours of he | Cont |
| 4 | S4RAPFCAREHRM | s4rapfcarehrm: w4 S # | paid professionals missing hours of he | Cont |
| 5 | S5RAPFCAREHRM | s5rapfcarehrm: w5 S # | paid professionals missing hours of he | Cont |

## Descriptive Statistics

| Variable       | N    | Mean | Std Dev | Minimum | Maximum |
|----------------|------|------|---------|---------|---------|
|                |      |      |         |         |         |
| R1RAPFCARE     | 780  | 0.04 | 0.20    | 0.00    | 1.00    |
| R2RAPFCARE     | 793  | 0.04 | 0.19    | 0.00    | 1.00    |
| R3RAPFCARE     | 1172 | 0.03 | 0.17    | 0.00    | 1.00    |
| R4RAPFCARE     | 1297 | 0.04 | 0.21    | 0.00    | 1.00    |
| R5RAPFCARE     | 1380 | 0.04 | 0.19    | 0.00    | 1.00    |
|                |      |      |         |         |         |
| S1RAPFCARE     | 456  | 0.01 | 0.09    | 0.00    | 1.00    |
| S2RAPFCARE     | 461  | 0.01 | 0.09    | 0.00    | 1.00    |
| S3RAPFCARE     | 575  | 0.01 | 0.11    | 0.00    | 1.00    |
| S4RAPFCARE     | 638  | 0.02 | 0.13    | 0.00    | 1.00    |
| S5RAPFCARE     | 572  | 0.03 | 0.16    | 0.00    | 1.00    |
|                |      |      |         |         |         |
| R1RAPFCAREN    | 780  | 0.04 | 0.24    | 0.00    | 3.00    |
| R2RAPFCAREN    | 793  | 0.04 | 0.21    | 0.00    | 2.00    |
| R3RAPFCAREN    | 1172 | 0.03 | 0.19    | 0.00    | 2.00    |
| R4RAPFCAREN    | 1297 | 0.05 | 0.26    | 0.00    | 3.00    |
| R5RAPFCAREN    | 1380 | 0.05 | 0.28    | 0.00    | 3.00    |
|                |      |      |         |         |         |
| S1RAPFCAREN    | 456  | 0.01 | 0.09    | 0.00    | 1.00    |
| S2RAPFCAREN    | 461  | 0.01 | 0.09    | 0.00    | 1.00    |
| S3RAPFCAREN    | 575  | 0.01 | 0.11    | 0.00    | 1.00    |
| S4RAPFCAREN    | 638  | 0.02 | 0.17    | 0.00    | 3.00    |
| S5RAPFCAREN    | 572  | 0.03 | 0.21    | 0.00    | 3.00    |
|                |      |      |         |         |         |
| R1RAPFCAREDPM  | 780  | 1.22 | 6.75    | 0.00    | 90.00   |
| R2RAPFCAREDPM  | 793  | 1.12 | 5.97    | 0.00    | 60.00   |
| R3RAPFCAREDPM  | 1172 | 0.81 | 4.88    | 0.00    | 60.00   |
| R4RAPFCAREDPM  | 1297 | 1.12 | 6.25    | 0.00    | 90.00   |
| R5RAPFCAREDPM  | 1380 | 1.11 | 6.94    | 0.00    | 90.00   |
|                |      |      |         |         |         |
| S1RAPFCAREDPM  | 456  | 0.16 | 2.05    | 0.00    | 30.00   |
| S2RAPFCAREDPM  | 461  | 0.26 | 2.79    | 0.00    | 30.00   |
| S3RAPFCAREDPM  | 575  | 0.26 | 2.69    | 0.00    | 30.00   |
| S4RAPFCAREDPM  | 638  | 0.50 | 4.72    | 0.00    | 90.00   |
| S5RAPFCAREDPM  | 572  | 0.64 | 4.43    | 0.00    | 60.00   |
|                |      |      |         |         |         |
| R1RAPFCAREDPMM | 780  | 0.00 | 0.00    | 0.00    | 0.00    |
| R2RAPFCAREDPMM | 793  | 0.00 | 0.00    | 0.00    | 0.00    |
| R3RAPFCAREDPMM | 1172 | 0.00 | 0.00    | 0.00    | 0.00    |
| R4RAPFCAREDPMM | 1297 | 0.00 | 0.00    | 0.00    | 0.00    |
| R5RAPFCAREDPMM | 1380 | 0.00 | 0.00    | 0.00    | 0.00    |
|                |      |      |         |         |         |
| S1RAPFCAREDPMM | 456  | 0.00 | 0.00    | 0.00    | 0.00    |
| S2RAPFCAREDPMM | 461  | 0.00 | 0.00    | 0.00    | 0.00    |
| S3RAPFCAREDPMM | 575  | 0.00 | 0.00    | 0.00    | 0.00    |
| S4RAPFCAREDPMM | 638  | 0.00 | 0.00    | 0.00    | 0.00    |
| S5RAPFCAREDPMM | 572  | 0.00 | 0.00    | 0.00    | 0.00    |

|               |      |      |      |      |       |
|---------------|------|------|------|------|-------|
| R1RAPFCAREHR  | 780  | 0.52 | 3.22 | 0.00 | 48.00 |
| R2RAPFCAREHR  | 793  | 0.35 | 2.26 | 0.00 | 24.00 |
| R3RAPFCAREHR  | 1172 | 0.42 | 2.81 | 0.00 | 30.00 |
| R4RAPFCAREHR  | 1297 | 0.51 | 3.08 | 0.00 | 36.00 |
| R5RAPFCAREHR  | 1379 | 0.44 | 3.14 | 0.00 | 48.00 |
|               |      |      |      |      |       |
| S1RAPFCAREHR  | 456  | 0.10 | 1.29 | 0.00 | 24.00 |
| S2RAPFCAREHR  | 461  | 0.03 | 0.39 | 0.00 | 8.00  |
| S3RAPFCAREHR  | 575  | 0.22 | 2.24 | 0.00 | 24.00 |
| S4RAPFCAREHR  | 638  | 0.18 | 1.74 | 0.00 | 24.00 |
| S5RAPFCAREHR  | 572  | 0.29 | 2.54 | 0.00 | 48.00 |
|               |      |      |      |      |       |
| R1RAPFCAREHRM | 780  | 0.00 | 0.00 | 0.00 | 0.00  |
| R2RAPFCAREHRM | 793  | 0.00 | 0.00 | 0.00 | 0.00  |
| R3RAPFCAREHRM | 1172 | 0.00 | 0.00 | 0.00 | 0.00  |
| R4RAPFCAREHRM | 1297 | 0.00 | 0.00 | 0.00 | 0.00  |
| R5RAPFCAREHRM | 1380 | 0.00 | 0.03 | 0.00 | 1.00  |
|               |      |      |      |      |       |
| S1RAPFCAREHRM | 456  | 0.00 | 0.00 | 0.00 | 0.00  |
| S2RAPFCAREHRM | 461  | 0.00 | 0.00 | 0.00 | 0.00  |
| S3RAPFCAREHRM | 575  | 0.00 | 0.00 | 0.00 | 0.00  |
| S4RAPFCAREHRM | 638  | 0.00 | 0.00 | 0.00 | 0.00  |
| S5RAPFCAREHRM | 572  | 0.00 | 0.00 | 0.00 | 0.00  |

## Categorical Variable Codes

| Value-----          | R1RAPFCARE | R2RAPFCARE | R3RAPFCARE | R4RAPFCARE | R5RAPFCARE |
|---------------------|------------|------------|------------|------------|------------|
| .d:DK               | 1          |            | 1          | 6          | 2          |
| .h:no help received | 873        | 737        | 1785       | 1715       | 1654       |
| .m:Missing          | 40         | 30         |            | 40         | 18         |
| .r:Refuse           | 2          |            | 1          | 1          | 82         |
| .x:no difficulty    | 13490      | 12144      | 12764      | 11720      | 13978      |
| 0.No                | 749        | 764        | 1136       | 1240       | 1329       |
| 1.Yes               | 31         | 29         | 36         | 57         | 51         |

| Value-----          | S1RAPFCARE | S2RAPFCARE | S3RAPFCARE | S4RAPFCARE | S5RAPFCARE |
|---------------------|------------|------------|------------|------------|------------|
| .d:DK               |            |            | 1          | 5          |            |
| .h:no help received | 524        | 408        | 1107       | 1012       | 724        |
| .m:Missing          | 14         | 8          |            | 10         | 3          |
| .r:Refuse           | 1          |            |            |            | 55         |
| .u:Unmar            | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR            | 333        | 131        | 349        | 280        | 501        |
| .x:no difficulty    | 9653       | 8687       | 8909       | 7987       | 6107       |
| 0.No                | 452        | 457        | 568        | 627        | 557        |
| 1.Yes               | 4          | 4          | 7          | 11         | 15         |

## How Constructed

The following variables indicate whether paid formal caregivers help the respondent with any ADL needs. The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. If the respondent reports having difficulty with an ADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with ADLs. The information used to derive these variables is taken from the help files in Waves 1 and 2 and from the individual files in Waves 3 and forward. For each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

The following variables are coded as special missing value .x if the respondent reports no difficulty with any ADL, and are coded as special missing value .h if the respondent reports difficulty with an ADL but does not receive any help. Don't know, refused, or other missing responses are assigned special missing values .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwRAPFCARE, RwRAPFCAREN, RwRAPFCAREDPM, RwRAPFCAREDPMM, RwRAPFCAREHR, and RwRAPFCAREHRM include help from a paid person.

RwRAPFCARE indicates whether any paid professionals help the respondent with ADL needs. RwRAPFCAREN indicates the number of paid professionals who help the respondent with ADL needs. RwRAPFCARE is coded as 0 if no paid professionals help the respondent with ADLs; and is coded as 1 if at least one paid professional helps the respondent with ADLs.

RwRAPFCAREDPM indicates the number of total days per month paid professionals help the respondent with ADL needs. If the respondent reports receiving help every day from that paid professional, then a value of 30 is assumed. RwRAPFCAREDPM is the sum of days per month for all paid professional helpers, and so values can be over 30 days. RwRAPFCAREDPM is calculated as long as there is one non-missing value. RwRAPFCAREDPM is assigned a value of 0 if the respondent did not receive help from any paid professionals. RwRAPFCAREDPMM indicates the number of paid professionals who helped the respondent for whom no value of days was reported and was not accounted for in RwRAPFCAREDPM. RwRAPFCAREDPMM is assigned special missing value .m if the respondent was not helped by any paid professionals. RwRAPFCAREDPM and RwRAPFCAREDPMM are not available in waves 1 and 2.

RwRAPFCAREHR indicates the number of hours per day paid professionals help the respondent with ADL needs. Respondents are asked, on days paid professionals help, how many hours per day that is. If the respondent reports less than an hour for that paid professional, then a 1 is assumed. RwRAPFCAREHR is the sum of hours per day for all paid professional helpers, and so values can be over 24 hours. RwRAPFCAREHR is calculated as long as there is one non-missing value. RwRAPFCAREHR is assigned a value of 0 if the respondent did not receive help from any paid professionals. RwRAPFCAREHRM indicates the number of paid professionals who helped the respondent for whom no value of hours was reported and was not accounted for in RwRAPFCAREHR. RwRAPFCAREHRM is assigned special missing value .m if the respondent was not helped by any paid professionals. RwRAPFCAREHR and RwRAPFCAREHRM are not available in HRS waves 1 and 2. If the respondent participated in HRS wave 2, then RwRAPFCAREHR and RwRAPFCAREHRM are assigned special missing value .q in wave 2.

SwRAPFCARE, SwRAPFCAREN, SwRAPFCAREDPM, and SwRAPFCAREHR indicate whether the respondent's current wave's spouse receives help from paid professionals, the number, and the frequency with which, and their values are taken from RwRAPFCARE, RwRAPFCAREN, RwRAPFCAREDPM, and RwRAPFCAREHR. SwRAPFCAREDPMM and SwRAPFCAREHRM indicate the number of paid professionals who helped the respondent's current spouse for whom a value was not reported for the number of days and hours and are taken from RwRAPFCAREDPMM and RwRAPFCAREHRM. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers in Waves 1 and 2, up to 8 caregivers in Waves 3 and 4, and up to 3 caregivers in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible.

RwRAPFCARE in the Harmonized MHAS is also comparable to RwfAFAANY in the Harmonized HRS, indicating any formal care for ADLs, because the MHAS does not have a category for unpaid formal caregivers.

RwRAPFCAREDPW in the Harmonized HRS indicates the days per week the respondent received help, while RwRAPFCAREDPM in the Harmonized MHAS indicates the days per month the respondent received help. As such, adjustment must be made before comparison of these variables.

The HRS asks for up to 7 relationships of people who help with ADLs (dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet). The MHAS, in contrast, asks for the relationships of a varying number of people across waves who help with ADLs.

## MHAS Variables Used

### Wave 1:

|       |                                       |
|-------|---------------------------------------|
| H14   | help dressing                         |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H19_3 | spouse helps using toilet             |
| H19_4 | other helps using toilet              |

### Wave 1 Helper:

|     |                         |
|-----|-------------------------|
| H22 | kinship of helper       |
| H23 | roster number of helper |
| H24 | days of help            |
| H25 | hours of help           |

### Wave 2:

|      |                                 |
|------|---------------------------------|
| H14  | someone help you to get dressed |
| H15E | spouse helps                    |
| H15F | additional person helps         |
| H16E | spouse helps                    |
| H16F | additional person helps         |
| H17E | spouse helps                    |
| H17F | additional person helps         |
| H18E | spouse helps                    |
| H18F | additional person helps         |
| H19E | spouse helps                    |
| H19F | additional person helps         |

### Wave 2 Helper:

|     |   |
|-----|---|
| H22 | relationship                            |
| H23 | registration number                     |
| H24 | number of days (name) helped last month |
| H25 | number of hours during those days       |

### Wave 3:

|          |  |
|----------|--|
| H14_12   | Someone help you to get dressed              |
| H15D_12  | Someone help you walk across room            |
| H16D_12  | Someone help you to bathe or shower          |
| H17D_12  | Does someone help you eat your food          |
| H18D_12  | Does someone help you get into or out of bed |
| H19D_12  | Does someone help you use toilet, get on off |
| H22_1_12 | Relationship with helper for ADLs            |
| H22_2_12 | Relationship with helper for ADLs            |
| H22_3_12 | Relationship with helper for ADLs            |
| H22_4_12 | Relationship with helper for ADLs            |
| H22_5_12 | Relationship with helper for ADLs            |
| H22_6_12 | Relationship with helper for ADLs            |
| H22_7_12 | Relationship with helper for ADLs            |
| H22_8_12 | Relationship with helper for ADLs            |
| H23_1_12 | Registration number of helper for ADLs       |
| H23_2_12 | Registration number of helper for ADLs       |
| H23_3_12 | Registration number of helper for ADLs       |
| H23_4_12 | Registration number of helper for ADLs       |
| H23_5_12 | Registration number of helper for ADLs       |
| H23_6_12 | Registration number of helper for ADLs       |
| H23_7_12 | Registration number of helper for ADLs       |
| H23_8_12 | Registration number of helper for ADLs       |
| H24_1_12 | Number of days (name) helped last month      |



|          |   |
|----------|---|
| H24_2_12 | Number of days (name) helped last month         |
| H24_3_12 | Number of days (name) helped last month         |
| H24_4_12 | Number of days (name) helped last month         |
| H24_5_12 | Number of days (name) helped last month         |
| H24_6_12 | Number of days (name) helped last month         |
| H24_7_12 | Number of days (name) helped last month         |
| H24_8_12 | Number of days (name) helped last month         |
| H25_1_12 | Number of hours during those days (NAME) helped |
| H25_2_12 | Number of hours during those days (NAME) helped |
| H25_3_12 | Number of hours during those days (NAME) helped |
| H25_4_12 | Number of hours during those days (NAME) helped |
| H25_5_12 | Number of hours during those days (NAME) helped |
| H25_6_12 | Number of hours during those days (NAME) helped |
| H25_7_12 | Number of hours during those days (NAME) helped |
| H25_8_12 | Number of hours during those days (NAME) helped |

## Wave 4:

|          |   |
|----------|---|
| H14_15   | Does someone help respondent to get dressed             |
| H15D_15  | Does someone help respondent walking across a room      |
| H16D_15  | Does someone help respondent bathing or showering       |
| H17D_15  | Does someone help respondent eating                     |
| H18D_15  | Does someone help respondent getting in or out of bed   |
| H19D_15  | Does someone help respondent using the toilet           |
| H22_1_15 | Respondent's relationship with person helping with ADLs |
| H22_2_15 | Respondent's relationship with person helping with ADLs |
| H22_3_15 | Respondent's relationship with person helping with ADLs |
| H22_4_15 | Respondent's relationship with person helping with ADLs |
| H22_5_15 | Respondent's relationship with person helping with ADLs |
| H22_6_15 | Respondent's relationship with person helping with ADLs |
| H22_7_15 | Respondent's relationship with person helping with ADLs |
| H22_8_15 | Respondent's relationship with person helping with ADLs |
| H23_1_15 | Registration number of person helping with ADLs         |
| H23_2_15 | Registration number of person helping with ADLs         |
| H23_3_15 | Registration number of person helping with ADLs         |
| H23_4_15 | Registration number of person helping with ADLs         |
| H23_5_15 | Registration number of person helping with ADLs         |
| H23_6_15 | Registration number of person helping with ADLs         |
| H23_7_15 | Registration number of person helping with ADLs         |
| H23_8_15 | Registration number of person helping with ADLs         |
| H24_1_15 | Number of days the person helped during last month      |
| H24_2_15 | Number of days the person helped during last month      |
| H24_3_15 | Number of days the person helped during last month      |
| H24_4_15 | Number of days the person helped during last month      |
| H24_5_15 | Number of days the person helped during last month      |
| H24_6_15 | Number of days the person helped during last month      |
| H24_7_15 | Number of days the person helped during last month      |
| H24_8_15 | Number of days the person helped during last month      |
| H25_1_15 | Number of hours during those days that the person helps |
| H25_2_15 | Number of hours during those days that the person helps |
| H25_3_15 | Number of hours during those days that the person helps |
| H25_4_15 | Number of hours during those days that the person helps |
| H25_5_15 | Number of hours during those days that the person helps |
| H25_6_15 | Number of hours during those days that the person helps |
| H25_7_15 | Number of hours during those days that the person helps |
| H25_8_15 | Number of hours during those days that the person helps |

## Wave 5:

|          |  |
|----------|--|
| H14_18   | Does someone help R to get dressed             |
| H15D_18  | Does someone help R walking across a room      |
| H16D_18  | Does someone help R bathing or showering       |
| H17D_18  | Does someone help R eating                     |
| H18D_18  | Does someone help R getting in or out of bed   |
| H19D_18  | Does someone help R using the toilet           |
| H22_1_18 | R's relationship with person helping with ADLs |
| H22_2_18 | R's relationship with person helping with ADLs |
| H22_3_18 | R's relationship with person helping with ADLs |

|          |   |
|----------|---|
| H23_1_18 | Registration number of person helping with ADLs         |
| H23_2_18 | Registration number of person helping with ADLs         |
| H23_3_18 | Registration number of person helping with ADLs         |
| H24_1_18 | Number of days the person helped during last month      |
| H24_2_18 | Number of days the person helped during last month      |
| H24_3_18 | Number of days the person helped during last month      |
| H25_1_18 | Number of hours during those days that the person helps |
| H25_2_18 | Number of hours during those days that the person helps |
| H25_3_18 | Number of hours during those days that the person helps |

Instrumental Activities of Daily Living: Whether Receives Any Care

| Wave | Variable | Label                                      | Type  |
|------|----------|--|-------|
| 1    | R1RICANY | r1ricany: w1 R receives any care for IADLs | Categ |
| 2    | R2RICANY | r2ricany: w2 R receives any care for IADLs | Categ |
| 3    | R3RICANY | r3ricany: w3 R receives any care for IADLs | Categ |
| 4    | R4RICANY | r4ricany: w4 R receives any care for IADLs | Categ |
| 5    | R5RICANY | r5ricany: w5 R receives any care for IADLs | Categ |
| 1    | S1RICANY | s1ricany: w1 S receives any care for IADLs | Categ |
| 2    | S2RICANY | s2ricany: w2 S receives any care for IADLs | Categ |
| 3    | S3RICANY | s3ricany: w3 S receives any care for IADLs | Categ |
| 4    | S4RICANY | s4ricany: w4 S receives any care for IADLs | Categ |
| 5    | S5RICANY | s5ricany: w5 S receives any care for IADLs | Categ |

Descriptive Statistics

| Variable | N    | Mean | Std Dev | Minimum | Maximum |
|----------|------|------|---------|---------|---------|
| R1RICANY | 1684 | 0.84 | 0.37    | 0.00    | 1.00    |
| R2RICANY | 1504 | 0.86 | 0.34    | 0.00    | 1.00    |
| R3RICANY | 2321 | 0.72 | 0.45    | 0.00    | 1.00    |
| R4RICANY | 2492 | 0.76 | 0.43    | 0.00    | 1.00    |
| R5RICANY | 1897 | 0.79 | 0.41    | 0.00    | 1.00    |
| S1RICANY | 1104 | 0.86 | 0.35    | 0.00    | 1.00    |
| S2RICANY | 998  | 0.80 | 0.40    | 0.00    | 1.00    |
| S3RICANY | 1418 | 0.66 | 0.48    | 0.00    | 1.00    |
| S4RICANY | 1375 | 0.70 | 0.46    | 0.00    | 1.00    |
| S5RICANY | 843  | 0.76 | 0.43    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----                    | R1RICANY | R2RICANY | R3RICANY | R4RICANY | R5RICANY |
|-------------------------------|----------|----------|----------|----------|----------|
| .d:DK                         |          |          | 1        | 5        |          |
| .m:Missing                    | 38       | 39       |          | 40       | 17       |
| .p:Proxy interview, not asked | 1032     | 1161     | 1275     | 929      | 1328     |
| .r:Refuse                     | 13       | 1        | 1        | 1        | 12       |
| .x:no difficulty              | 12419    | 10999    | 12125    | 11312    | 13860    |
| 0.No                          | 267      | 204      | 658      | 605      | 406      |
| 1.Yes                         | 1417     | 1300     | 1663     | 1887     | 1491     |
| Value-----                    | S1RICANY | S2RICANY | S3RICANY | S4RICANY | S5RICANY |
| .d:DK                         |          |          | 1        | 5        |          |
| .m:Missing                    | 13       | 13       |          | 10       | 2        |
| .p:Proxy interview, not asked | 660      | 814      | 726      | 470      | 560      |
| .r:Refuse                     | 8        | 1        |          |          | 6        |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| .x:no difficulty              | 8863     | 7738     | 8447     | 7792     | 6050     |
| 0.No                          | 154      | 202      | 487      | 406      | 205      |
| 1.Yes                         | 950      | 796      | 931      | 969      | 638      |

How Constructed

RwRICANY indicates whether the respondent receives any care for difficulties with instrumental activities of daily living (IADL). If the respondent reports having difficulty with an IADL, then they are asked whether someone helps them with that activity. The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. RwRICANY is assigned a value of 0 if the respondent has difficulty with at least one IADL but receives no help with the activity. RwRICANY is assigned a value of 1 if the respondent has difficulty with at least one IADL and someone helps with at least one of the activities. RwRICANY is assigned special missing value .x if the

respondent has no difficulty with any IADLs. Don't know, refused, and other missing responses are assigned special missing values .d, .r, and .m, respectively. RWRICANY is assigned a blank missing (.) if the respondent did not participate in the current wave.

SwRICANY indicates whether the respondent's current wave's spouse receives any care for difficulties with IADLs, and its values are taken from RWRICANY. In addition to the special missing codes employed by RWRICANY, SwRICANY employs two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

In the HRS, if the respondent reports that they "can't do" or "don't do" the activity or if they have difficulty that is not the result of a health or memory problem, then they are not asked whether they receive help with that activity. Respondents in the MHAS, however, are asked whether they receive help with the activity if they report that they "can't do", "don't do", or have difficulty with the activity, regardless of whether it is the result of a health or memory problem.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, RWRICANY in the Harmonized HRS also includes help using the telephone, whereas RWRICANY in the Harmonized MHAS does not include help using the telephone.

## MHAS Variables Used

### Wave 1:

|       |                                      |
|-------|--------------------------------------|
| H26_3 | spouse helps with hot meal           |
| H26_4 | someone helps with hot meal          |
| H27_3 | spouse helps with shopping           |
| H27_4 | someone helps with shopping          |
| H28_3 | spouse helps with taking medication  |
| H28_4 | someone helps with taking medication |
| H29_3 | spouse helps with managing money     |
| H29_4 | someone helps with managing money    |

### Wave 2:

|      |                         |
|------|-------------------------|
| H26D | spouse helps            |
| H26E | additional person helps |
| H27D | spouse helps            |
| H27E | additional person helps |
| H28D | spouse helps            |
| H28E | additional person helps |
| H29D | spouse helps            |
| H29E | additional person helps |

### Wave 3:

|          |  |
|----------|--|
| H26C_12  | Does anyone help you prepare a hot meal    |
| H27C_12  | Does anyone help you shop for groceries    |
| H28C_12  | Does anyone help you take medications      |
| H29C_12  | Does anyone one help you manage your money |
| H32_1_12 | Relationship with helper for IADLs         |
| H32_2_12 | Relationship with helper for IADLs         |
| H32_3_12 | Relationship with helper for IADLs         |
| H32_4_12 | Relationship with helper for IADLs         |
| H32_5_12 | Relationship with helper for IADLs         |
| H32_6_12 | Relationship with helper for IADLs         |
| H32_7_12 | Relationship with helper for IADLs         |
| H32_8_12 | Relationship with helper for IADLs         |
| H33_1_12 | Registration number of helper for IADLs    |
| H33_2_12 | Registration number of helper for ADLs     |
| H33_3_12 | Registration number of helper for IADLs    |
| H33_4_12 | Registration number of helper for IADLs    |

|          |   |
|----------|---|
| H33_5_12 | Registration number of helper for IADLs |
| H33_6_12 | Registration number of helper for IADLs |
| H33_7_12 | Registration number of helper for IADLs |
| H33_8_12 | Registration number of helper for IADLs |

## Wave 4:

|          |   |
|----------|---|
| H26C_15  | Does someone help respondent to prepare a hot meal      |
| H27C_15  | Does someone help respondent to shop for groceries      |
| H28C_15  | Does someone help respondent to take medications        |
| H29C_15  | Does someone help respondent to manage his/her money    |
| H32_1_15 | Respondent's relationship with person helping with IADL |
| H32_2_15 | Respondent's relationship with person helping with IADL |
| H32_3_15 | Respondent's relationship with person helping with IADL |
| H32_4_15 | Respondent's relationship with person helping with IADL |
| H32_5_15 | Respondent's relationship with person helping with IADL |
| H32_6_15 | Respondent's relationship with person helping with IADL |
| H32_7_15 | Respondent's relationship with person helping with IADL |
| H32_8_15 | Respondent's relationship with person helping with IADL |
| H33_1_15 | Registration number of person helping with IADLs        |
| H33_2_15 | Registration number of person helping with IADLs        |
| H33_3_15 | Registration number of person helping with IADLs        |
| H33_4_15 | Registration number of person helping with IADLs        |
| H33_5_15 | Registration number of person helping with IADLs        |
| H33_6_15 | Registration number of person helping with IADLs        |
| H33_7_15 | Registration number of person helping with IADLs        |
| H33_8_15 | Registration number of person helping with IADLs        |

## Wave 5:

|          |  |
|----------|--|
| H26C_18  | Does someone help R to prepare a hot meal        |
| H27C_18  | Does someone help R to shop for groceries        |
| H28C_18  | Does someone help R to take medications          |
| H29C_18  | Does someone help R to manage his/her money      |
| H32_1_18 | R's relationship with person helping with IADLs  |
| H32_2_18 | R's relationship with person helping with IADLs  |
| H32_3_18 | R's relationship with person helping with IADLs  |
| H33_1_18 | Registration number of person helping with IADLs |
| H33_2_18 | Registration number of person helping with IADLs |
| H33_3_18 | Registration number of person helping with IADLs |

Instrumental Activities of Daily Living: Whether Receives Any Informal Care

| Wave | Variable  | Label  | Type  |
|------|-----------|--|-------|
| 1    | R1RICAANY | r1ricaany: w1 R receives any informal care for IADLs | Categ |
| 2    | R2RICAANY | r2ricaany: w2 R receives any informal care for IADLs | Categ |
| 3    | R3RICAANY | r3ricaany: w3 R receives any informal care for IADLs | Categ |
| 4    | R4RICAANY | r4ricaany: w4 R receives any informal care for IADLs | Categ |
| 5    | R5RICAANY | r5ricaany: w5 R receives any informal care for IADLs | Categ |
| 1    | S1RICAANY | s1ricaany: w1 S receives any informal care for IADLs | Categ |
| 2    | S2RICAANY | s2ricaany: w2 S receives any informal care for IADLs | Categ |
| 3    | S3RICAANY | s3ricaany: w3 S receives any informal care for IADLs | Categ |
| 4    | S4RICAANY | s4ricaany: w4 S receives any informal care for IADLs | Categ |
| 5    | S5RICAANY | s5ricaany: w5 S receives any informal care for IADLs | Categ |

Descriptive Statistics

| Variable  | N    | Mean | Std Dev | Minimum | Maximum |
|-----------|------|------|---------|---------|---------|
| R1RICAANY | 1684 | 0.84 | 0.37    | 0.00    | 1.00    |
| R2RICAANY | 1513 | 0.83 | 0.38    | 0.00    | 1.00    |
| R3RICAANY | 2321 | 0.72 | 0.45    | 0.00    | 1.00    |
| R4RICAANY | 2492 | 0.76 | 0.43    | 0.00    | 1.00    |
| R5RICAANY | 1897 | 0.77 | 0.42    | 0.00    | 1.00    |
| S1RICAANY | 1104 | 0.86 | 0.35    | 0.00    | 1.00    |
| S2RICAANY | 1005 | 0.75 | 0.43    | 0.00    | 1.00    |
| S3RICAANY | 1418 | 0.66 | 0.48    | 0.00    | 1.00    |
| S4RICAANY | 1375 | 0.70 | 0.46    | 0.00    | 1.00    |
| S5RICAANY | 843  | 0.75 | 0.43    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----                    | R1RICAANY | R2RICAANY | R3RICAANY | R4RICAANY | R5RICAANY |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         |           |           | 1         | 5         |           |
| .m:Missing                    | 38        | 30        |           | 40        | 17        |
| .p:Proxy interview, not asked | 1032      | 1161      | 1275      | 929       | 1328      |
| .r:Refuse                     | 13        | 1         | 1         | 1         | 12        |
| .x:no difficulty              | 12419     | 10999     | 12125     | 11312     | 13860     |
| 0.No                          | 268       | 256       | 658       | 605       | 427       |
| 1.Yes                         | 1416      | 1257      | 1663      | 1887      | 1470      |

| Value-----                    | S1RICAANY | S2RICAANY | S3RICAANY | S4RICAANY | S5RICAANY |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         |           |           | 1         | 5         |           |
| .m:Missing                    | 13        | 6         |           | 10        | 2         |
| .p:Proxy interview, not asked | 660       | 814       | 726       | 470       | 560       |
| .r:Refuse                     | 8         | 1         |           |           | 6         |
| .u:Unmar                      | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      | 333       | 131       | 349       | 280       | 501       |
| .x:no difficulty              | 8863      | 7738      | 8447      | 7792      | 6050      |
| 0.No                          | 155       | 249       | 487       | 406       | 210       |
| 1.Yes                         | 949       | 756       | 931       | 969       | 633       |

How Constructed

RwRICAANY indicates whether the respondent receives any informal care for difficulties with instrumental activities of daily living (IADL). The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. If the respondent reports having difficulty with an IADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with IADLs. The following relationships are

considered to provide informal care: spouse, child, child-in-law, grandchild, parent, other relative, other person.

Please note that for each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

RwRICAANY is assigned a value of 0 if the respondent has difficulty with at least one IADL but receives no help with the activity from an informal caregiver, or does not receive any help at all. RwRICAANY is assigned a value of 1 if the respondent has difficulty with at least one IADL and an informal caregiver helps with at least one of the activities. RwRICAANY is assigned special missing value .x if the respondent has no difficulty with any IADLs. Don't know, refused, and other missing responses are assigned special missing values .d, .r, and .m, respectively. RwRICAANY is assigned a blank missing (.) if the respondent did not participate in the current wave.

SwRICAANY indicates whether the respondent's current wave's spouse receives any informal care for difficulties with IADLs, and its values are taken from RwRICAANY. In addition to the special missing codes employed by RwRICAANY, SwRICAANY employs two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers in Waves 1 and 2, up to 8 caregivers in Waves 3 and 4, and up to 3 caregivers in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, RwRICAANY in the Harmonized HRS also includes help using the telephone, whereas RwRICAANY in the Harmonized MHAS does not include help using the telephone.

## MHAS Variables Used

### Wave 1:

|       |                                      |
|-------|--------------------------------------|
| H26_3 | spouse helps with hot meal           |
| H26_4 | someone helps with hot meal          |
| H27_3 | spouse helps with shopping           |
| H27_4 | someone helps with shopping          |
| H28_3 | spouse helps with taking medication  |
| H28_4 | someone helps with taking medication |
| H29_3 | spouse helps with managing money     |
| H29_4 | someone helps with managing money    |

### Wave 1 Helper:

|     |                         |
|-----|-------------------------|
| H32 | kinship of helper       |
| H33 | roster number of helper |
| H34 | days of help            |
| H35 | hours of help           |

### Wave 2:

|      |                         |
|------|-------------------------|
| H26D | spouse helps            |
| H26E | additional person helps |
| H27D | spouse helps            |

|                |   |
|----------------|---|
| H27E           | additional person helps                                 |
| H28D           | spouse helps  |
| H28E           | additional person helps                                 |
| H29D           | spouse helps  |
| H29E           | additional person helps                                 |
| Wave 2 Helper: |   |
| H32            | relationship  |
| H33            | registration number                                     |
| H34            | number of days (name) helped last month                 |
| H35            | how many hours during those days                        |
| Wave 3:        |   |
| H26C_12        | Does anyone help you prepare a hot meal                 |
| H27C_12        | Does anyone help you shop for groceries                 |
| H28C_12        | Does anyone help you take medications                   |
| H29C_12        | Does anyone one help you manage your money              |
| H32_1_12       | Relationship with helper for IADLs                      |
| H32_2_12       | Relationship with helper for IADLs                      |
| H32_3_12       | Relationship with helper for IADLs                      |
| H32_4_12       | Relationship with helper for IADLs                      |
| H32_5_12       | Relationship with helper for IADLs                      |
| H32_6_12       | Relationship with helper for IADLs                      |
| H32_7_12       | Relationship with helper for IADLs                      |
| H32_8_12       | Relationship with helper for IADLs                      |
| H33_1_12       | Registration number of helper for IADLs                 |
| H33_2_12       | Registration number of helper for ADLs                  |
| H33_3_12       | Registration number of helper for IADLs                 |
| H33_4_12       | Registration number of helper for IADLs                 |
| H33_5_12       | Registration number of helper for IADLs                 |
| H33_6_12       | Registration number of helper for IADLs                 |
| H33_7_12       | Registration number of helper for IADLs                 |
| H33_8_12       | Registration number of helper for IADLs                 |
| Wave 4:        |   |
| H26C_15        | Does someone help respondent to prepare a hot meal      |
| H27C_15        | Does someone help respondent to shop for groceries      |
| H28C_15        | Does someone help respondent to take medications        |
| H29C_15        | Does someone help respondent to manage his/her money    |
| H32_1_15       | Respondent's relationship with person helping with IADL |
| H32_2_15       | Respondent's relationship with person helping with IADL |
| H32_3_15       | Respondent's relationship with person helping with IADL |
| H32_4_15       | Respondent's relationship with person helping with IADL |
| H32_5_15       | Respondent's relationship with person helping with IADL |
| H32_6_15       | Respondent's relationship with person helping with IADL |
| H32_7_15       | Respondent's relationship with person helping with IADL |
| H32_8_15       | Respondent's relationship with person helping with IADL |
| H33_1_15       | Registration number of person helping with IADLs        |
| H33_2_15       | Registration number of person helping with IADLs        |
| H33_3_15       | Registration number of person helping with IADLs        |
| H33_4_15       | Registration number of person helping with IADLs        |
| H33_5_15       | Registration number of person helping with IADLs        |
| H33_6_15       | Registration number of person helping with IADLs        |
| H33_7_15       | Registration number of person helping with IADLs        |
| H33_8_15       | Registration number of person helping with IADLs        |
| Wave 5:        |   |
| H26C_18        | Does someone help R to prepare a hot meal               |
| H27C_18        | Does someone help R to shop for groceries               |
| H28C_18        | Does someone help R to take medications                 |
| H29C_18        | Does someone help R to manage his/her money             |
| H32_1_18       | R's relationship with person helping with IADLs         |
| H32_2_18       | R's relationship with person helping with IADLs         |
| H32_3_18       | R's relationship with person helping with IADLs         |
| H33_1_18       | Registration number of person helping with IADLs        |
| H33_2_18       | Registration number of person helping with IADLs        |
| H33_3_18       | Registration number of person helping with IADLs        |



|  |
|--|
| <b>Instrumental Activities of Daily Living: Receives Informal Care from Spouse</b> |
|--|

| Wave | Variable      | Label  | Type  |
|------|---------------|--|-------|
| 1    | R1RISCARE     | r1riscare: w1 R receives informal care from spouse for IADLs | Categ |
| 2    | R2RISCARE     | r2riscare: w2 R receives informal care from spouse for IADLs | Categ |
| 3    | R3RISCARE     | r3riscare: w3 R receives informal care from spouse for IADLs | Categ |
| 4    | R4RISCARE     | r4riscare: w4 R receives informal care from spouse for IADLs | Categ |
| 5    | R5RISCARE     | r5riscare: w5 R receives informal care from spouse for IADLs | Categ |
|      |               |  |       |
| 1    | S1RISCARE     | s1riscare: w1 S receives informal care from spouse for IADLs | Categ |
| 2    | S2RISCARE     | s2riscare: w2 S receives informal care from spouse for IADLs | Categ |
| 3    | S3RISCARE     | s3riscare: w3 S receives informal care from spouse for IADLs | Categ |
| 4    | S4RISCARE     | s4riscare: w4 S receives informal care from spouse for IADLs | Categ |
| 5    | S5RISCARE     | s5riscare: w5 S receives informal care from spouse for IADLs | Categ |
|      |               |  |       |
| 2    | R2RISCAREDPM  | r2riscaredpm: w2 days/month spouse helps R with IADLs        | Cont  |
| 3    | R3RISCAREDPM  | r3riscaredpm: w3 days/month spouse helps R with IADLs        | Cont  |
| 4    | R4RISCAREDPM  | r4riscaredpm: w4 days/month spouse helps R with IADLs        | Cont  |
| 5    | R5RISCAREDPM  | r5riscaredpm: w5 days/month spouse helps R with IADLs        | Cont  |
|      |               |  |       |
| 2    | S2RISCAREDPM  | s2riscaredpm: w2 days/month spouse helps S with IADLs        | Cont  |
| 3    | S3RISCAREDPM  | s3riscaredpm: w3 days/month spouse helps S with IADLs        | Cont  |
| 4    | S4RISCAREDPM  | s4riscaredpm: w4 days/month spouse helps S with IADLs        | Cont  |
| 5    | S5RISCAREDPM  | s5riscaredpm: w5 days/month spouse helps S with IADLs        | Cont  |
|      |               |  |       |
| 2    | R2RISCAREDPMM | r2riscaredpmm: w2 R # spouse missing days of help for IADLs  | Cont  |
| 3    | R3RISCAREDPMM | r3riscaredpmm: w3 R # spouse missing days of help for IADLs  | Cont  |
| 4    | R4RISCAREDPMM | r4riscaredpmm: w4 R # spouse missing days of help for IADLs  | Cont  |
| 5    | R5RISCAREDPMM | r5riscaredpmm: w5 R # spouse missing days of help for IADLs  | Cont  |
|      |               |  |       |
| 2    | S2RISCAREDPMM | s2riscaredpmm: w2 S # spouse missing days of help for IADLs  | Cont  |
| 3    | S3RISCAREDPMM | s3riscaredpmm: w3 S # spouse missing days of help for IADLs  | Cont  |
| 4    | S4RISCAREDPMM | s4riscaredpmm: w4 S # spouse missing days of help for IADLs  | Cont  |
| 5    | S5RISCAREDPMM | s5riscaredpmm: w5 S # spouse missing days of help for IADLs  | Cont  |
|      |               |  |       |
| 2    | R2RISCAREHR   | r2riscarehr: w2 hours/day spouse helps R with IADLs          | Cont  |
| 3    | R3RISCAREHR   | r3riscarehr: w3 hours/day spouse helps R with IADLs          | Cont  |
| 4    | R4RISCAREHR   | r4riscarehr: w4 hours/day spouse helps R with IADLs          | Cont  |
| 5    | R5RISCAREHR   | r5riscarehr: w5 hours/day spouse helps R with IADLs          | Cont  |
|      |               |  |       |
| 2    | S2RISCAREHR   | s2riscarehr: w2 hours/day spouse helps S with IADLs          | Cont  |
| 3    | S3RISCAREHR   | s3riscarehr: w3 hours/day spouse helps S with IADLs          | Cont  |
| 4    | S4RISCAREHR   | s4riscarehr: w4 hours/day spouse helps S with IADLs          | Cont  |
| 5    | S5RISCAREHR   | s5riscarehr: w5 hours/day spouse helps S with IADLs          | Cont  |
|      |               |  |       |
| 2    | R2RISCAREHRM  | r2riscarehrm: w2 R # spouse missing hours of help for IADLs  | Cont  |
| 3    | R3RISCAREHRM  | r3riscarehrm: w3 R # spouse missing hours of help for IADLs  | Cont  |
| 4    | R4RISCAREHRM  | r4riscarehrm: w4 R # spouse missing hours of help for IADLs  | Cont  |
| 5    | R5RISCAREHRM  | r5riscarehrm: w5 R # spouse missing hours of help for IADLs  | Cont  |
|      |               |  |       |
| 2    | S2RISCAREHRM  | s2riscarehrm: w2 S # spouse missing hours of help for IADLs  | Cont  |
| 3    | S3RISCAREHRM  | s3riscarehrm: w3 S # spouse missing hours of help for IADLs  | Cont  |
| 4    | S4RISCAREHRM  | s4riscarehrm: w4 S # spouse missing hours of help for IADLs  | Cont  |
| 5    | S5RISCAREHRM  | s5riscarehrm: w5 S # spouse missing hours of help for IADLs  | Cont  |

### Descriptive Statistics

| Variable  | N    | Mean | Std Dev | Minimum | Maximum |
|-----------|------|------|---------|---------|---------|
| R1RISCARE | 1417 | 0.57 | 0.50    | 0.00    | 1.00    |
| R2RISCARE | 1309 | 0.42 | 0.49    | 0.00    | 1.00    |

|               |      |       |       |      |       |
|---------------|------|-------|-------|------|-------|
| R3RISCARE     | 1663 | 0.36  | 0.48  | 0.00 | 1.00  |
| R4RISCARE     | 1887 | 0.32  | 0.47  | 0.00 | 1.00  |
| R5RISCARE     | 1491 | 0.21  | 0.41  | 0.00 | 1.00  |
| S1RISCARE     | 950  | 0.84  | 0.37  | 0.00 | 1.00  |
| S2RISCARE     | 803  | 0.68  | 0.47  | 0.00 | 1.00  |
| S3RISCARE     | 931  | 0.63  | 0.48  | 0.00 | 1.00  |
| S4RISCARE     | 969  | 0.61  | 0.49  | 0.00 | 1.00  |
| S5RISCARE     | 638  | 0.39  | 0.49  | 0.00 | 1.00  |
| R2RISCAREDPM  | 1308 | 11.00 | 14.19 | 0.00 | 30.00 |
| R3RISCAREDPM  | 1658 | 8.78  | 13.25 | 0.00 | 30.00 |
| R4RISCAREDPM  | 1884 | 6.95  | 12.11 | 0.00 | 30.00 |
| R5RISCAREDPM  | 1474 | 5.27  | 11.25 | 0.00 | 30.00 |
| S2RISCAREDPM  | 802  | 17.82 | 14.30 | 0.00 | 30.00 |
| S3RISCAREDPM  | 927  | 15.38 | 14.36 | 0.00 | 30.00 |
| S4RISCAREDPM  | 966  | 13.24 | 14.02 | 0.00 | 30.00 |
| S5RISCAREDPM  | 622  | 9.92  | 13.92 | 0.00 | 30.00 |
| R2RISCAREDPMM | 1309 | 0.00  | 0.03  | 0.00 | 1.00  |
| R3RISCAREDPMM | 1663 | 0.00  | 0.05  | 0.00 | 1.00  |
| R4RISCAREDPMM | 1887 | 0.00  | 0.04  | 0.00 | 1.00  |
| R5RISCAREDPMM | 1491 | 0.01  | 0.11  | 0.00 | 1.00  |
| S2RISCAREDPMM | 803  | 0.00  | 0.04  | 0.00 | 1.00  |
| S3RISCAREDPMM | 931  | 0.00  | 0.07  | 0.00 | 1.00  |
| S4RISCAREDPMM | 969  | 0.00  | 0.06  | 0.00 | 1.00  |
| S5RISCAREDPMM | 638  | 0.03  | 0.16  | 0.00 | 1.00  |
| R2RISCAREHR   | 1307 | 1.94  | 4.00  | 0.00 | 24.00 |
| R3RISCAREHR   | 1648 | 2.94  | 6.35  | 0.00 | 24.00 |
| R4RISCAREHR   | 1880 | 1.44  | 3.51  | 0.00 | 24.00 |
| R5RISCAREHR   | 1468 | 1.18  | 3.81  | 0.00 | 24.00 |
| S2RISCAREHR   | 801  | 3.13  | 4.65  | 0.00 | 24.00 |
| S3RISCAREHR   | 917  | 5.19  | 7.75  | 0.00 | 24.00 |
| S4RISCAREHR   | 962  | 2.75  | 4.45  | 0.00 | 24.00 |
| S5RISCAREHR   | 617  | 2.39  | 5.39  | 0.00 | 24.00 |
| R2RISCAREHRM  | 1309 | 0.00  | 0.04  | 0.00 | 1.00  |
| R3RISCAREHRM  | 1663 | 0.01  | 0.09  | 0.00 | 1.00  |
| R4RISCAREHRM  | 1887 | 0.00  | 0.06  | 0.00 | 1.00  |
| R5RISCAREHRM  | 1491 | 0.02  | 0.12  | 0.00 | 1.00  |
| S2RISCAREHRM  | 803  | 0.00  | 0.05  | 0.00 | 1.00  |
| S3RISCAREHRM  | 931  | 0.02  | 0.12  | 0.00 | 1.00  |
| S4RISCAREHRM  | 969  | 0.01  | 0.08  | 0.00 | 1.00  |
| S5RISCAREHRM  | 638  | 0.03  | 0.18  | 0.00 | 1.00  |

## Categorical Variable Codes

| Value-----                    | R1RISCARE | R2RISCARE | R3RISCARE | R4RISCARE | R5RISCARE |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         |           |           | 1         | 5         |           |
| .h:no help received           | 267       | 204       | 658       | 605       | 406       |
| .m:Missing                    | 38        | 30        |           | 40        | 17        |
| .p:Proxy interview, not asked | 1032      | 1161      | 1275      | 929       | 1328      |
| .r:Refuse                     | 13        | 1         | 1         | 1         | 12        |
| .x:no difficulty              | 12419     | 10999     | 12125     | 11312     | 13860     |
| 0.No                          | 607       | 762       | 1067      | 1279      | 1176      |
| 1.Yes                         | 810       | 547       | 596       | 608       | 315       |
| Value-----                    | S1RISCARE | S2RISCARE | S3RISCARE | S4RISCARE | S5RISCARE |
| .d:DK                         |           |           | 1         | 5         |           |
| .h:no help received           | 154       | 202       | 487       | 406       | 205       |

|                               |  |      |      |      |      |      |
|-------------------------------|--|------|------|------|------|------|
| .m:Missing                    |  | 13   | 6    |      | 10   | 2    |
| .p:Proxy interview, not asked |  | 660  | 814  | 726  | 470  | 560  |
| .r:Refuse                     |  | 8    | 1    |      |      | 6    |
| .u:Unmar                      |  | 4205 | 4009 | 4782 | 4847 | 5227 |
| .v:SP NR                      |  | 333  | 131  | 349  | 280  | 501  |
| .x:no difficulty              |  | 8863 | 7738 | 8447 | 7792 | 6050 |
| 0.No                          |  | 152  | 259  | 349  | 378  | 391  |
| 1.Yes                         |  | 798  | 544  | 582  | 591  | 247  |

## How Constructed

The following variables indicate whether the respondent's spouse helps the respondent with any IADL needs. The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. If the respondent reports having difficulty with an IADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with IADLs. The information used to derive these variables is taken from the help files in Waves 1 and 2 and from the individual files in Waves 3 and forward. For each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

The following variables are coded as special missing value .x if the respondent reports no difficulty with any IADL, and are coded as special missing value .h if the respondent reports difficulty with an IADL but does not receive any help. Don't know, refused, and other missing responses are assigned special missing values .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwRISCARE, RwRISCAREDPM, RwRISCAREDPMM, RwRISCAREHR, and RwRISCAREHRM include help from the respondent's spouse.

RwRISCARE indicates whether the respondent's spouse helps the respondent with any IADL needs. RwRISCARE is coded as 0 if the respondent receives no assistance from their spouse; and is coded as 1 if the respondent does receive help from their spouse.

RwRISCAREDPM indicates the number of days per month the respondent's spouse helps the respondent with IADL needs. If the respondent reports receiving help every day from their spouse, then a value of 30 is assumed. RwRISCAREDPM is assigned a value of 0 if the respondent did not receive help from their spouse. RwRISCAREDPMM indicates whether no value of days was reported for their spouse helper and so was not accounted for in RwRISCAREDPM. RwRISCAREDPMM is assigned special missing value .m if the respondent was not helped by their spouse. RwRISCAREDPM and RwRISCAREDPMM are not available in wave 1.

RwRISCAREHR indicates the number of hours per day the respondent's spouse helps the respondent with any IADL needs. Respondents are asked, on days their spouse helps with a particular IADL need, how many hours per day their spouse helps. If the respondent reports less than an hour for their spouse, then a 1 is assumed. RwRISCAREHR is assigned a value of 0 if the respondent did not receive help from their spouse. RwRISCAREHRM indicates whether no value of hours was reported for their spouse helper and so was not accounted for in RwRISCAREHR. RwRISCAREHRM is assigned special missing value .m if the respondent was not helped by their spouse. RwRISCAREHR and RwRISCAREHRM are not available in wave 1.

SwRISCARE, SwRISCAREDPM, and SwRISCAREHR indicate whether and the frequency with which the respondent's current wave's spouse receives help from the respondent, and their values are taken from RwRISCARE, RwRISCAREDPM, and RwRISCAREHR. SwRISCAREDPMM and SwRISCAREHRM indicate whether or not a value was reported for the number of days and hours the respondent's current spouse was helped by the respondent and are taken from RwRISCAREDPMM and RwRISCAREHRM. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

The respondent is asked the number of days per month and hours per day the respondent receives help from their spouse starting in Wave 2.

Respondents are allowed to mention up to 12 caregivers in Waves 1 and 2, up to 8 caregivers in Waves 3 and 4, and up to 3 caregivers in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible. These variables in the Harmonized HRS include help provided by the respondent's spouse or former spouse, whereas these variables only include help provided by the respondent's spouse in the Harmonized MHAS.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, these variables in the Harmonized HRS also include help using the telephone, whereas in the Harmonized MHAS they do not include help using the telephone.

RwRIPFCAREDPW in the Harmonized HRS indicates the days per week the respondent received help, while RwRIPFCAREDPM in the Harmonized MHAS indicates the days per month the respondent received help. As such, adjustment must be made before comparison of these variables.

The HRS asks for up to 6 relationships of people who help with IADLs (preparing meals, grocery shopping, making phone calls, and taking medications), and up to 2 people who help with managing money. The MHAS, in contrast, asks for the relationships of a varying number of people who help with preparing meals, grocery shopping, taking medications, and managing money together.

## MHAS Variables Used

### Wave 1:

|       |                                      |
|-------|--------------------------------------|
| H26_3 | spouse helps with hot meal           |
| H26_4 | someone helps with hot meal          |
| H27_3 | spouse helps with shopping           |
| H27_4 | someone helps with shopping          |
| H28_3 | spouse helps with taking medication  |
| H28_4 | someone helps with taking medication |
| H29_3 | spouse helps with managing money     |
| H29_4 | someone helps with managing money    |

### Wave 2:

|      |                         |
|------|-------------------------|
| H26D | spouse helps            |
| H26E | additional person helps |
| H27D | spouse helps            |
| H27E | additional person helps |
| H28D | spouse helps            |
| H28E | additional person helps |
| H29D | spouse helps            |
| H29E | additional person helps |

### Wave 3:

|          |  |
|----------|--|
| H26C_12  | Does anyone help you prepare a hot meal    |
| H27C_12  | Does anyone help you shop for groceries    |
| H28C_12  | Does anyone help you take medications      |
| H29C_12  | Does anyone one help you manage your money |
| H32_1_12 | Relationship with helper for IADLs         |
| H32_2_12 | Relationship with helper for IADLs         |
| H32_3_12 | Relationship with helper for IADLs         |
| H32_4_12 | Relationship with helper for IADLs         |
| H32_5_12 | Relationship with helper for IADLs         |
| H32_6_12 | Relationship with helper for IADLs         |
| H32_7_12 | Relationship with helper for IADLs         |
| H32_8_12 | Relationship with helper for IADLs         |
| H33_1_12 | Registration number of helper for IADLs    |

|          |   |
|----------|---|
| H33_2_12 | Registration number of helper for ADLs          |
| H33_3_12 | Registration number of helper for IADLs         |
| H33_4_12 | Registration number of helper for IADLs         |
| H33_5_12 | Registration number of helper for IADLs         |
| H33_6_12 | Registration number of helper for IADLs         |
| H33_7_12 | Registration number of helper for IADLs         |
| H33_8_12 | Registration number of helper for IADLs         |
| H34_1_12 | Number of days (name) helped last month         |
| H34_2_12 | Number of days (name) helped last month         |
| H34_3_12 | Number of days (name) helped last month         |
| H34_4_12 | Number of days (name) helped last month         |
| H34_5_12 | Number of days (name) helped last month         |
| H34_6_12 | Number of days (name) helped last month         |
| H34_7_12 | Number of days (name) helped last month         |
| H34_8_12 | Number of days (name) helped last month         |
| H35_1_12 | Number of hours during those days (NAME) helped |
| H35_2_12 | Number of hours during those days (NAME) helped |
| H35_3_12 | Number of hours during those days (NAME) helped |
| H35_4_12 | Number of hours during those days (NAME) helped |
| H35_5_12 | Number of hours during those days (NAME) helped |
| H35_6_12 | Number of hours during those days (NAME) helped |
| H35_7_12 | Number of hours during those days (NAME) helped |
| H35_8_12 | Number of hours during those days (NAME) helped |

## Wave 4:

|          |   |
|----------|---|
| H26C_15  | Does someone help respondent to prepare a hot meal      |
| H27C_15  | Does someone help respondent to shop for groceries      |
| H28C_15  | Does someone help respondent to take medications        |
| H29C_15  | Does someone help respondent to manage his/her money    |
| H32_1_15 | Respondent's relationship with person helping with IADL |
| H32_2_15 | Respondent's relationship with person helping with IADL |
| H32_3_15 | Respondent's relationship with person helping with IADL |
| H32_4_15 | Respondent's relationship with person helping with IADL |
| H32_5_15 | Respondent's relationship with person helping with IADL |
| H32_6_15 | Respondent's relationship with person helping with IADL |
| H32_7_15 | Respondent's relationship with person helping with IADL |
| H32_8_15 | Respondent's relationship with person helping with IADL |
| H33_1_15 | Registration number of person helping with IADLs        |
| H33_2_15 | Registration number of person helping with IADLs        |
| H33_3_15 | Registration number of person helping with IADLs        |
| H33_4_15 | Registration number of person helping with IADLs        |
| H33_5_15 | Registration number of person helping with IADLs        |
| H33_6_15 | Registration number of person helping with IADLs        |
| H33_7_15 | Registration number of person helping with IADLs        |
| H33_8_15 | Registration number of person helping with IADLs        |
| H34_1_15 | Number of days the person helped during last month      |
| H34_2_15 | Number of days the person helped during last month      |
| H34_3_15 | Number of days the person helped during last month      |
| H34_4_15 | Number of days the person helped during last month      |
| H34_5_15 | Number of days the person helped during last month      |
| H34_6_15 | Number of days the person helped during last month      |
| H34_7_15 | Number of days the person helped during last month      |
| H34_8_15 | Number of days the person helped during last month      |
| H35_1_15 | Number of hours during those days that the person helps |
| H35_2_15 | Number of hours during those days that the person helps |
| H35_3_15 | Number of hours during those days that the person helps |
| H35_4_15 | Number of hours during those days that the person helps |
| H35_5_15 | Number of hours during those days that the person helps |
| H35_6_15 | Number of hours during those days that the person helps |
| H35_7_15 | Number of hours during those days that the person helps |
| H35_8_15 | Number of hours during those days that the person helps |

## Wave 5:

|         |   |
|---------|---|
| H26C_18 | Does someone help R to prepare a hot meal |
| H27C_18 | Does someone help R to shop for groceries |
| H28C_18 | Does someone help R to take medications   |

---

|          |   |
|----------|---|
| H29C_18  | Does someone help R to manage his/her money             |
| H32_1_18 | R's relationship with person helping with IADLs         |
| H32_2_18 | R's relationship with person helping with IADLs         |
| H32_3_18 | R's relationship with person helping with IADLs         |
| H33_1_18 | Registration number of person helping with IADLs        |
| H33_2_18 | Registration number of person helping with IADLs        |
| H33_3_18 | Registration number of person helping with IADLs        |
| H34_1_18 | Number of days the person helped during last month      |
| H34_2_18 | Number of days the person helped during last month      |
| H34_3_18 | Number of days the person helped during last month      |
| H35_1_18 | Number of hours during those days that the person helps |
| H35_2_18 | Number of hours during those days that the person helps |
| H35_3_18 | Number of hours during those days that the person helps |

**Instrumental Activities of Daily Living: Receives Informal Care from Children or Grandchildren**

| Wave | Variable      | Label  | Type  |
|------|---------------|--|-------|
| 1    | R1RICCARE     | r1riccare: w1 R receives informal care from kids/grandkids f | Categ |
| 2    | R2RICCARE     | r2riccare: w2 R receives informal care from kids/grandkids f | Categ |
| 3    | R3RICCARE     | r3riccare: w3 R receives informal care from kids/grandkids f | Categ |
| 4    | R4RICCARE     | r4riccare: w4 R receives informal care from kids/grandkids f | Categ |
| 5    | R5RICCARE     | r5riccare: w5 R receives informal care from kids/grandkids f | Categ |
| 1    | S1RICCARE     | s1riccare: w1 S receives informal care from kids/grandkids f | Categ |
| 2    | S2RICCARE     | s2riccare: w2 S receives informal care from kids/grandkids f | Categ |
| 3    | S3RICCARE     | s3riccare: w3 S receives informal care from kids/grandkids f | Categ |
| 4    | S4RICCARE     | s4riccare: w4 S receives informal care from kids/grandkids f | Categ |
| 5    | S5RICCARE     | s5riccare: w5 S receives informal care from kids/grandkids f | Categ |
| 1    | R1RICCAREN    | r1riccaren: w1 # kids/grandkids who help R with IADLs        | Cont  |
| 2    | R2RICCAREN    | r2riccaren: w2 # kids/grandkids who help R with IADLs        | Cont  |
| 3    | R3RICCAREN    | r3riccaren: w3 # kids/grandkids who help R with IADLs        | Cont  |
| 4    | R4RICCAREN    | r4riccaren: w4 # kids/grandkids who help R with IADLs        | Cont  |
| 5    | R5RICCAREN    | r5riccaren: w5 # kids/grandkids who help R with IADLs        | Cont  |
| 1    | S1RICCAREN    | s1riccaren: w1 # kids/grandkids who help S with IADLs        | Cont  |
| 2    | S2RICCAREN    | s2riccaren: w2 # kids/grandkids who help S with IADLs        | Cont  |
| 3    | S3RICCAREN    | s3riccaren: w3 # kids/grandkids who help S with IADLs        | Cont  |
| 4    | S4RICCAREN    | s4riccaren: w4 # kids/grandkids who help S with IADLs        | Cont  |
| 5    | S5RICCAREN    | s5riccaren: w5 # kids/grandkids who help S with IADLs        | Cont  |
| 1    | R1RICCAREDPM  | r1riccaredpm: w1 days/month kids/grandkids help R with IADLs | Cont  |
| 2    | R2RICCAREDPM  | r2riccaredpm: w2 days/month kids/grandkids help R with IADLs | Cont  |
| 3    | R3RICCAREDPM  | r3riccaredpm: w3 days/month kids/grandkids help R with IADLs | Cont  |
| 4    | R4RICCAREDPM  | r4riccaredpm: w4 days/month kids/grandkids help R with IADLs | Cont  |
| 5    | R5RICCAREDPM  | r5riccaredpm: w5 days/month kids/grandkids help R with IADLs | Cont  |
| 1    | S1RICCAREDPM  | s1riccaredpm: w1 days/month kids/grandkids help S with IADLs | Cont  |
| 2    | S2RICCAREDPM  | s2riccaredpm: w2 days/month kids/grandkids help S with IADLs | Cont  |
| 3    | S3RICCAREDPM  | s3riccaredpm: w3 days/month kids/grandkids help S with IADLs | Cont  |
| 4    | S4RICCAREDPM  | s4riccaredpm: w4 days/month kids/grandkids help S with IADLs | Cont  |
| 5    | S5RICCAREDPM  | s5riccaredpm: w5 days/month kids/grandkids help S with IADLs | Cont  |
| 1    | R1RICCAREDPMM | r1riccaredpmm: w1 R # kids/grandkids missing days of help fo | Cont  |
| 2    | R2RICCAREDPMM | r2riccaredpmm: w2 R # kids/grandkids missing days of help fo | Cont  |
| 3    | R3RICCAREDPMM | r3riccaredpmm: w3 R # kids/grandkids missing days of help fo | Cont  |
| 4    | R4RICCAREDPMM | r4riccaredpmm: w4 R # kids/grandkids missing days of help fo | Cont  |
| 1    | S1RICCAREDPMM | s1riccaredpmm: w1 S # kids/grandkids missing days of help fo | Cont  |
| 2    | S2RICCAREDPMM | s2riccaredpmm: w2 S # kids/grandkids missing days of help fo | Cont  |
| 3    | S3RICCAREDPMM | s3riccaredpmm: w3 S # kids/grandkids missing days of help fo | Cont  |
| 4    | S4RICCAREDPMM | s4riccaredpmm: w4 S # kids/grandkids missing days of help fo | Cont  |
| 5    | S5RICCAREDPMM | s5riccaredpmm: w5 S # kids/grandkids missing days of help fo | Cont  |
| 1    | R1RICCAREHR   | r1riccarehr: w1 hours/day kids/grandkids help R with IADLs   | Cont  |
| 2    | R2RICCAREHR   | r2riccarehr: w2 hours/day kids/grandkids help R with IADLs   | Cont  |
| 3    | R3RICCAREHR   | r3riccarehr: w3 hours/day kids/grandkids help R with IADLs   | Cont  |
| 4    | R4RICCAREHR   | r4riccarehr: w4 hours/day kids/grandkids help R with IADLs   | Cont  |
| 5    | R5RICCAREHR   | r5riccarehr: w5 hours/day kids/grandkids help R with IADLs   | Cont  |
| 1    | S1RICCAREHR   | s1riccarehr: w1 hours/day kids/grandkids help S with IADLs   | Cont  |
| 2    | S2RICCAREHR   | s2riccarehr: w2 hours/day kids/grandkids help S with IADLs   | Cont  |
| 3    | S3RICCAREHR   | s3riccarehr: w3 hours/day kids/grandkids help S with IADLs   | Cont  |
| 4    | S4RICCAREHR   | s4riccarehr: w4 hours/day kids/grandkids help S with IADLs   | Cont  |
| 5    | S5RICCAREHR   | s5riccarehr: w5 hours/day kids/grandkids help S with IADLs   | Cont  |

|   |              |                  |                    |                          |      |
|---|--------------|------------------|--------------------|--------------------------|------|
| 1 | R1RICCAREHRM | r1riccarehrm: w1 | R # kids/grandkids | missing hours of help fo | Cont |
| 2 | R2RICCAREHRM | r2riccarehrm: w2 | R # kids/grandkids | missing hours of help fo | Cont |
| 3 | R3RICCAREHRM | r3riccarehrm: w3 | R # kids/grandkids | missing hours of help fo | Cont |
| 4 | R4RICCAREHRM | r4riccarehrm: w4 | R # kids/grandkids | missing hours of help fo | Cont |
| 5 | R5RICCAREHRM | r5riccarehrm: w5 | R # kids/grandkids | missing hours of help fo | Cont |
| 1 | S1RICCAREHRM | s1riccarehrm: w1 | S # kids/grandkids | missing hours of help fo | Cont |
| 2 | S2RICCAREHRM | s2riccarehrm: w2 | S # kids/grandkids | missing hours of help fo | Cont |
| 3 | S3RICCAREHRM | s3riccarehrm: w3 | S # kids/grandkids | missing hours of help fo | Cont |
| 4 | S4RICCAREHRM | s4riccarehrm: w4 | S # kids/grandkids | missing hours of help fo | Cont |
| 5 | S5RICCAREHRM | s5riccarehrm: w5 | S # kids/grandkids | missing hours of help fo | Cont |

## Descriptive Statistics

| Variable      | N    | Mean  | Std Dev | Minimum | Maximum |
|---------------|------|-------|---------|---------|---------|
| R1RICCARE     | 1417 | 0.48  | 0.50    | 0.00    | 1.00    |
| R2RICCARE     | 1309 | 0.56  | 0.50    | 0.00    | 1.00    |
| R3RICCARE     | 1663 | 0.60  | 0.49    | 0.00    | 1.00    |
| R4RICCARE     | 1887 | 0.65  | 0.48    | 0.00    | 1.00    |
| R5RICCARE     | 1491 | 0.67  | 0.47    | 0.00    | 1.00    |
| S1RICCARE     | 950  | 0.32  | 0.47    | 0.00    | 1.00    |
| S2RICCARE     | 803  | 0.39  | 0.49    | 0.00    | 1.00    |
| S3RICCARE     | 931  | 0.41  | 0.49    | 0.00    | 1.00    |
| S4RICCARE     | 969  | 0.45  | 0.50    | 0.00    | 1.00    |
| S5RICCARE     | 638  | 0.55  | 0.50    | 0.00    | 1.00    |
| R1RICCAREN    | 1417 | 0.66  | 0.86    | 0.00    | 6.00    |
| R2RICCAREN    | 1309 | 0.76  | 0.90    | 0.00    | 9.00    |
| R3RICCAREN    | 1663 | 0.73  | 0.74    | 0.00    | 6.00    |
| R4RICCAREN    | 1887 | 0.82  | 0.77    | 0.00    | 7.00    |
| R5RICCAREN    | 1491 | 0.85  | 0.77    | 0.00    | 3.00    |
| S1RICCAREN    | 950  | 0.47  | 0.84    | 0.00    | 6.00    |
| S2RICCAREN    | 803  | 0.55  | 0.84    | 0.00    | 7.00    |
| S3RICCAREN    | 931  | 0.53  | 0.77    | 0.00    | 5.00    |
| S4RICCAREN    | 969  | 0.58  | 0.77    | 0.00    | 7.00    |
| S5RICCAREN    | 638  | 0.67  | 0.73    | 0.00    | 3.00    |
| R1RICCAREDPM  | 1417 | 14.78 | 22.01   | 0.00    | 180.00  |
| R2RICCAREDPM  | 1308 | 17.42 | 22.56   | 0.00    | 180.00  |
| R3RICCAREDPM  | 1652 | 14.20 | 17.92   | 0.00    | 135.00  |
| R4RICCAREDPM  | 1883 | 14.36 | 18.47   | 0.00    | 210.00  |
| R5RICCAREDPM  | 1464 | 18.27 | 20.09   | 0.00    | 90.00   |
| S1RICCAREDPM  | 950  | 10.18 | 21.07   | 0.00    | 180.00  |
| S2RICCAREDPM  | 803  | 12.20 | 20.71   | 0.00    | 158.00  |
| S3RICCAREDPM  | 926  | 9.12  | 16.01   | 0.00    | 135.00  |
| S4RICCAREDPM  | 966  | 9.35  | 15.32   | 0.00    | 120.00  |
| S5RICCAREDPM  | 629  | 13.99 | 18.42   | 0.00    | 90.00   |
| R1RICCAREDPMM | 1417 | 0.00  | 0.00    | 0.00    | 0.00    |
| R2RICCAREDPMM | 1309 | 0.00  | 0.03    | 0.00    | 1.00    |
| R3RICCAREDPMM | 1663 | 0.01  | 0.10    | 0.00    | 2.00    |
| R4RICCAREDPMM | 1887 | 0.00  | 0.07    | 0.00    | 2.00    |
| S1RICCAREDPMM | 950  | 0.00  | 0.00    | 0.00    | 0.00    |
| S2RICCAREDPMM | 803  | 0.00  | 0.00    | 0.00    | 0.00    |
| S3RICCAREDPMM | 931  | 0.01  | 0.09    | 0.00    | 1.00    |
| S4RICCAREDPMM | 969  | 0.00  | 0.06    | 0.00    | 1.00    |
| S5RICCAREDPMM | 638  | 0.02  | 0.18    | 0.00    | 3.00    |
| R1RICCAREHR   | 1417 | 2.62  | 4.91    | 0.00    | 48.00   |



|              |      |      |      |      |        |
|--------------|------|------|------|------|--------|
| R2RICCAREHR  | 1308 | 3.34 | 8.45 | 0.00 | 216.00 |
| R3RICCAREHR  | 1651 | 4.66 | 7.65 | 0.00 | 75.00  |
| R4RICCAREHR  | 1881 | 3.43 | 6.20 | 0.00 | 168.00 |
| R5RICCAREHR  | 1453 | 4.06 | 6.41 | 0.00 | 48.00  |
| S1RICCAREHR  | 950  | 1.56 | 3.73 | 0.00 | 36.00  |
| S2RICCAREHR  | 803  | 1.90 | 4.39 | 0.00 | 44.00  |
| S3RICCAREHR  | 924  | 2.79 | 6.31 | 0.00 | 75.00  |
| S4RICCAREHR  | 968  | 2.16 | 4.01 | 0.00 | 28.00  |
| S5RICCAREHR  | 629  | 3.02 | 5.58 | 0.00 | 36.00  |
| R1RICCAREHRM | 1417 | 0.00 | 0.00 | 0.00 | 0.00   |
| R2RICCAREHRM | 1309 | 0.00 | 0.03 | 0.00 | 1.00   |
| R3RICCAREHRM | 1663 | 0.01 | 0.10 | 0.00 | 2.00   |
| R4RICCAREHRM | 1887 | 0.01 | 0.11 | 0.00 | 4.00   |
| R5RICCAREHRM | 1491 | 0.04 | 0.22 | 0.00 | 3.00   |
| S1RICCAREHRM | 950  | 0.00 | 0.00 | 0.00 | 0.00   |
| S2RICCAREHRM | 803  | 0.00 | 0.00 | 0.00 | 0.00   |
| S3RICCAREHRM | 931  | 0.01 | 0.09 | 0.00 | 1.00   |
| S4RICCAREHRM | 969  | 0.00 | 0.05 | 0.00 | 1.00   |
| S5RICCAREHRM | 638  | 0.02 | 0.17 | 0.00 | 3.00   |

Categorical Variable Codes

|                               |           |           |           |           |           |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| Value-----                    | R1RICCARE | R2RICCARE | R3RICCARE | R4RICCARE | R5RICCARE |
| .d:DK                         |           |           | 1         | 5         |           |
| .h:no help received           | 267       | 204       | 658       | 605       | 406       |
| .m:Missing                    | 38        | 30        |           | 40        | 17        |
| .p:Proxy interview, not asked | 1032      | 1161      | 1275      | 929       | 1328      |
| .r:Refuse                     | 13        | 1         | 1         | 1         | 12        |
| .x:no difficulty              | 12419     | 10999     | 12125     | 11312     | 13860     |
| 0.No                          | 736       | 582       | 670       | 661       | 494       |
| 1.Yes                         | 681       | 727       | 993       | 1226      | 997       |

|                               |           |           |           |           |           |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| Value-----                    | S1RICCARE | S2RICCARE | S3RICCARE | S4RICCARE | S5RICCARE |
| .d:DK                         |           |           | 1         | 5         |           |
| .h:no help received           | 154       | 202       | 487       | 406       | 205       |
| .m:Missing                    | 13        | 6         |           | 10        | 2         |
| .p:Proxy interview, not asked | 660       | 814       | 726       | 470       | 560       |
| .r:Refuse                     | 8         | 1         |           |           | 6         |
| .u:Unmar                      | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      | 333       | 131       | 349       | 280       | 501       |
| .x:no difficulty              | 8863      | 7738      | 8447      | 7792      | 6050      |
| 0.No                          | 646       | 488       | 548       | 532       | 289       |
| 1.Yes                         | 304       | 315       | 383       | 437       | 349       |

How Constructed

The following variables indicate whether the respondent's children or grandchildren help the respondent with any IADL needs. The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. If the respondent reports having difficulty with an IADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with IADLs. The information used to derive these variables is taken from the help files in Waves 1 and 2 and from the individual files in Waves 3 and forward. For each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

The following variables are coded as special missing value .x if the respondent reports no difficulty with any IADL, and are coded as special missing value .h if the respondent reports difficulty with an IADL but does not receive any help. Don't know, refused, or other missing responses are assigned special missing values .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwRICCARE, RwRICCAREN, RwRICCAREDPM, RwRICCAREDPMM, RwRICCAREHR, and RwRICCAREHRM include help from a child, child-in-law, or grandchild.

RwRICCARE indicates whether any of the respondent's children or grandchildren help the respondent with IADL needs. RwRICCAREN indicates the number of the respondent's children or grandchildren who help the respondent with IADL needs. RwRICCARE is coded as 0 if none of the respondent's children or grandchildren help the respondent with IADLS; and is coded as 1 if at least one of the respondent's children or grandchildren help the respondent with IADLS.

RwRICCAREDPM indicates the number of total days per month the respondent's children or grandchildren help the respondent with IADL needs. If the respondent reports receiving help every day from that child or grandchild, then a value of 30 is assumed. RwRICCAREDPM is the sum of days per month for all children or grandchildren helpers, and so values can be over 30 days. RwRICCAREDPM is calculated as long as there is one non-missing value. RwRICCAREDPM is assigned a value of 0 if the respondent did not receive help from any children or grandchildren. RwRICCAREDPMM indicates the number of children or grandchildren who helped the respondent for whom no value of days was reported and was not accounted for in RwRICCAREDPM. RwRICCAREDPMM is assigned special missing value .m if the respondent was not helped by any children or grandchildren.

RwRICCAREHR indicates the number of hours per day the respondent's children or grandchildren help the respondent with IADL needs. Respondents are asked, on days their children or grandchildren help, how many hours per day that is. If the respondent reports less than an hour for that child or grandchild, then a 1 is assumed. RwRICCAREHR is the sum of hours per day for all children or grandchildren helpers, and so values can be over 24 hours. RwRICCAREHR is calculated as long as there is one non-missing value. RwRICCAREHR is assigned a value of 0 if the respondent did not receive help from any children or grandchildren. RwRICCAREHRM indicates the number of children or grandchildren who helped the respondent for whom no value of hours was reported and was not accounted for in RwRICCAREHR. RwRICCAREHRM is assigned special missing value .m if the respondent was not helped by any children or grandchildren.

SwRICCARE, SwRICCAREN, SwRICCAREDPM, and SwRICCAREHR indicate whether the respondent's current wave's spouse receives help from children or grandchildren, the number, and the frequency with which, and their values are taken from RwRICCARE, RwRICCAREN, RwRICCAREDPM, and RwRICCAREHR. SwRICCAREDPMM and SwRICCAREHRM indicate the number of children who helped the respondent's current spouse for whom a value was not reported for the number of days and hours and are taken from RwRICCAREDPMM and RwRICCAREHRM. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers in Waves 1 and 2, up to 8 caregivers in Waves 3 and 4, and up to 3 caregivers in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, these variables in the Harmonized HRS also include help using the telephone, whereas in the Harmonized MHAS they do not include help using the telephone.

RwRICCAREDPW in the Harmonized HRS indicates the days per week the respondent received help, while RwRICCAREDPM in the Harmonized MHAS indicates the days per month the respondent received help. As such, adjustment must be made before comparison of these variables.

The HRS asks for up to 6 relationships of people who help with IADLs (preparing meals, grocery shopping, making phone calls, and taking medications), and up to 2 people who help with managing money. The MHAS, in contrast, asks for the relationships of a varying number of people who help with preparing meals, grocery shopping, taking medications, and managing money together.

## MHAS Variables Used

### Wave 1:

|       |                                      |
|-------|--------------------------------------|
| H26_3 | spouse helps with hot meal           |
| H26_4 | someone helps with hot meal          |
| H27_3 | spouse helps with shopping           |
| H27_4 | someone helps with shopping          |
| H28_3 | spouse helps with taking medication  |
| H28_4 | someone helps with taking medication |
| H29_3 | spouse helps with managing money     |
| H29_4 | someone helps with managing money    |

### Wave 2:

|      |                         |
|------|-------------------------|
| H26D | spouse helps            |
| H26E | additional person helps |
| H27D | spouse helps            |
| H27E | additional person helps |
| H28D | spouse helps            |
| H28E | additional person helps |
| H29D | spouse helps            |
| H29E | additional person helps |

### Wave 3:

|          |   |
|----------|---|
| H26C_12  | Does anyone help you prepare a hot meal         |
| H27C_12  | Does anyone help you shop for groceries         |
| H28C_12  | Does anyone help you take medications           |
| H29C_12  | Does anyone one help you manage your money      |
| H32_1_12 | Relationship with helper for IADLs              |
| H32_2_12 | Relationship with helper for IADLs              |
| H32_3_12 | Relationship with helper for IADLs              |
| H32_4_12 | Relationship with helper for IADLs              |
| H32_5_12 | Relationship with helper for IADLs              |
| H32_6_12 | Relationship with helper for IADLs              |
| H32_7_12 | Relationship with helper for IADLs              |
| H32_8_12 | Relationship with helper for IADLs              |
| H33_1_12 | Registration number of helper for IADLs         |
| H33_2_12 | Registration number of helper for ADLs          |
| H33_3_12 | Registration number of helper for IADLs         |
| H33_4_12 | Registration number of helper for IADLs         |
| H33_5_12 | Registration number of helper for IADLs         |
| H33_6_12 | Registration number of helper for IADLs         |
| H33_7_12 | Registration number of helper for IADLs         |
| H33_8_12 | Registration number of helper for IADLs         |
| H34_1_12 | Number of days (name) helped last month         |
| H34_2_12 | Number of days (name) helped last month         |
| H34_3_12 | Number of days (name) helped last month         |
| H34_4_12 | Number of days (name) helped last month         |
| H34_5_12 | Number of days (name) helped last month         |
| H34_6_12 | Number of days (name) helped last month         |
| H34_7_12 | Number of days (name) helped last month         |
| H34_8_12 | Number of days (name) helped last month         |
| H35_1_12 | Number of hours during those days (NAME) helped |
| H35_2_12 | Number of hours during those days (NAME) helped |
| H35_3_12 | Number of hours during those days (NAME) helped |
| H35_4_12 | Number of hours during those days (NAME) helped |
| H35_5_12 | Number of hours during those days (NAME) helped |
| H35_6_12 | Number of hours during those days (NAME) helped |
| H35_7_12 | Number of hours during those days (NAME) helped |
| H35_8_12 | Number of hours during those days (NAME) helped |

### Wave 4:

|         |  |
|---------|--|
| H26C_15 | Does someone help respondent to prepare a hot meal |
|---------|--|

|          |   |
|----------|---|
| H27C_15  | Does someone help respondent to shop for groceries      |
| H28C_15  | Does someone help respondent to take medications        |
| H29C_15  | Does someone help respondent to manage his/her money    |
| H32_1_15 | Respondent's relationship with person helping with IADL |
| H32_2_15 | Respondent's relationship with person helping with IADL |
| H32_3_15 | Respondent's relationship with person helping with IADL |
| H32_4_15 | Respondent's relationship with person helping with IADL |
| H32_5_15 | Respondent's relationship with person helping with IADL |
| H32_6_15 | Respondent's relationship with person helping with IADL |
| H32_7_15 | Respondent's relationship with person helping with IADL |
| H32_8_15 | Respondent's relationship with person helping with IADL |
| H33_1_15 | Registration number of person helping with IADLs        |
| H33_2_15 | Registration number of person helping with IADLs        |
| H33_3_15 | Registration number of person helping with IADLs        |
| H33_4_15 | Registration number of person helping with IADLs        |
| H33_5_15 | Registration number of person helping with IADLs        |
| H33_6_15 | Registration number of person helping with IADLs        |
| H33_7_15 | Registration number of person helping with IADLs        |
| H33_8_15 | Registration number of person helping with IADLs        |
| H34_1_15 | Number of days the person helped during last month      |
| H34_2_15 | Number of days the person helped during last month      |
| H34_3_15 | Number of days the person helped during last month      |
| H34_4_15 | Number of days the person helped during last month      |
| H34_5_15 | Number of days the person helped during last month      |
| H34_6_15 | Number of days the person helped during last month      |
| H34_7_15 | Number of days the person helped during last month      |
| H34_8_15 | Number of days the person helped during last month      |
| H35_1_15 | Number of hours during those days that the person helps |
| H35_2_15 | Number of hours during those days that the person helps |
| H35_3_15 | Number of hours during those days that the person helps |
| H35_4_15 | Number of hours during those days that the person helps |
| H35_5_15 | Number of hours during those days that the person helps |
| H35_6_15 | Number of hours during those days that the person helps |
| H35_7_15 | Number of hours during those days that the person helps |
| H35_8_15 | Number of hours during those days that the person helps |

## Wave 5:

|          |   |
|----------|---|
| H26C_18  | Does someone help R to prepare a hot meal               |
| H27C_18  | Does someone help R to shop for groceries               |
| H28C_18  | Does someone help R to take medications                 |
| H29C_18  | Does someone help R to manage his/her money             |
| H32_1_18 | R's relationship with person helping with IADLs         |
| H32_2_18 | R's relationship with person helping with IADLs         |
| H32_3_18 | R's relationship with person helping with IADLs         |
| H33_1_18 | Registration number of person helping with IADLs        |
| H33_2_18 | Registration number of person helping with IADLs        |
| H33_3_18 | Registration number of person helping with IADLs        |
| H34_1_18 | Number of days the person helped during last month      |
| H34_2_18 | Number of days the person helped during last month      |
| H34_3_18 | Number of days the person helped during last month      |
| H35_1_18 | Number of hours during those days that the person helps |
| H35_2_18 | Number of hours during those days that the person helps |
| H35_3_18 | Number of hours during those days that the person helps |

|   |
|---|
| <b>Instrumental Activities of Daily Living: Receives Informal Care from Relatives</b> |
|---|

| Wave | Variable      | Label  | Type  |
|------|---------------|--|-------|
| 1    | R1RIRCARE     | r1rircare: w1 R receives informal care from relatives for IA | Categ |
| 2    | R2RIRCARE     | r2rircare: w2 R receives informal care from relatives for IA | Categ |
| 3    | R3RIRCARE     | r3rircare: w3 R receives informal care from relatives for IA | Categ |
| 4    | R4RIRCARE     | r4rircare: w4 R receives informal care from relatives for IA | Categ |
| 5    | R5RIRCARE     | r5rircare: w5 R receives informal care from relatives for IA | Categ |
|      |               |  |       |
| 1    | S1RIRCARE     | s1rircare: w1 S receives informal care from relatives for IA | Categ |
| 2    | S2RIRCARE     | s2rircare: w2 S receives informal care from relatives for IA | Categ |
| 3    | S3RIRCARE     | s3rircare: w3 S receives informal care from relatives for IA | Categ |
| 4    | S4RIRCARE     | s4rircare: w4 S receives informal care from relatives for IA | Categ |
| 5    | S5RIRCARE     | s5rircare: w5 S receives informal care from relatives for IA | Categ |
|      |               |  |       |
| 1    | R1RIRCAREN    | r1rircaren: w1 # relatives who help R with IADLs             | Cont  |
| 2    | R2RIRCAREN    | r2rircaren: w2 # relatives who help R with IADLs             | Cont  |
| 3    | R3RIRCAREN    | r3rircaren: w3 # relatives who help R with IADLs             | Cont  |
| 4    | R4RIRCAREN    | r4rircaren: w4 # relatives who help R with IADLs             | Cont  |
| 5    | R5RIRCAREN    | r5rircaren: w5 # relatives who help R with IADLs             | Cont  |
|      |               |  |       |
| 1    | S1RIRCAREN    | s1rircaren: w1 # relatives who help S with IADLs             | Cont  |
| 2    | S2RIRCAREN    | s2rircaren: w2 # relatives who help S with IADLs             | Cont  |
| 3    | S3RIRCAREN    | s3rircaren: w3 # relatives who help S with IADLs             | Cont  |
| 4    | S4RIRCAREN    | s4rircaren: w4 # relatives who help S with IADLs             | Cont  |
| 5    | S5RIRCAREN    | s5rircaren: w5 # relatives who help S with IADLs             | Cont  |
|      |               |  |       |
| 1    | R1RIRCAREDPM  | r1rircaredpm: w1 days/month relatives help R with IADLs      | Cont  |
| 2    | R2RIRCAREDPM  | r2rircaredpm: w2 days/month relatives help R with IADLs      | Cont  |
| 3    | R3RIRCAREDPM  | r3rircaredpm: w3 days/month relatives help R with IADLs      | Cont  |
| 4    | R4RIRCAREDPM  | r4rircaredpm: w4 days/month relatives help R with IADLs      | Cont  |
| 5    | R5RIRCAREDPM  | r5rircaredpm: w5 days/month relatives help R with IADLs      | Cont  |
|      |               |  |       |
| 1    | S1RIRCAREDPM  | s1rircaredpm: w1 days/month relatives help S with IADLs      | Cont  |
| 2    | S2RIRCAREDPM  | s2rircaredpm: w2 days/month relatives help S with IADLs      | Cont  |
| 3    | S3RIRCAREDPM  | s3rircaredpm: w3 days/month relatives help S with IADLs      | Cont  |
| 4    | S4RIRCAREDPM  | s4rircaredpm: w4 days/month relatives help S with IADLs      | Cont  |
| 5    | S5RIRCAREDPM  | s5rircaredpm: w5 days/month relatives help S with IADLs      | Cont  |
|      |               |  |       |
| 1    | R1RIRCAREDPMM | r1rircaredpmm: w1 R # relatives missing days of help for IAD | Cont  |
| 2    | R2RIRCAREDPMM | r2rircaredpmm: w2 R # relatives missing days of help for IAD | Cont  |
| 3    | R3RIRCAREDPMM | r3rircaredpmm: w3 R # relatives missing days of help for IAD | Cont  |
| 4    | R4RIRCAREDPMM | r4rircaredpmm: w4 R # relatives missing days of help for IAD | Cont  |
| 5    | R5RIRCAREDPMM | r5rircaredpmm: w5 R # relatives missing days of help for IAD | Cont  |
|      |               |  |       |
| 1    | S1RIRCAREDPMM | s1rircaredpmm: w1 S # relatives missing days of help for IAD | Cont  |
| 2    | S2RIRCAREDPMM | s2rircaredpmm: w2 S # relatives missing days of help for IAD | Cont  |
| 3    | S3RIRCAREDPMM | s3rircaredpmm: w3 S # relatives missing days of help for IAD | Cont  |
| 4    | S4RIRCAREDPMM | s4rircaredpmm: w4 S # relatives missing days of help for IAD | Cont  |
| 5    | S5RIRCAREDPMM | s5rircaredpmm: w5 S # relatives missing days of help for IAD | Cont  |
|      |               |  |       |
| 1    | R1RIRCAREHR   | r1rircarehr: w1 hours/day relatives help R with IADLs        | Cont  |
| 2    | R2RIRCAREHR   | r2rircarehr: w2 hours/day relatives help R with IADLs        | Cont  |
| 3    | R3RIRCAREHR   | r3rircarehr: w3 hours/day relatives help R with IADLs        | Cont  |
| 4    | R4RIRCAREHR   | r4rircarehr: w4 hours/day relatives help R with IADLs        | Cont  |
| 5    | R5RIRCAREHR   | r5rircarehr: w5 hours/day relatives help R with IADLs        | Cont  |
|      |               |  |       |
| 1    | S1RIRCAREHR   | s1rircarehr: w1 hours/day relatives help S with IADLs        | Cont  |
| 2    | S2RIRCAREHR   | s2rircarehr: w2 hours/day relatives help S with IADLs        | Cont  |
| 3    | S3RIRCAREHR   | s3rircarehr: w3 hours/day relatives help S with IADLs        | Cont  |
| 4    | S4RIRCAREHR   | s4rircarehr: w4 hours/day relatives help S with IADLs        | Cont  |
| 5    | S5RIRCAREHR   | s5rircarehr: w5 hours/day relatives help S with IADLs        | Cont  |

|   |              |                  |     |           |         |       |    |      |     |     |      |
|---|--------------|------------------|-----|-----------|---------|-------|----|------|-----|-----|------|
| 1 | R1RIRCAREHRM | r1rircarehrm: w1 | R # | relatives | missing | hours | of | help | for | IAD | Cont |
| 2 | R2RIRCAREHRM | r2rircarehrm: w2 | R # | relatives | missing | hours | of | help | for | IAD | Cont |
| 3 | R3RIRCAREHRM | r3rircarehrm: w3 | R # | relatives | missing | hours | of | help | for | IAD | Cont |
| 4 | R4RIRCAREHRM | r4rircarehrm: w4 | R # | relatives | missing | hours | of | help | for | IAD | Cont |
| 5 | R5RIRCAREHRM | r5rircarehrm: w5 | R # | relatives | missing | hours | of | help | for | IAD | Cont |
| 1 | S1RIRCAREHRM | s1rircarehrm: w1 | S # | relatives | missing | hours | of | help | for | IAD | Cont |
| 2 | S2RIRCAREHRM | s2rircarehrm: w2 | S # | relatives | missing | hours | of | help | for | IAD | Cont |
| 3 | S3RIRCAREHRM | s3rircarehrm: w3 | S # | relatives | missing | hours | of | help | for | IAD | Cont |
| 4 | S4RIRCAREHRM | s4rircarehrm: w4 | S # | relatives | missing | hours | of | help | for | IAD | Cont |
| 5 | S5RIRCAREHRM | s5rircarehrm: w5 | S # | relatives | missing | hours | of | help | for | IAD | Cont |

## Descriptive Statistics

| Variable      | N    | Mean | Std Dev | Minimum | Maximum |
|---------------|------|------|---------|---------|---------|
| R1RIRCARE     | 1417 | 0.04 | 0.19    | 0.00    | 1.00    |
| R2RIRCARE     | 1309 | 0.05 | 0.21    | 0.00    | 1.00    |
| R3RIRCARE     | 1663 | 0.04 | 0.20    | 0.00    | 1.00    |
| R4RIRCARE     | 1887 | 0.04 | 0.19    | 0.00    | 1.00    |
| R5RIRCARE     | 1491 | 0.05 | 0.21    | 0.00    | 1.00    |
| S1RIRCARE     | 950  | 0.01 | 0.12    | 0.00    | 1.00    |
| S2RIRCARE     | 803  | 0.01 | 0.09    | 0.00    | 1.00    |
| S3RIRCARE     | 931  | 0.01 | 0.11    | 0.00    | 1.00    |
| S4RIRCARE     | 969  | 0.01 | 0.08    | 0.00    | 1.00    |
| S5RIRCARE     | 638  | 0.01 | 0.10    | 0.00    | 1.00    |
| R1RIRCAREN    | 1417 | 0.04 | 0.24    | 0.00    | 3.00    |
| R2RIRCAREN    | 1309 | 0.06 | 0.27    | 0.00    | 3.00    |
| R3RIRCAREN    | 1663 | 0.05 | 0.25    | 0.00    | 4.00    |
| R4RIRCAREN    | 1887 | 0.04 | 0.24    | 0.00    | 3.00    |
| R5RIRCAREN    | 1491 | 0.05 | 0.26    | 0.00    | 3.00    |
| S1RIRCAREN    | 950  | 0.02 | 0.14    | 0.00    | 2.00    |
| S2RIRCAREN    | 803  | 0.01 | 0.09    | 0.00    | 1.00    |
| S3RIRCAREN    | 931  | 0.01 | 0.13    | 0.00    | 2.00    |
| S4RIRCAREN    | 969  | 0.01 | 0.10    | 0.00    | 2.00    |
| S5RIRCAREN    | 638  | 0.01 | 0.15    | 0.00    | 3.00    |
| R1RIRCAREDPM  | 1417 | 0.95 | 5.99    | 0.00    | 90.00   |
| R2RIRCAREDPM  | 1309 | 1.42 | 7.44    | 0.00    | 90.00   |
| R3RIRCAREDPM  | 1663 | 0.90 | 5.67    | 0.00    | 90.00   |
| R4RIRCAREDPM  | 1886 | 0.84 | 5.53    | 0.00    | 90.00   |
| R5RIRCAREDPM  | 1491 | 1.04 | 5.72    | 0.00    | 72.00   |
| S1RIRCAREDPM  | 950  | 0.36 | 3.57    | 0.00    | 60.00   |
| S2RIRCAREDPM  | 803  | 0.16 | 1.95    | 0.00    | 30.00   |
| S3RIRCAREDPM  | 931  | 0.28 | 3.05    | 0.00    | 60.00   |
| S4RIRCAREDPM  | 969  | 0.17 | 2.56    | 0.00    | 60.00   |
| S5RIRCAREDPM  | 638  | 0.08 | 1.23    | 0.00    | 30.00   |
| R1RIRCAREDPMM | 1417 | 0.00 | 0.00    | 0.00    | 0.00    |
| R2RIRCAREDPMM | 1309 | 0.00 | 0.00    | 0.00    | 0.00    |
| R3RIRCAREDPMM | 1663 | 0.00 | 0.00    | 0.00    | 0.00    |
| R4RIRCAREDPMM | 1887 | 0.00 | 0.02    | 0.00    | 1.00    |
| R5RIRCAREDPMM | 1491 | 0.00 | 0.00    | 0.00    | 0.00    |
| S1RIRCAREDPMM | 950  | 0.00 | 0.00    | 0.00    | 0.00    |
| S2RIRCAREDPMM | 803  | 0.00 | 0.00    | 0.00    | 0.00    |
| S3RIRCAREDPMM | 931  | 0.00 | 0.00    | 0.00    | 0.00    |
| S4RIRCAREDPMM | 969  | 0.00 | 0.00    | 0.00    | 0.00    |
| S5RIRCAREDPMM | 638  | 0.00 | 0.00    | 0.00    | 0.00    |

|              |      |      |      |      |       |
|--------------|------|------|------|------|-------|
| R1RIRCAREHR  | 1417 | 0.25 | 1.89 | 0.00 | 25.00 |
| R2RIRCAREHR  | 1309 | 0.25 | 1.74 | 0.00 | 36.00 |
| R3RIRCAREHR  | 1660 | 0.29 | 2.12 | 0.00 | 39.00 |
| R4RIRCAREHR  | 1886 | 0.18 | 1.32 | 0.00 | 23.00 |
| R5RIRCAREHR  | 1490 | 0.23 | 1.76 | 0.00 | 30.00 |
| S1RIRCAREHR  | 950  | 0.17 | 1.75 | 0.00 | 25.00 |
| S2RIRCAREHR  | 803  | 0.05 | 0.55 | 0.00 | 10.00 |
| S3RIRCAREHR  | 931  | 0.12 | 1.46 | 0.00 | 24.00 |
| S4RIRCAREHR  | 969  | 0.05 | 0.82 | 0.00 | 21.00 |
| S5RIRCAREHR  | 638  | 0.07 | 1.24 | 0.00 | 30.00 |
| R1RIRCAREHRM | 1417 | 0.00 | 0.00 | 0.00 | 0.00  |
| R2RIRCAREHRM | 1309 | 0.00 | 0.00 | 0.00 | 0.00  |
| R3RIRCAREHRM | 1663 | 0.00 | 0.04 | 0.00 | 1.00  |
| R4RIRCAREHRM | 1887 | 0.00 | 0.02 | 0.00 | 1.00  |
| R5RIRCAREHRM | 1491 | 0.00 | 0.05 | 0.00 | 2.00  |
| S1RIRCAREHRM | 950  | 0.00 | 0.00 | 0.00 | 0.00  |
| S2RIRCAREHRM | 803  | 0.00 | 0.00 | 0.00 | 0.00  |
| S3RIRCAREHRM | 931  | 0.00 | 0.00 | 0.00 | 0.00  |
| S4RIRCAREHRM | 969  | 0.00 | 0.00 | 0.00 | 0.00  |
| S5RIRCAREHRM | 638  | 0.00 | 0.00 | 0.00 | 0.00  |

## Categorical Variable Codes

| Value-----                    | R1RIRCARE | R2RIRCARE | R3RIRCARE | R4RIRCARE | R5RIRCARE |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         |           |           | 1         | 5         |           |
| .h:no help received           | 267       | 204       | 658       | 605       | 406       |
| .m:Missing                    | 38        | 30        |           | 40        | 17        |
| .p:Proxy interview, not asked | 1032      | 1161      | 1275      | 929       | 1328      |
| .r:Refuse                     | 13        | 1         | 1         | 1         | 12        |
| .x:no difficulty              | 12419     | 10999     | 12125     | 11312     | 13860     |
| 0.No                          | 1364      | 1246      | 1596      | 1820      | 1421      |
| 1.Yes                         | 53        | 63        | 67        | 67        | 70        |
| Value-----                    | S1RIRCARE | S2RIRCARE | S3RIRCARE | S4RIRCARE | S5RIRCARE |
| .d:DK                         |           |           | 1         | 5         |           |
| .h:no help received           | 154       | 202       | 487       | 406       | 205       |
| .m:Missing                    | 13        | 6         |           | 10        | 2         |
| .p:Proxy interview, not asked | 660       | 814       | 726       | 470       | 560       |
| .r:Refuse                     | 8         | 1         |           |           | 6         |
| .u:Unmar                      | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      | 333       | 131       | 349       | 280       | 501       |
| .x:no difficulty              | 8863      | 7738      | 8447      | 7792      | 6050      |
| 0.No                          | 937       | 796       | 919       | 962       | 632       |
| 1.Yes                         | 13        | 7         | 12        | 7         | 6         |

## How Constructed

The following variables indicate whether any of the respondent's relatives help the respondent with any IADL needs. The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. If the respondent reports having difficulty with an IADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with IADLs. The information used to derive these variables is taken from the help files in Waves 1 and 2 and from the individual files in Waves 3 and forward. For each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest

level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

The following variables are coded as special missing value .x if the respondent reports no difficulty with any IADL, and are coded as special missing value .h if the respondent reports difficulty with an IADL but does not receive any help. Don't know, refused, or other missing responses are assigned special missing values .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwRIRCARE, RwRIRCAREN, RwRIRCAREDPM, RwRIRCAREDPMM, RwRIRCAREHR, and RwRIRCAREHRM include help from the respondent's parent or other relative.

RwRIRCARE indicates whether any of the respondent's relatives help the respondent with IADL needs. RwRIRCAREN indicates the number of the respondent's relatives who help the respondent with IADL needs. RwRIRCARE is coded as 0 if none of the respondent's relatives help the respondent with IADLS; and is coded as 1 if at least one of the respondent's relatives help the respondent with IADLS.

RwRIRCAREDPM indicates the number of total days per month the respondent's relatives help the respondent with IADL needs. If the respondent reports receiving help every day from that relative, then a value of 30 is assumed. RwRIRCAREDPM is the sum of days per month for all relative helpers, and so values can be over 30 days. RwRIRCAREDPM is calculated as long as there is one non-missing value. RwRIRCAREDPM is assigned a value of 0 if the respondent did not receive help from any relatives. RwRIRCAREDPMM indicates the number of relatives who helped the respondent for whom no value of days was reported and was not accounted for in RwRIRCAREDPM. RwRIRCAREDPMM is assigned special missing value .m if the respondent was not helped by any relatives.

RwRIRCAREHR indicates the number of hours per day the respondent's relatives help the respondent with IADL needs. Respondents are asked, on days their relatives help, how many hours per day that is. If the respondent reports less than an hour for that relative, then a 1 is assumed. RwRIRCAREHR is the sum of hours per day for all relative helpers, and so values can be over 24 hours. RwRIRCAREHR is calculated as long as there is one non-missing value. RwRIRCAREHR is assigned a value of 0 if the respondent did not receive help from any relatives. RwRIRCAREHRM indicates the number of relatives who helped the respondent for whom no value of hours was reported and was not accounted for in RwRIRCAREHR. RwRIRCAREHRM is assigned special missing value .m if the respondent was not helped by any relatives.

SwRIRCARE, SwRIRCAREN, SwRIRCAREDPM, and SwRIRCAREHR indicate whether the respondent's current wave's spouse receives help from relatives, the number, and the frequency with which, and their values are taken from RwRIRCARE, RwRIRCAREN, RwRIRCAREDPM, and RwRIRCAREHR. SwRIRCAREDPMM and SwRIRCAREHRM indicate the number of relatives who helped the respondent's current spouse for whom a value was not reported for the number of days and hours and are taken from RwRIRCAREDPMM and RwRIRCAREHRM. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers in Waves 1 and 2, up to 8 caregivers in Waves 3 and 4, and up to 3 caregivers in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, these variables in the Harmonized HRS also include help using the telephone, whereas in the Harmonized MHAS they do not include help using the telephone.

RwRIRCAREDPW in the Harmonized HRS indicates the days per week the respondent received help, while RwRIRCAREDPM in the Harmonized MHAS indicates the days per month the respondent received help. As such, adjustment must be made before comparison of these variables.



The HRS asks for up to 6 relationships of people who help with IADLs (preparing meals, grocery shopping, making phone calls, and taking medications), and up to 2 people who help with managing money. The MHAS, in contrast, asks for the relationships of a varying number of people who help with preparing meals, grocery shopping, taking medications, and managing money together.

## MHAS Variables Used

### Wave 1:

|       |                                      |
|-------|--------------------------------------|
| H26_3 | spouse helps with hot meal           |
| H26_4 | someone helps with hot meal          |
| H27_3 | spouse helps with shopping           |
| H27_4 | someone helps with shopping          |
| H28_3 | spouse helps with taking medication  |
| H28_4 | someone helps with taking medication |
| H29_3 | spouse helps with managing money     |
| H29_4 | someone helps with managing money    |

### Wave 2:

|      |                         |
|------|-------------------------|
| H26D | spouse helps            |
| H26E | additional person helps |
| H27D | spouse helps            |
| H27E | additional person helps |
| H28D | spouse helps            |
| H28E | additional person helps |
| H29D | spouse helps            |
| H29E | additional person helps |

### Wave 3:

|          |   |
|----------|---|
| H26C_12  | Does anyone help you prepare a hot meal         |
| H27C_12  | Does anyone help you shop for groceries         |
| H28C_12  | Does anyone help you take medications           |
| H29C_12  | Does anyone one help you manage your money      |
| H32_1_12 | Relationship with helper for IADLs              |
| H32_2_12 | Relationship with helper for IADLs              |
| H32_3_12 | Relationship with helper for IADLs              |
| H32_4_12 | Relationship with helper for IADLs              |
| H32_5_12 | Relationship with helper for IADLs              |
| H32_6_12 | Relationship with helper for IADLs              |
| H32_7_12 | Relationship with helper for IADLs              |
| H32_8_12 | Relationship with helper for IADLs              |
| H33_1_12 | Registration number of helper for IADLs         |
| H33_2_12 | Registration number of helper for ADLs          |
| H33_3_12 | Registration number of helper for IADLs         |
| H33_4_12 | Registration number of helper for IADLs         |
| H33_5_12 | Registration number of helper for IADLs         |
| H33_6_12 | Registration number of helper for IADLs         |
| H33_7_12 | Registration number of helper for IADLs         |
| H33_8_12 | Registration number of helper for IADLs         |
| H34_1_12 | Number of days (name) helped last month         |
| H34_2_12 | Number of days (name) helped last month         |
| H34_3_12 | Number of days (name) helped last month         |
| H34_4_12 | Number of days (name) helped last month         |
| H34_5_12 | Number of days (name) helped last month         |
| H34_6_12 | Number of days (name) helped last month         |
| H34_7_12 | Number of days (name) helped last month         |
| H34_8_12 | Number of days (name) helped last month         |
| H35_1_12 | Number of hours during those days (NAME) helped |
| H35_2_12 | Number of hours during those days (NAME) helped |
| H35_3_12 | Number of hours during those days (NAME) helped |
| H35_4_12 | Number of hours during those days (NAME) helped |
| H35_5_12 | Number of hours during those days (NAME) helped |
| H35_6_12 | Number of hours during those days (NAME) helped |
| H35_7_12 | Number of hours during those days (NAME) helped |
| H35_8_12 | Number of hours during those days (NAME) helped |

### Wave 4:

|         |  |
|---------|--|
| H26C_15 | Does someone help respondent to prepare a hot meal |
|---------|--|

|          |   |
|----------|---|
| H27C_15  | Does someone help respondent to shop for groceries      |
| H28C_15  | Does someone help respondent to take medications        |
| H29C_15  | Does someone help respondent to manage his/her money    |
| H32_1_15 | Respondent's relationship with person helping with IADL |
| H32_2_15 | Respondent's relationship with person helping with IADL |
| H32_3_15 | Respondent's relationship with person helping with IADL |
| H32_4_15 | Respondent's relationship with person helping with IADL |
| H32_5_15 | Respondent's relationship with person helping with IADL |
| H32_6_15 | Respondent's relationship with person helping with IADL |
| H32_7_15 | Respondent's relationship with person helping with IADL |
| H32_8_15 | Respondent's relationship with person helping with IADL |
| H33_1_15 | Registration number of person helping with IADLs        |
| H33_2_15 | Registration number of person helping with IADLs        |
| H33_3_15 | Registration number of person helping with IADLs        |
| H33_4_15 | Registration number of person helping with IADLs        |
| H33_5_15 | Registration number of person helping with IADLs        |
| H33_6_15 | Registration number of person helping with IADLs        |
| H33_7_15 | Registration number of person helping with IADLs        |
| H33_8_15 | Registration number of person helping with IADLs        |
| H34_1_15 | Number of days the person helped during last month      |
| H34_2_15 | Number of days the person helped during last month      |
| H34_3_15 | Number of days the person helped during last month      |
| H34_4_15 | Number of days the person helped during last month      |
| H34_5_15 | Number of days the person helped during last month      |
| H34_6_15 | Number of days the person helped during last month      |
| H34_7_15 | Number of days the person helped during last month      |
| H34_8_15 | Number of days the person helped during last month      |
| H35_1_15 | Number of hours during those days that the person helps |
| H35_2_15 | Number of hours during those days that the person helps |
| H35_3_15 | Number of hours during those days that the person helps |
| H35_4_15 | Number of hours during those days that the person helps |
| H35_5_15 | Number of hours during those days that the person helps |
| H35_6_15 | Number of hours during those days that the person helps |
| H35_7_15 | Number of hours during those days that the person helps |
| H35_8_15 | Number of hours during those days that the person helps |

## Wave 5:

|          |   |
|----------|---|
| H26C_18  | Does someone help R to prepare a hot meal               |
| H27C_18  | Does someone help R to shop for groceries               |
| H28C_18  | Does someone help R to take medications                 |
| H29C_18  | Does someone help R to manage his/her money             |
| H32_1_18 | R's relationship with person helping with IADLs         |
| H32_2_18 | R's relationship with person helping with IADLs         |
| H32_3_18 | R's relationship with person helping with IADLs         |
| H33_1_18 | Registration number of person helping with IADLs        |
| H33_2_18 | Registration number of person helping with IADLs        |
| H33_3_18 | Registration number of person helping with IADLs        |
| H34_1_18 | Number of days the person helped during last month      |
| H34_2_18 | Number of days the person helped during last month      |
| H34_3_18 | Number of days the person helped during last month      |
| H35_1_18 | Number of hours during those days that the person helps |
| H35_2_18 | Number of hours during those days that the person helps |
| H35_3_18 | Number of hours during those days that the person helps |

|   |
|---|
| <b>Instrumental Activities of Daily Living: Receives Informal Care from Other Individuals</b> |
|---|

| Wave | Variable      | Label  | Type  |
|------|---------------|--|-------|
| 1    | R1RIFCARE     | r1rifcare: w1 R receives informal care from non-relatives fo | Categ |
| 2    | R2RIFCARE     | r2rifcare: w2 R receives informal care from non-relatives fo | Categ |
| 3    | R3RIFCARE     | r3rifcare: w3 R receives informal care from non-relatives fo | Categ |
| 4    | R4RIFCARE     | r4rifcare: w4 R receives informal care from non-relatives fo | Categ |
| 5    | R5RIFCARE     | r5rifcare: w5 R receives informal care from non-relatives fo | Categ |
|      |               |  |       |
| 1    | S1RIFCARE     | s1rifcare: w1 S receives informal care from non-relatives fo | Categ |
| 2    | S2RIFCARE     | s2rifcare: w2 S receives informal care from non-relatives fo | Categ |
| 3    | S3RIFCARE     | s3rifcare: w3 S receives informal care from non-relatives fo | Categ |
| 4    | S4RIFCARE     | s4rifcare: w4 S receives informal care from non-relatives fo | Categ |
| 5    | S5RIFCARE     | s5rifcare: w5 S receives informal care from non-relatives fo | Categ |
|      |               |  |       |
| 1    | R1RIFCAREN    | r1rifcaren: w1 # non-relatives who help R with IADLs         | Cont  |
| 2    | R2RIFCAREN    | r2rifcaren: w2 # non-relatives who help R with IADLs         | Cont  |
| 3    | R3RIFCAREN    | r3rifcaren: w3 # non-relatives who help R with IADLs         | Cont  |
| 4    | R4RIFCAREN    | r4rifcaren: w4 # non-relatives who help R with IADLs         | Cont  |
| 5    | R5RIFCAREN    | r5rifcaren: w5 # non-relatives who help R with IADLs         | Cont  |
|      |               |  |       |
| 1    | S1RIFCAREN    | s1rifcaren: w1 # non-relatives who help S with IADLs         | Cont  |
| 2    | S2RIFCAREN    | s2rifcaren: w2 # non-relatives who help S with IADLs         | Cont  |
| 3    | S3RIFCAREN    | s3rifcaren: w3 # non-relatives who help S with IADLs         | Cont  |
| 4    | S4RIFCAREN    | s4rifcaren: w4 # non-relatives who help S with IADLs         | Cont  |
| 5    | S5RIFCAREN    | s5rifcaren: w5 # non-relatives who help S with IADLs         | Cont  |
|      |               |  |       |
| 1    | R1RIFCAREDPM  | r1rifcaredpm: w1 days/month non-relatives help R with IADLs  | Cont  |
| 2    | R2RIFCAREDPM  | r2rifcaredpm: w2 days/month non-relatives help R with IADLs  | Cont  |
| 3    | R3RIFCAREDPM  | r3rifcaredpm: w3 days/month non-relatives help R with IADLs  | Cont  |
| 4    | R4RIFCAREDPM  | r4rifcaredpm: w4 days/month non-relatives help R with IADLs  | Cont  |
| 5    | R5RIFCAREDPM  | r5rifcaredpm: w5 days/month non-relatives help R with IADLs  | Cont  |
|      |               |  |       |
| 1    | S1RIFCAREDPM  | s1rifcaredpm: w1 days/month non-relatives help S with IADLs  | Cont  |
| 2    | S2RIFCAREDPM  | s2rifcaredpm: w2 days/month non-relatives help S with IADLs  | Cont  |
| 3    | S3RIFCAREDPM  | s3rifcaredpm: w3 days/month non-relatives help S with IADLs  | Cont  |
| 4    | S4RIFCAREDPM  | s4rifcaredpm: w4 days/month non-relatives help S with IADLs  | Cont  |
| 5    | S5RIFCAREDPM  | s5rifcaredpm: w5 days/month non-relatives help S with IADLs  | Cont  |
|      |               |  |       |
| 1    | R1RIFCAREDPMM | r1rifcaredpmm: w1 R # non-relatives missing days of help for | Cont  |
| 2    | R2RIFCAREDPMM | r2rifcaredpmm: w2 R # non-relatives missing days of help for | Cont  |
| 3    | R3RIFCAREDPMM | r3rifcaredpmm: w3 R # non-relatives missing days of help for | Cont  |
| 4    | R4RIFCAREDPMM | r4rifcaredpmm: w4 R # non-relatives missing days of help for | Cont  |
| 5    | R5RIFCAREDPMM | r5rifcaredpmm: w5 R # non-relatives missing days of help for | Cont  |
|      |               |  |       |
| 1    | S1RIFCAREDPMM | s1rifcaredpmm: w1 S # non-relatives missing days of help for | Cont  |
| 2    | S2RIFCAREDPMM | s2rifcaredpmm: w2 S # non-relatives missing days of help for | Cont  |
| 3    | S3RIFCAREDPMM | s3rifcaredpmm: w3 S # non-relatives missing days of help for | Cont  |
| 4    | S4RIFCAREDPMM | s4rifcaredpmm: w4 S # non-relatives missing days of help for | Cont  |
| 5    | S5RIFCAREDPMM | s5rifcaredpmm: w5 S # non-relatives missing days of help for | Cont  |
|      |               |  |       |
| 1    | R1RIFCAREHR   | r1rifcarehr: w1 hours/day non-relatives help R with IADLs    | Cont  |
| 2    | R2RIFCAREHR   | r2rifcarehr: w2 hours/day non-relatives help R with IADLs    | Cont  |
| 3    | R3RIFCAREHR   | r3rifcarehr: w3 hours/day non-relatives help R with IADLs    | Cont  |
| 4    | R4RIFCAREHR   | r4rifcarehr: w4 hours/day non-relatives help R with IADLs    | Cont  |
| 5    | R5RIFCAREHR   | r5rifcarehr: w5 hours/day non-relatives help R with IADLs    | Cont  |
|      |               |  |       |
| 1    | S1RIFCAREHR   | s1rifcarehr: w1 hours/day non-relatives help S with IADLs    | Cont  |
| 2    | S2RIFCAREHR   | s2rifcarehr: w2 hours/day non-relatives help S with IADLs    | Cont  |
| 3    | S3RIFCAREHR   | s3rifcarehr: w3 hours/day non-relatives help S with IADLs    | Cont  |
| 4    | S4RIFCAREHR   | s4rifcarehr: w4 hours/day non-relatives help S with IADLs    | Cont  |
| 5    | S5RIFCAREHR   | s5rifcarehr: w5 hours/day non-relatives help S with IADLs    | Cont  |

|   |              |                  |                   |                           |      |
|---|--------------|------------------|-------------------|---------------------------|------|
| 1 | R1RIFCAREHRM | r1rifcarehrm: w1 | R # non-relatives | missing hours of help for | Cont |
| 2 | R2RIFCAREHRM | r2rifcarehrm: w2 | R # non-relatives | missing hours of help for | Cont |
| 3 | R3RIFCAREHRM | r3rifcarehrm: w3 | R # non-relatives | missing hours of help for | Cont |
| 4 | R4RIFCAREHRM | r4rifcarehrm: w4 | R # non-relatives | missing hours of help for | Cont |
| 5 | R5RIFCAREHRM | r5rifcarehrm: w5 | R # non-relatives | missing hours of help for | Cont |
|   |              |                  |                   |                           |      |
| 1 | S1RIFCAREHRM | s1rifcarehrm: w1 | S # non-relatives | missing hours of help for | Cont |
| 2 | S2RIFCAREHRM | s2rifcarehrm: w2 | S # non-relatives | missing hours of help for | Cont |
| 3 | S3RIFCAREHRM | s3rifcarehrm: w3 | S # non-relatives | missing hours of help for | Cont |
| 4 | S4RIFCAREHRM | s4rifcarehrm: w4 | S # non-relatives | missing hours of help for | Cont |
| 5 | S5RIFCAREHRM | s5rifcarehrm: w5 | S # non-relatives | missing hours of help for | Cont |

## Descriptive Statistics

| Variable      | N    | Mean | Std Dev | Minimum | Maximum |
|---------------|------|------|---------|---------|---------|
|               |      |      |         |         |         |
| R1RIFCARE     | 1417 | 0.03 | 0.16    | 0.00    | 1.00    |
| R2RIFCARE     | 1309 | 0.03 | 0.18    | 0.00    | 1.00    |
| R3RIFCARE     | 1663 | 0.03 | 0.18    | 0.00    | 1.00    |
| R4RIFCARE     | 1887 | 0.03 | 0.16    | 0.00    | 1.00    |
| R5RIFCARE     | 1491 | 0.05 | 0.23    | 0.00    | 1.00    |
|               |      |      |         |         |         |
| S1RIFCARE     | 950  | 0.01 | 0.09    | 0.00    | 1.00    |
| S2RIFCARE     | 803  | 0.02 | 0.14    | 0.00    | 1.00    |
| S3RIFCARE     | 931  | 0.01 | 0.11    | 0.00    | 1.00    |
| S4RIFCARE     | 969  | 0.01 | 0.09    | 0.00    | 1.00    |
| S5RIFCARE     | 638  | 0.05 | 0.21    | 0.00    | 1.00    |
|               |      |      |         |         |         |
| R1RIFCAREN    | 1417 | 0.03 | 0.22    | 0.00    | 4.00    |
| R2RIFCAREN    | 1309 | 0.03 | 0.18    | 0.00    | 1.00    |
| R3RIFCAREN    | 1663 | 0.04 | 0.21    | 0.00    | 4.00    |
| R4RIFCAREN    | 1887 | 0.03 | 0.17    | 0.00    | 2.00    |
| R5RIFCAREN    | 1491 | 0.06 | 0.26    | 0.00    | 3.00    |
|               |      |      |         |         |         |
| S1RIFCAREN    | 950  | 0.01 | 0.11    | 0.00    | 2.00    |
| S2RIFCAREN    | 803  | 0.02 | 0.14    | 0.00    | 1.00    |
| S3RIFCAREN    | 931  | 0.01 | 0.11    | 0.00    | 1.00    |
| S4RIFCAREN    | 969  | 0.01 | 0.09    | 0.00    | 1.00    |
| S5RIFCAREN    | 638  | 0.05 | 0.24    | 0.00    | 3.00    |
|               |      |      |         |         |         |
| R1RIFCAREDPM  | 1417 | 0.76 | 5.83    | 0.00    | 120.00  |
| R2RIFCAREDPM  | 1309 | 0.76 | 4.58    | 0.00    | 30.00   |
| R3RIFCAREDPM  | 1663 | 0.69 | 4.36    | 0.00    | 42.00   |
| R4RIFCAREDPM  | 1886 | 0.38 | 3.05    | 0.00    | 34.00   |
| R5RIFCAREDPM  | 1485 | 1.20 | 6.04    | 0.00    | 60.00   |
|               |      |      |         |         |         |
| S1RIFCAREDPM  | 950  | 0.17 | 2.29    | 0.00    | 46.00   |
| S2RIFCAREDPM  | 803  | 0.42 | 3.41    | 0.00    | 30.00   |
| S3RIFCAREDPM  | 931  | 0.15 | 1.82    | 0.00    | 30.00   |
| S4RIFCAREDPM  | 969  | 0.14 | 1.95    | 0.00    | 30.00   |
| S5RIFCAREDPM  | 636  | 1.07 | 5.44    | 0.00    | 30.00   |
|               |      |      |         |         |         |
| R1RIFCAREDPMM | 1417 | 0.00 | 0.00    | 0.00    | 0.00    |
| R2RIFCAREDPMM | 1309 | 0.00 | 0.00    | 0.00    | 0.00    |
| R3RIFCAREDPMM | 1663 | 0.00 | 0.00    | 0.00    | 0.00    |
| R4RIFCAREDPMM | 1887 | 0.00 | 0.02    | 0.00    | 1.00    |
| R5RIFCAREDPMM | 1491 | 0.00 | 0.06    | 0.00    | 1.00    |
|               |      |      |         |         |         |
| S1RIFCAREDPMM | 950  | 0.00 | 0.00    | 0.00    | 0.00    |
| S2RIFCAREDPMM | 803  | 0.00 | 0.00    | 0.00    | 0.00    |
| S3RIFCAREDPMM | 931  | 0.00 | 0.00    | 0.00    | 0.00    |
| S4RIFCAREDPMM | 969  | 0.00 | 0.00    | 0.00    | 0.00    |
| S5RIFCAREDPMM | 638  | 0.00 | 0.06    | 0.00    | 1.00    |

|              |      |      |      |      |       |
|--------------|------|------|------|------|-------|
| R1RIFCAREHR  | 1417 | 0.10 | 0.93 | 0.00 | 24.00 |
| R2RIFCAREHR  | 1309 | 0.11 | 0.83 | 0.00 | 12.00 |
| R3RIFCAREHR  | 1662 | 0.14 | 1.25 | 0.00 | 24.00 |
| R4RIFCAREHR  | 1886 | 0.11 | 0.98 | 0.00 | 24.00 |
| R5RIFCAREHR  | 1485 | 0.18 | 1.20 | 0.00 | 24.00 |
|              |      |      |      |      |       |
| S1RIFCAREHR  | 950  | 0.03 | 0.39 | 0.00 | 10.00 |
| S2RIFCAREHR  | 803  | 0.07 | 0.66 | 0.00 | 12.00 |
| S3RIFCAREHR  | 930  | 0.04 | 0.49 | 0.00 | 10.00 |
| S4RIFCAREHR  | 969  | 0.03 | 0.43 | 0.00 | 12.00 |
| S5RIFCAREHR  | 636  | 0.19 | 1.40 | 0.00 | 24.00 |
|              |      |      |      |      |       |
| R1RIFCAREHRM | 1417 | 0.00 | 0.00 | 0.00 | 0.00  |
| R2RIFCAREHRM | 1309 | 0.00 | 0.00 | 0.00 | 0.00  |
| R3RIFCAREHRM | 1663 | 0.00 | 0.02 | 0.00 | 1.00  |
| R4RIFCAREHRM | 1887 | 0.00 | 0.02 | 0.00 | 1.00  |
| R5RIFCAREHRM | 1491 | 0.00 | 0.06 | 0.00 | 1.00  |
|              |      |      |      |      |       |
| S1RIFCAREHRM | 950  | 0.00 | 0.00 | 0.00 | 0.00  |
| S2RIFCAREHRM | 803  | 0.00 | 0.00 | 0.00 | 0.00  |
| S3RIFCAREHRM | 931  | 0.00 | 0.03 | 0.00 | 1.00  |
| S4RIFCAREHRM | 969  | 0.00 | 0.00 | 0.00 | 0.00  |
| S5RIFCAREHRM | 638  | 0.00 | 0.06 | 0.00 | 1.00  |

## Categorical Variable Codes

| Value-----                    | R1RIFCARE | R2RIFCARE | R3RIFCARE | R4RIFCARE | R5RIFCARE |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         |           |           | 1         | 5         |           |
| .h:no help received           | 267       | 204       | 658       | 605       | 406       |
| .m:Missing                    | 38        | 30        |           | 40        | 17        |
| .p:Proxy interview, not asked | 1032      | 1161      | 1275      | 929       | 1328      |
| .r:Refuse                     | 13        | 1         | 1         | 1         | 12        |
| .x:no difficulty              | 12419     | 10999     | 12125     | 11312     | 13860     |
| 0.No                          | 1378      | 1264      | 1605      | 1837      | 1409      |
| 1.Yes                         | 39        | 45        | 58        | 50        | 82        |
|                               |           |           |           |           |           |
| Value-----                    | S1RIFCARE | S2RIFCARE | S3RIFCARE | S4RIFCARE | S5RIFCARE |
| .d:DK                         |           |           | 1         | 5         |           |
| .h:no help received           | 154       | 202       | 487       | 406       | 205       |
| .m:Missing                    | 13        | 6         |           | 10        | 2         |
| .p:Proxy interview, not asked | 660       | 814       | 726       | 470       | 560       |
| .r:Refuse                     | 8         | 1         |           |           | 6         |
| .u:Unmar                      | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      | 333       | 131       | 349       | 280       | 501       |
| .x:no difficulty              | 8863      | 7738      | 8447      | 7792      | 6050      |
| 0.No                          | 942       | 787       | 919       | 961       | 608       |
| 1.Yes                         | 8         | 16        | 12        | 8         | 30        |

## How Constructed

The following variables indicate whether any non-relative helps the respondent with any IADL needs. The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. If the respondent reports having difficulty with an IADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with IADLs. The information used to derive these variables is taken from the help files in Waves 1 and 2 and from the individual files in Waves 3 and forward. For each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of

care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

The following variables are coded as special missing value .x if the respondent reports no difficulty with any IADL, and are coded as special missing value .h if the respondent reports difficulty with an IADL but does not receive any help. Don't know, refused, or other missing responses are assigned special missing values .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwRIFCARE, RwRIFCAREN, RwRIFCAREDPM, RwRIFCAREDPMM, RwRIFCAREHR, and RwRIFCAREHRM include help from another person (not their spouse, child, child-in-law, grandchild, parent, other relative, or paid person).

RwRIFCARE indicates whether any of the respondent's non-relatives help the respondent with IADL needs. RwRIFCAREN indicates the number of the respondent's non-relatives who help the respondent with IADL needs. RwRIFCARE is coded as 0 if none of the respondent's non-relatives help the respondent with IADLs; and is coded as 1 if at least one of the respondent's non-relatives help the respondent with IADLs.

RwRIFCAREDPM indicates the number of total days per month the respondent's non-relatives help the respondent with IADL needs. If the respondent reports receiving help every day from that non-relative, then a value of 30 is assumed. RwRIFCAREDPM is the sum of days per month for all non-relative helpers, and so values can be over 30 days. RwRIFCAREDPM is calculated as long as there is one non-missing value. RwRIFCAREDPM is assigned a value of 0 if the respondent did not receive help from any non-relatives. RwRIFCAREDPMM indicates the number of non-relatives who helped the respondent for whom no value of days was reported and was not accounted for in RwRIFCAREDPM. RwRIFCAREDPMM is assigned special missing value .m if the respondent was not helped by any non-relatives.

RwRIFCAREHR indicates the number of hours per day the respondent's non-relatives help the respondent with IADL needs. Respondents are asked, on days their non-relatives help, how many hours per day that is. If the respondent reports less than an hour for that non-relative, then a 1 is assumed. RwRIFCAREHR is the sum of hours per day for all non-relative helpers, and so values can be over 24 hours. RwRIFCAREHR is calculated as long as there is one non-missing value. RwRIFCAREHR is assigned a value of 0 if the respondent did not receive help from any non-relatives. RwRIFCAREHRM indicates the number of non-relatives who helped the respondent for whom no value of hours was reported and was not accounted for in RwRIFCAREHR. RwRIFCAREHRM is assigned special missing value .m if the respondent was not helped by any non-relatives.

SwRIFCARE, SwRIFCAREN, SwRIFCAREDPM, and SwRIFCAREHR indicate whether the respondent's current wave's spouse receives help from non-relatives, the number, and the frequency with which, and their values are taken from RwRIFCARE, RwRIFCAREN, RwRIFCAREDPM, and RwRIFCAREHR. SwRIFCAREDPMM and SwRIFCAREHRM indicate the number of non-relatives who helped the respondent's current spouse for whom a value was not reported for the number of days and hours and are taken from RwRIFCAREDPMM and RwRIFCAREHRM. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers in Waves 1 and 2, up to 8 caregivers in Waves 3 and 4, and up to 3 caregivers in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, these variables in the Harmonized HRS also include help using the telephone, whereas in the Harmonized MHAS they do not include help using the telephone.

RwRIFCAREDPW in the Harmonized HRS indicates the days per week the respondent received help, while RwRIFCAREDPM in the Harmonized MHAS indicates the days per month the respondent received help. As such, adjustment must be made before comparison of these variables.

The HRS asks for up to 6 relationships of people who help with IADLs (preparing meals, grocery shopping, making phone calls, and taking medications), and up to 2 people who help with managing money. The MHAS, in contrast, asks for the relationships of a varying number of people who help with preparing meals, grocery shopping, taking medications, and managing money together.

## MHAS Variables Used

### Wave 1:

|       |                                      |
|-------|--------------------------------------|
| H26_3 | spouse helps with hot meal           |
| H26_4 | someone helps with hot meal          |
| H27_3 | spouse helps with shopping           |
| H27_4 | someone helps with shopping          |
| H28_3 | spouse helps with taking medication  |
| H28_4 | someone helps with taking medication |
| H29_3 | spouse helps with managing money     |
| H29_4 | someone helps with managing money    |

### Wave 2:

|      |                         |
|------|-------------------------|
| H26D | spouse helps            |
| H26E | additional person helps |
| H27D | spouse helps            |
| H27E | additional person helps |
| H28D | spouse helps            |
| H28E | additional person helps |
| H29D | spouse helps            |
| H29E | additional person helps |

### Wave 3:

|          |   |
|----------|---|
| H26C_12  | Does anyone help you prepare a hot meal         |
| H27C_12  | Does anyone help you shop for groceries         |
| H28C_12  | Does anyone help you take medications           |
| H29C_12  | Does anyone one help you manage your money      |
| H32_1_12 | Relationship with helper for IADLs              |
| H32_2_12 | Relationship with helper for IADLs              |
| H32_3_12 | Relationship with helper for IADLs              |
| H32_4_12 | Relationship with helper for IADLs              |
| H32_5_12 | Relationship with helper for IADLs              |
| H32_6_12 | Relationship with helper for IADLs              |
| H32_7_12 | Relationship with helper for IADLs              |
| H32_8_12 | Relationship with helper for IADLs              |
| H33_1_12 | Registration number of helper for IADLs         |
| H33_2_12 | Registration number of helper for ADLs          |
| H33_3_12 | Registration number of helper for IADLs         |
| H33_4_12 | Registration number of helper for IADLs         |
| H33_5_12 | Registration number of helper for IADLs         |
| H33_6_12 | Registration number of helper for IADLs         |
| H33_7_12 | Registration number of helper for IADLs         |
| H33_8_12 | Registration number of helper for IADLs         |
| H34_1_12 | Number of days (name) helped last month         |
| H34_2_12 | Number of days (name) helped last month         |
| H34_3_12 | Number of days (name) helped last month         |
| H34_4_12 | Number of days (name) helped last month         |
| H34_5_12 | Number of days (name) helped last month         |
| H34_6_12 | Number of days (name) helped last month         |
| H34_7_12 | Number of days (name) helped last month         |
| H34_8_12 | Number of days (name) helped last month         |
| H35_1_12 | Number of hours during those days (NAME) helped |
| H35_2_12 | Number of hours during those days (NAME) helped |
| H35_3_12 | Number of hours during those days (NAME) helped |
| H35_4_12 | Number of hours during those days (NAME) helped |
| H35_5_12 | Number of hours during those days (NAME) helped |
| H35_6_12 | Number of hours during those days (NAME) helped |
| H35_7_12 | Number of hours during those days (NAME) helped |
| H35_8_12 | Number of hours during those days (NAME) helped |

### Wave 4:

|          |   |
|----------|---|
| H26C_15  | Does someone help respondent to prepare a hot meal      |
| H27C_15  | Does someone help respondent to shop for groceries      |
| H28C_15  | Does someone help respondent to take medications        |
| H29C_15  | Does someone help respondent to manage his/her money    |
| H32_1_15 | Respondent's relationship with person helping with IADL |
| H32_2_15 | Respondent's relationship with person helping with IADL |
| H32_3_15 | Respondent's relationship with person helping with IADL |
| H32_4_15 | Respondent's relationship with person helping with IADL |
| H32_5_15 | Respondent's relationship with person helping with IADL |
| H32_6_15 | Respondent's relationship with person helping with IADL |
| H32_7_15 | Respondent's relationship with person helping with IADL |
| H32_8_15 | Respondent's relationship with person helping with IADL |
| H33_1_15 | Registration number of person helping with IADLs        |
| H33_2_15 | Registration number of person helping with IADLs        |
| H33_3_15 | Registration number of person helping with IADLs        |
| H33_4_15 | Registration number of person helping with IADLs        |
| H33_5_15 | Registration number of person helping with IADLs        |
| H33_6_15 | Registration number of person helping with IADLs        |
| H33_7_15 | Registration number of person helping with IADLs        |
| H33_8_15 | Registration number of person helping with IADLs        |
| H34_1_15 | Number of days the person helped during last month      |
| H34_2_15 | Number of days the person helped during last month      |
| H34_3_15 | Number of days the person helped during last month      |
| H34_4_15 | Number of days the person helped during last month      |
| H34_5_15 | Number of days the person helped during last month      |
| H34_6_15 | Number of days the person helped during last month      |
| H34_7_15 | Number of days the person helped during last month      |
| H34_8_15 | Number of days the person helped during last month      |
| H35_1_15 | Number of hours during those days that the person helps |
| H35_2_15 | Number of hours during those days that the person helps |
| H35_3_15 | Number of hours during those days that the person helps |
| H35_4_15 | Number of hours during those days that the person helps |
| H35_5_15 | Number of hours during those days that the person helps |
| H35_6_15 | Number of hours during those days that the person helps |
| H35_7_15 | Number of hours during those days that the person helps |
| H35_8_15 | Number of hours during those days that the person helps |

## Wave 5:

|          |   |
|----------|---|
| H26C_18  | Does someone help R to prepare a hot meal               |
| H27C_18  | Does someone help R to shop for groceries               |
| H28C_18  | Does someone help R to take medications                 |
| H29C_18  | Does someone help R to manage his/her money             |
| H32_1_18 | R's relationship with person helping with IADLs         |
| H32_2_18 | R's relationship with person helping with IADLs         |
| H32_3_18 | R's relationship with person helping with IADLs         |
| H33_1_18 | Registration number of person helping with IADLs        |
| H33_2_18 | Registration number of person helping with IADLs        |
| H33_3_18 | Registration number of person helping with IADLs        |
| H34_1_18 | Number of days the person helped during last month      |
| H34_2_18 | Number of days the person helped during last month      |
| H34_3_18 | Number of days the person helped during last month      |
| H35_1_18 | Number of hours during those days that the person helps |
| H35_2_18 | Number of hours during those days that the person helps |
| H35_3_18 | Number of hours during those days that the person helps |



Instrumental Activities of Daily Living: Whether Receives Any Formal Care

| Wave | Variable  | Label  | Type  |
|------|-----------|--|-------|
| 1    | R1RIFAANY | r1rifaany: w1 R receives any formal care for IADLs | Categ |
| 2    | R2RIFAANY | r2rifaany: w2 R receives any formal care for IADLs | Categ |
| 3    | R3RIFAANY | r3rifaany: w3 R receives any formal care for IADLs | Categ |
| 4    | R4RIFAANY | r4rifaany: w4 R receives any formal care for IADLs | Categ |
| 5    | R5RIFAANY | r5rifaany: w5 R receives any formal care for IADLs | Categ |
| 1    | S1RIFAANY | s1rifaany: w1 S receives any formal care for IADLs | Categ |
| 2    | S2RIFAANY | s2rifaany: w2 S receives any formal care for IADLs | Categ |
| 3    | S3RIFAANY | s3rifaany: w3 S receives any formal care for IADLs | Categ |
| 4    | S4RIFAANY | s4rifaany: w4 S receives any formal care for IADLs | Categ |
| 5    | S5RIFAANY | s5rifaany: w5 S receives any formal care for IADLs | Categ |

Descriptive Statistics

| Variable  | N    | Mean | Std Dev | Minimum | Maximum |
|-----------|------|------|---------|---------|---------|
| R1RIFAANY | 1684 | 0.02 | 0.14    | 0.00    | 1.00    |
| R2RIFAANY | 1513 | 0.03 | 0.16    | 0.00    | 1.00    |
| R3RIFAANY | 2321 | 0.02 | 0.13    | 0.00    | 1.00    |
| R4RIFAANY | 2492 | 0.02 | 0.13    | 0.00    | 1.00    |
| R5RIFAANY | 1897 | 0.03 | 0.17    | 0.00    | 1.00    |
| S1RIFAANY | 1104 | 0.01 | 0.09    | 0.00    | 1.00    |
| S2RIFAANY | 1005 | 0.01 | 0.11    | 0.00    | 1.00    |
| S3RIFAANY | 1418 | 0.01 | 0.10    | 0.00    | 1.00    |
| S4RIFAANY | 1375 | 0.00 | 0.07    | 0.00    | 1.00    |
| S5RIFAANY | 843  | 0.02 | 0.16    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----                    | R1RIFAANY | R2RIFAANY | R3RIFAANY | R4RIFAANY | R5RIFAANY |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK                         |           |           | 1         | 5         |           |
| .m:Missing                    | 38        | 30        |           | 40        | 17        |
| .p:Proxy interview, not asked | 1032      | 1161      | 1275      | 929       | 1328      |
| .r:Refuse                     | 13        | 1         | 1         | 1         | 12        |
| .x:no difficulty              | 12419     | 10999     | 12125     | 11312     | 13860     |
| 0.No                          | 1649      | 1471      | 2281      | 2449      | 1840      |
| 1.Yes                         | 35        | 42        | 40        | 43        | 57        |
| Value-----                    | S1RIFAANY | S2RIFAANY | S3RIFAANY | S4RIFAANY | S5RIFAANY |
| .d:DK                         |           |           | 1         | 5         |           |
| .m:Missing                    | 13        | 6         |           | 10        | 2         |
| .p:Proxy interview, not asked | 660       | 814       | 726       | 470       | 560       |
| .r:Refuse                     | 8         | 1         |           |           | 6         |
| .u:Unmar                      | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR                      | 333       | 131       | 349       | 280       | 501       |
| .x:no difficulty              | 8863      | 7738      | 8447      | 7792      | 6050      |
| 0.No                          | 1094      | 992       | 1403      | 1369      | 822       |
| 1.Yes                         | 10        | 13        | 15        | 6         | 21        |

How Constructed

RwRIFAANY indicates whether the respondent receives any informal care for difficulties with instrumental activities of daily living (IADL). The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. If the respondent reports having difficulty with an IADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with IADLs. The following relationship is considered to provide formal care: paid person.

Please note that for each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

RwRIFAANY is assigned a value of 0 if the respondent has difficulty with at least one IADL but receives no help with the activity from a formal caregiver, or does not receive any help at all. RwRIFAANY is assigned a value of 1 if the respondent has difficulty with at least one IADL and a formal caregiver helps with at least one of the activities. RwRIFAANY is assigned special missing value .x if the respondent has no difficulty with any IADLs. Don't know, refused, and other missing responses are assigned special missing values .d, .r, and .m, respectively. RwRIFAANY is assigned a blank missing (.) if the respondent did not participate in the current wave.

SwRIFAANY indicates whether the respondent's current wave's spouse receives any formal care for difficulties with IADLs, and its values are taken from RwRIFAANY. In addition to the special missing codes employed by RwRIFAANY, SwRIFAANY employs two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers in Waves 1 and 2, up to 8 caregivers in Waves 3 and 4, and up to 3 caregivers in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible. Please note that the Harmonized HRS includes categories for paid formal helpers and unpaid formal helpers, while the Harmonized MHAS only includes categories for paid formal helpers.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, RwRIFAANY in the Harmonized HRS also includes help using the telephone, whereas RwRIFAANY in the Harmonized MHAS does not include help using the telephone.

## MHAS Variables Used

### Wave 1:

|       |                                      |
|-------|--------------------------------------|
| H26_3 | spouse helps with hot meal           |
| H26_4 | someone helps with hot meal          |
| H27_3 | spouse helps with shopping           |
| H27_4 | someone helps with shopping          |
| H28_3 | spouse helps with taking medication  |
| H28_4 | someone helps with taking medication |
| H29_3 | spouse helps with managing money     |
| H29_4 | someone helps with managing money    |

### Wave 1 Helper:

|     |                         |
|-----|-------------------------|
| H32 | kinship of helper       |
| H33 | roster number of helper |

### Wave 2:

|      |                         |
|------|-------------------------|
| H26D | spouse helps            |
| H26E | additional person helps |
| H27D | spouse helps            |
| H27E | additional person helps |
| H28D | spouse helps            |

|                |   |
|----------------|---|
| H28E           | additional person helps                                 |
| H29D           | spouse helps  |
| H29E           | additional person helps                                 |
| Wave 2 Helper: |   |
| H32            | relationship  |
| H33            | registration number                                     |
| Wave 3:        |   |
| H26C_12        | Does anyone help you prepare a hot meal                 |
| H27C_12        | Does anyone help you shop for groceries                 |
| H28C_12        | Does anyone help you take medications                   |
| H29C_12        | Does anyone one help you manage your money              |
| H32_1_12       | Relationship with helper for IADLs                      |
| H32_2_12       | Relationship with helper for IADLs                      |
| H32_3_12       | Relationship with helper for IADLs                      |
| H32_4_12       | Relationship with helper for IADLs                      |
| H32_5_12       | Relationship with helper for IADLs                      |
| H32_6_12       | Relationship with helper for IADLs                      |
| H32_7_12       | Relationship with helper for IADLs                      |
| H32_8_12       | Relationship with helper for IADLs                      |
| H33_1_12       | Registration number of helper for IADLs                 |
| H33_2_12       | Registration number of helper for ADLs                  |
| H33_3_12       | Registration number of helper for IADLs                 |
| H33_4_12       | Registration number of helper for IADLs                 |
| H33_5_12       | Registration number of helper for IADLs                 |
| H33_6_12       | Registration number of helper for IADLs                 |
| H33_7_12       | Registration number of helper for IADLs                 |
| H33_8_12       | Registration number of helper for IADLs                 |
| Wave 4:        |   |
| H26C_15        | Does someone help respondent to prepare a hot meal      |
| H27C_15        | Does someone help respondent to shop for groceries      |
| H28C_15        | Does someone help respondent to take medications        |
| H29C_15        | Does someone help respondent to manage his/her money    |
| H32_1_15       | Respondent's relationship with person helping with IADL |
| H32_2_15       | Respondent's relationship with person helping with IADL |
| H32_3_15       | Respondent's relationship with person helping with IADL |
| H32_4_15       | Respondent's relationship with person helping with IADL |
| H32_5_15       | Respondent's relationship with person helping with IADL |
| H32_6_15       | Respondent's relationship with person helping with IADL |
| H32_7_15       | Respondent's relationship with person helping with IADL |
| H32_8_15       | Respondent's relationship with person helping with IADL |
| H33_1_15       | Registration number of person helping with IADLs        |
| H33_2_15       | Registration number of person helping with IADLs        |
| H33_3_15       | Registration number of person helping with IADLs        |
| H33_4_15       | Registration number of person helping with IADLs        |
| H33_5_15       | Registration number of person helping with IADLs        |
| H33_6_15       | Registration number of person helping with IADLs        |
| H33_7_15       | Registration number of person helping with IADLs        |
| H33_8_15       | Registration number of person helping with IADLs        |
| Wave 5:        |   |
| H26C_18        | Does someone help R to prepare a hot meal               |
| H27C_18        | Does someone help R to shop for groceries               |
| H28C_18        | Does someone help R to take medications                 |
| H29C_18        | Does someone help R to manage his/her money             |
| H32_1_18       | R's relationship with person helping with IADLs         |
| H32_2_18       | R's relationship with person helping with IADLs         |
| H32_3_18       | R's relationship with person helping with IADLs         |
| H33_1_18       | Registration number of person helping with IADLs        |
| H33_2_18       | Registration number of person helping with IADLs        |
| H33_3_18       | Registration number of person helping with IADLs        |

|   |
|---|
| <b>Instrumental Activities of Daily Living: Receives Formal Care from Paid Professional</b> |
|---|

| Wave | Variable       | Label  | Type  |
|------|----------------|--|-------|
| 1    | R1RIPFCARE     | r1ripfcare: w1 R receives formal care from paid professional | Categ |
| 2    | R2RIPFCARE     | r2ripfcare: w2 R receives formal care from paid professional | Categ |
| 3    | R3RIPFCARE     | r3ripfcare: w3 R receives formal care from paid professional | Categ |
| 4    | R4RIPFCARE     | r4ripfcare: w4 R receives formal care from paid professional | Categ |
| 5    | R5RIPFCARE     | r5ripfcare: w5 R receives formal care from paid professional | Categ |
|      |                |  |       |
| 1    | S1RIPFCARE     | s1ripfcare: w1 S receives formal care from paid professional | Categ |
| 2    | S2RIPFCARE     | s2ripfcare: w2 S receives formal care from paid professional | Categ |
| 3    | S3RIPFCARE     | s3ripfcare: w3 S receives formal care from paid professional | Categ |
| 4    | S4RIPFCARE     | s4ripfcare: w4 S receives formal care from paid professional | Categ |
| 5    | S5RIPFCARE     | s5ripfcare: w5 S receives formal care from paid professional | Categ |
|      |                |  |       |
| 1    | R1RIPFCAREN    | r1ripfcaren: w1 # paid professionals who help R with IADLs   | Cont  |
| 2    | R2RIPFCAREN    | r2ripfcaren: w2 # paid professionals who help R with IADLs   | Cont  |
| 3    | R3RIPFCAREN    | r3ripfcaren: w3 # paid professionals who help R with IADLs   | Cont  |
| 4    | R4RIPFCAREN    | r4ripfcaren: w4 # paid professionals who help R with IADLs   | Cont  |
| 5    | R5RIPFCAREN    | r5ripfcaren: w5 # paid professionals who help R with IADLs   | Cont  |
|      |                |  |       |
| 1    | S1RIPFCAREN    | s1ripfcaren: w1 # paid professionals who help S with IADLs   | Cont  |
| 2    | S2RIPFCAREN    | s2ripfcaren: w2 # paid professionals who help S with IADLs   | Cont  |
| 3    | S3RIPFCAREN    | s3ripfcaren: w3 # paid professionals who help S with IADLs   | Cont  |
| 4    | S4RIPFCAREN    | s4ripfcaren: w4 # paid professionals who help S with IADLs   | Cont  |
| 5    | S5RIPFCAREN    | s5ripfcaren: w5 # paid professionals who help S with IADLs   | Cont  |
|      |                |  |       |
| 1    | R1RIPFCAREDPM  | r1ripfcaredpm: w1 days/month paid professionals help R with  | Cont  |
| 2    | R2RIPFCAREDPM  | r2ripfcaredpm: w2 days/month paid professionals help R with  | Cont  |
| 3    | R3RIPFCAREDPM  | r3ripfcaredpm: w3 days/month paid professionals help R with  | Cont  |
| 4    | R4RIPFCAREDPM  | r4ripfcaredpm: w4 days/month paid professionals help R with  | Cont  |
| 5    | R5RIPFCAREDPM  | r5ripfcaredpm: w5 days/month paid professionals help R with  | Cont  |
|      |                |  |       |
| 1    | S1RIPFCAREDPM  | s1ripfcaredpm: w1 days/month paid professionals help S with  | Cont  |
| 2    | S2RIPFCAREDPM  | s2ripfcaredpm: w2 days/month paid professionals help S with  | Cont  |
| 3    | S3RIPFCAREDPM  | s3ripfcaredpm: w3 days/month paid professionals help S with  | Cont  |
| 4    | S4RIPFCAREDPM  | s4ripfcaredpm: w4 days/month paid professionals help S with  | Cont  |
| 5    | S5RIPFCAREDPM  | s5ripfcaredpm: w5 days/month paid professionals help S with  | Cont  |
|      |                |  |       |
| 1    | R1RIPFCAREDPMM | r1ripfcaredpmm: w1 R # paid professionals missing days of he | Cont  |
| 2    | R2RIPFCAREDPMM | r2ripfcaredpmm: w2 R # paid professionals missing days of he | Cont  |
| 3    | R3RIPFCAREDPMM | r3ripfcaredpmm: w3 R # paid professionals missing days of he | Cont  |
| 4    | R4RIPFCAREDPMM | r4ripfcaredpmm: w4 R # paid professionals missing days of he | Cont  |
| 5    | R5RIPFCAREDPMM | r5ripfcaredpmm: w5 R # paid professionals missing days of he | Cont  |
|      |                |  |       |
| 1    | S1RIPFCAREDPMM | s1ripfcaredpmm: w1 S # paid professionals missing days of he | Cont  |
| 2    | S2RIPFCAREDPMM | s2ripfcaredpmm: w2 S # paid professionals missing days of he | Cont  |
| 3    | S3RIPFCAREDPMM | s3ripfcaredpmm: w3 S # paid professionals missing days of he | Cont  |
| 4    | S4RIPFCAREDPMM | s4ripfcaredpmm: w4 S # paid professionals missing days of he | Cont  |
| 5    | S5RIPFCAREDPMM | s5ripfcaredpmm: w5 S # paid professionals missing days of he | Cont  |
|      |                |  |       |
| 1    | R1RIPFCAREHR   | r1ripfcarehr: w1 hours/day paid professionals help R with IA | Cont  |
| 2    | R2RIPFCAREHR   | r2ripfcarehr: w2 hours/day paid professionals help R with IA | Cont  |
| 3    | R3RIPFCAREHR   | r3ripfcarehr: w3 hours/day paid professionals help R with IA | Cont  |
| 4    | R4RIPFCAREHR   | r4ripfcarehr: w4 hours/day paid professionals help R with IA | Cont  |
| 5    | R5RIPFCAREHR   | r5ripfcarehr: w5 hours/day paid professionals help R with IA | Cont  |
|      |                |  |       |
| 1    | S1RIPFCAREHR   | s1ripfcarehr: w1 hours/day paid professionals help S with IA | Cont  |
| 2    | S2RIPFCAREHR   | s2ripfcarehr: w2 hours/day paid professionals help S with IA | Cont  |
| 3    | S3RIPFCAREHR   | s3ripfcarehr: w3 hours/day paid professionals help S with IA | Cont  |
| 4    | S4RIPFCAREHR   | s4ripfcarehr: w4 hours/day paid professionals help S with IA | Cont  |
| 5    | S5RIPFCAREHR   | s5ripfcarehr: w5 hours/day paid professionals help S with IA | Cont  |

|   |               |  |      |
|---|---------------|--|------|
| 1 | R1RIPFCAREHRM | r1ripfcarehrm: w1 R # paid professionals missing hours of he | Cont |
| 2 | R2RIPFCAREHRM | r2ripfcarehrm: w2 R # paid professionals missing hours of he | Cont |
| 3 | R3RIPFCAREHRM | r3ripfcarehrm: w3 R # paid professionals missing hours of he | Cont |
| 4 | R4RIPFCAREHRM | r4ripfcarehrm: w4 R # paid professionals missing hours of he | Cont |
| 5 | R5RIPFCAREHRM | r5ripfcarehrm: w5 R # paid professionals missing hours of he | Cont |
|   |               |  |      |
| 1 | S1RIPFCAREHRM | s1ripfcarehrm: w1 S # paid professionals missing hours of he | Cont |
| 2 | S2RIPFCAREHRM | s2ripfcarehrm: w2 S # paid professionals missing hours of he | Cont |
| 3 | S3RIPFCAREHRM | s3ripfcarehrm: w3 S # paid professionals missing hours of he | Cont |
| 4 | S4RIPFCAREHRM | s4ripfcarehrm: w4 S # paid professionals missing hours of he | Cont |
| 5 | S5RIPFCAREHRM | s5ripfcarehrm: w5 S # paid professionals missing hours of he | Cont |

## Descriptive Statistics

| Variable       | N    | Mean | Std Dev | Minimum | Maximum |
|----------------|------|------|---------|---------|---------|
|                |      |      |         |         |         |
| R1RIPFCARE     | 1417 | 0.02 | 0.16    | 0.00    | 1.00    |
| R2RIPFCARE     | 1309 | 0.03 | 0.18    | 0.00    | 1.00    |
| R3RIPFCARE     | 1663 | 0.02 | 0.15    | 0.00    | 1.00    |
| R4RIPFCARE     | 1887 | 0.02 | 0.15    | 0.00    | 1.00    |
| R5RIPFCARE     | 1491 | 0.04 | 0.19    | 0.00    | 1.00    |
|                |      |      |         |         |         |
| S1RIPFCARE     | 950  | 0.01 | 0.10    | 0.00    | 1.00    |
| S2RIPFCARE     | 803  | 0.02 | 0.13    | 0.00    | 1.00    |
| S3RIPFCARE     | 931  | 0.02 | 0.13    | 0.00    | 1.00    |
| S4RIPFCARE     | 969  | 0.01 | 0.08    | 0.00    | 1.00    |
| S5RIPFCARE     | 638  | 0.03 | 0.18    | 0.00    | 1.00    |
|                |      |      |         |         |         |
| R1RIPFCAREN    | 1417 | 0.02 | 0.16    | 0.00    | 1.00    |
| R2RIPFCAREN    | 1309 | 0.03 | 0.18    | 0.00    | 1.00    |
| R3RIPFCAREN    | 1663 | 0.03 | 0.16    | 0.00    | 2.00    |
| R4RIPFCAREN    | 1887 | 0.02 | 0.15    | 0.00    | 2.00    |
| R5RIPFCAREN    | 1491 | 0.04 | 0.21    | 0.00    | 3.00    |
|                |      |      |         |         |         |
| S1RIPFCAREN    | 950  | 0.01 | 0.10    | 0.00    | 1.00    |
| S2RIPFCAREN    | 803  | 0.02 | 0.13    | 0.00    | 1.00    |
| S3RIPFCAREN    | 931  | 0.02 | 0.13    | 0.00    | 1.00    |
| S4RIPFCAREN    | 969  | 0.01 | 0.08    | 0.00    | 1.00    |
| S5RIPFCAREN    | 638  | 0.03 | 0.18    | 0.00    | 1.00    |
|                |      |      |         |         |         |
| R1RIPFCAREDPM  | 1417 | 0.65 | 4.22    | 0.00    | 30.00   |
| R2RIPFCAREDPM  | 1309 | 0.85 | 4.84    | 0.00    | 30.00   |
| R3RIPFCAREDPM  | 1662 | 0.47 | 3.63    | 0.00    | 60.00   |
| R4RIPFCAREDPM  | 1887 | 0.47 | 3.59    | 0.00    | 60.00   |
| R5RIPFCAREDPM  | 1490 | 0.94 | 5.46    | 0.00    | 90.00   |
|                |      |      |         |         |         |
| S1RIPFCAREDPM  | 950  | 0.29 | 2.81    | 0.00    | 30.00   |
| S2RIPFCAREDPM  | 803  | 0.46 | 3.60    | 0.00    | 30.00   |
| S3RIPFCAREDPM  | 931  | 0.29 | 2.63    | 0.00    | 30.00   |
| S4RIPFCAREDPM  | 969  | 0.15 | 1.99    | 0.00    | 30.00   |
| S5RIPFCAREDPM  | 638  | 0.77 | 4.55    | 0.00    | 30.00   |
|                |      |      |         |         |         |
| R1RIPFCAREDPMM | 1417 | 0.00 | 0.00    | 0.00    | 0.00    |
| R2RIPFCAREDPMM | 1309 | 0.00 | 0.00    | 0.00    | 0.00    |
| R3RIPFCAREDPMM | 1663 | 0.00 | 0.02    | 0.00    | 1.00    |
| R4RIPFCAREDPMM | 1887 | 0.00 | 0.00    | 0.00    | 0.00    |
| R5RIPFCAREDPMM | 1491 | 0.00 | 0.03    | 0.00    | 1.00    |
|                |      |      |         |         |         |
| S1RIPFCAREDPMM | 950  | 0.00 | 0.00    | 0.00    | 0.00    |
| S2RIPFCAREDPMM | 803  | 0.00 | 0.00    | 0.00    | 0.00    |
| S3RIPFCAREDPMM | 931  | 0.00 | 0.00    | 0.00    | 0.00    |
| S4RIPFCAREDPMM | 969  | 0.00 | 0.00    | 0.00    | 0.00    |
| S5RIPFCAREDPMM | 638  | 0.00 | 0.00    | 0.00    | 0.00    |

|               |      |      |      |      |       |
|---------------|------|------|------|------|-------|
| R1RIPFCAREHR  | 1417 | 0.21 | 1.63 | 0.00 | 24.00 |
| R2RIPFCAREHR  | 1309 | 0.20 | 1.52 | 0.00 | 24.00 |
| R3RIPFCAREHR  | 1663 | 0.20 | 1.53 | 0.00 | 24.00 |
| R4RIPFCAREHR  | 1887 | 0.16 | 1.24 | 0.00 | 24.00 |
| R5RIPFCAREHR  | 1489 | 0.31 | 2.16 | 0.00 | 48.00 |
| S1RIPFCAREHR  | 950  | 0.07 | 0.73 | 0.00 | 12.00 |
| S2RIPFCAREHR  | 803  | 0.11 | 0.96 | 0.00 | 12.00 |
| S3RIPFCAREHR  | 931  | 0.14 | 1.24 | 0.00 | 24.00 |
| S4RIPFCAREHR  | 969  | 0.02 | 0.29 | 0.00 | 5.00  |
| S5RIPFCAREHR  | 637  | 0.18 | 1.11 | 0.00 | 10.00 |
| R1RIPFCAREHRM | 1417 | 0.00 | 0.00 | 0.00 | 0.00  |
| R2RIPFCAREHRM | 1309 | 0.00 | 0.00 | 0.00 | 0.00  |
| R3RIPFCAREHRM | 1663 | 0.00 | 0.00 | 0.00 | 0.00  |
| R4RIPFCAREHRM | 1887 | 0.00 | 0.00 | 0.00 | 0.00  |
| R5RIPFCAREHRM | 1491 | 0.00 | 0.04 | 0.00 | 1.00  |
| S1RIPFCAREHRM | 950  | 0.00 | 0.00 | 0.00 | 0.00  |
| S2RIPFCAREHRM | 803  | 0.00 | 0.00 | 0.00 | 0.00  |
| S3RIPFCAREHRM | 931  | 0.00 | 0.00 | 0.00 | 0.00  |
| S4RIPFCAREHRM | 969  | 0.00 | 0.00 | 0.00 | 0.00  |
| S5RIPFCAREHRM | 638  | 0.00 | 0.04 | 0.00 | 1.00  |

Categorical Variable Codes

|                               |            |            |            |            |            |
|-------------------------------|------------|------------|------------|------------|------------|
| Value-----                    | R1RIPFCARE | R2RIPFCARE | R3RIPFCARE | R4RIPFCARE | R5RIPFCARE |
| .d:DK                         |            |            | 1          | 5          |            |
| .h:no help received           | 267        | 204        | 658        | 605        | 406        |
| .m:Missing                    | 38         | 30         |            | 40         | 17         |
| .p:Proxy interview, not asked | 1032       | 1161       | 1275       | 929        | 1328       |
| .r:Refuse                     | 13         | 1          | 1          | 1          | 12         |
| .x:no difficulty              | 12419      | 10999      | 12125      | 11312      | 13860      |
| 0.No                          | 1382       | 1267       | 1623       | 1844       | 1434       |
| 1.Yes                         | 35         | 42         | 40         | 43         | 57         |
| Value-----                    | S1RIPFCARE | S2RIPFCARE | S3RIPFCARE | S4RIPFCARE | S5RIPFCARE |
| .d:DK                         |            |            | 1          | 5          |            |
| .h:no help received           | 154        | 202        | 487        | 406        | 205        |
| .m:Missing                    | 13         | 6          |            | 10         | 2          |
| .p:Proxy interview, not asked | 660        | 814        | 726        | 470        | 560        |
| .r:Refuse                     | 8          | 1          |            |            | 6          |
| .u:Unmar                      | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR                      | 333        | 131        | 349        | 280        | 501        |
| .x:no difficulty              | 8863       | 7738       | 8447       | 7792       | 6050       |
| 0.No                          | 940        | 790        | 916        | 963        | 617        |
| 1.Yes                         | 10         | 13         | 15         | 6          | 21         |

How Constructed

The following variables indicate whether paid formal caregivers help the respondent with any IADL needs. The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. If the respondent reports having difficulty with an IADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with IADLs. The information used to derive these variables is taken from the help files in Waves 1 and 2 and from the individual files in Waves 3 and forward. For each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest

level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

The following variables are coded as special missing value .x if the respondent reports no difficulty with any IADL, and are coded as special missing value .h if the respondent reports difficulty with an IADL but does not receive any help. Don't know, refused, or other missing responses are assigned special missing values .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwRIPFCARE, RwRIPFCAREN, RwRIPFCAREDPM, RwRIPFCAREDPMM, RwRIPFCAREHR, and RwRIPFCAREHRM include help from a paid person.

RwRIPFCARE indicates whether any paid professionals help the respondent with IADL needs. RwRIPFCAREN indicates the number of paid professionals who help the respondent with IADL needs. RwRIPFCARE is coded as 0 if no paid professionals help the respondent with IADLs; and is coded as 1 if at least one paid professional helps the respondent with IADLs.

RwRIPFCAREDPM indicates the number of total days per month paid professionals help the respondent with IADL needs. If the respondent reports receiving help every day from that paid professional, then a value of 30 is assumed. RwRIPFCAREDPM is the sum of days per month for all paid professional helpers, and so values can be over 30 days. RwRIPFCAREDPM is calculated as long as there is one non-missing value. RwRIPFCAREDPM is assigned a value of 0 if the respondent did not receive help from any paid professionals. RwRIPFCAREDPMM indicates the number of paid professionals who helped the respondent for whom no value of days was reported and was not accounted for in RwRIPFCAREDPM. RwRIPFCAREDPMM is assigned special missing value .m if the respondent was not helped by any paid professionals.

RwRIPFCAREHR indicates the number of hours per day paid professionals help the respondent with IADL needs. Respondents are asked, on days paid professionals help, how many hours per day that is. If the respondent reports less than an hour for that paid professional, then a 1 is assumed. RwRIPFCAREHR is the sum of hours per day for all paid professional helpers, and so values can be over 24 hours. RwRIPFCAREHR is calculated as long as there is one non-missing value. RwRIPFCAREHR is assigned a value of 0 if the respondent did not receive help from any paid professionals. RwRIPFCAREHRM indicates the number of paid professionals who helped the respondent for whom no value of hours was reported and was not accounted for in RwRIPFCAREHR. RwRIPFCAREHRM is assigned special missing value .m if the respondent was not helped by any paid professionals.

SwRIPFCARE, SwRIPFCAREN, SwRIPFCAREDPM, and SwRIPFCAREHR indicate whether the respondent's current wave's spouse receives help from paid professionals, the number, and the frequency with which, and their values are taken from RwRIPFCARE, RwRIPFCAREN, RwRIPFCAREDPM, and RwRIPFCAREHR. SwRIPFCAREDPMM and SwRIPFCAREHRM indicate the number of paid professionals who helped the respondent's current spouse for whom a value was not reported for the number of days and hours and are taken from RwRIPFCAREDPMM and RwRIPFCAREHRM. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers in Waves 1 and 2, up to 8 caregivers in Waves 3 and 4, and up to 3 caregivers in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, these variables in the Harmonized HRS also include help using the telephone, whereas in the Harmonized MHAS they do not include help using the telephone.

RwRIPFCAREDPW in the Harmonized HRS indicates the days per week the respondent received help, while RwRIPFCAREDPM in the Harmonized MHAS indicates the days per month the respondent received help. As such, adjustment must be made before comparison of these variables.

The HRS asks for up to 6 relationships of people who help with IADLs (preparing meals, grocery shopping, making phone calls, and taking medications), and up to 2 people who help with managing money. The MHAS, in contrast, asks for the relationships of a varying number of people who help with preparing meals, grocery shopping, taking medications, and managing money together.

## MHAS Variables Used

### Wave 1:

|       |                                      |
|-------|--------------------------------------|
| H26_3 | spouse helps with hot meal           |
| H26_4 | someone helps with hot meal          |
| H27_3 | spouse helps with shopping           |
| H27_4 | someone helps with shopping          |
| H28_3 | spouse helps with taking medication  |
| H28_4 | someone helps with taking medication |
| H29_3 | spouse helps with managing money     |
| H29_4 | someone helps with managing money    |

### Wave 1 Helper:

|     |                         |
|-----|-------------------------|
| H32 | kinship of helper       |
| H33 | roster number of helper |
| H34 | days of help            |
| H35 | hours of help           |

### Wave 2:

|      |                         |
|------|-------------------------|
| H26D | spouse helps            |
| H26E | additional person helps |
| H27D | spouse helps            |
| H27E | additional person helps |
| H28D | spouse helps            |
| H28E | additional person helps |
| H29D | spouse helps            |
| H29E | additional person helps |

### Wave 2 Helper:

|     |   |
|-----|---|
| H32 | relationship                            |
| H33 | registration number                     |
| H34 | number of days (name) helped last month |
| H35 | how many hours during those days        |

### Wave 3:

|          |  |
|----------|--|
| H26C_12  | Does anyone help you prepare a hot meal    |
| H27C_12  | Does anyone help you shop for groceries    |
| H28C_12  | Does anyone help you take medications      |
| H29C_12  | Does anyone one help you manage your money |
| H32_1_12 | Relationship with helper for IADLs         |
| H32_2_12 | Relationship with helper for IADLs         |
| H32_3_12 | Relationship with helper for IADLs         |
| H32_4_12 | Relationship with helper for IADLs         |
| H32_5_12 | Relationship with helper for IADLs         |
| H32_6_12 | Relationship with helper for IADLs         |
| H32_7_12 | Relationship with helper for IADLs         |
| H32_8_12 | Relationship with helper for IADLs         |
| H33_1_12 | Registration number of helper for IADLs    |
| H33_2_12 | Registration number of helper for ADLs     |
| H33_3_12 | Registration number of helper for IADLs    |
| H33_4_12 | Registration number of helper for IADLs    |
| H33_5_12 | Registration number of helper for IADLs    |
| H33_6_12 | Registration number of helper for IADLs    |
| H33_7_12 | Registration number of helper for IADLs    |
| H33_8_12 | Registration number of helper for IADLs    |
| H34_1_12 | Number of days (name) helped last month    |
| H34_2_12 | Number of days (name) helped last month    |
| H34_3_12 | Number of days (name) helped last month    |
| H34_4_12 | Number of days (name) helped last month    |
| H34_5_12 | Number of days (name) helped last month    |
| H34_6_12 | Number of days (name) helped last month    |
| H34_7_12 | Number of days (name) helped last month    |
| H34_8_12 | Number of days (name) helped last month    |



|          |   |
|----------|---|
| H35_1_12 | Number of hours during those days (NAME) helped |
| H35_2_12 | Number of hours during those days (NAME) helped |
| H35_3_12 | Number of hours during those days (NAME) helped |
| H35_4_12 | Number of hours during those days (NAME) helped |
| H35_5_12 | Number of hours during those days (NAME) helped |
| H35_6_12 | Number of hours during those days (NAME) helped |
| H35_7_12 | Number of hours during those days (NAME) helped |
| H35_8_12 | Number of hours during those days (NAME) helped |

## Wave 4:

|          |   |
|----------|---|
| H26C_15  | Does someone help respondent to prepare a hot meal      |
| H27C_15  | Does someone help respondent to shop for groceries      |
| H28C_15  | Does someone help respondent to take medications        |
| H29C_15  | Does someone help respondent to manage his/her money    |
| H32_1_15 | Respondent's relationship with person helping with IADL |
| H32_2_15 | Respondent's relationship with person helping with IADL |
| H32_3_15 | Respondent's relationship with person helping with IADL |
| H32_4_15 | Respondent's relationship with person helping with IADL |
| H32_5_15 | Respondent's relationship with person helping with IADL |
| H32_6_15 | Respondent's relationship with person helping with IADL |
| H32_7_15 | Respondent's relationship with person helping with IADL |
| H32_8_15 | Respondent's relationship with person helping with IADL |
| H33_1_15 | Registration number of person helping with IADLs        |
| H33_2_15 | Registration number of person helping with IADLs        |
| H33_3_15 | Registration number of person helping with IADLs        |
| H33_4_15 | Registration number of person helping with IADLs        |
| H33_5_15 | Registration number of person helping with IADLs        |
| H33_6_15 | Registration number of person helping with IADLs        |
| H33_7_15 | Registration number of person helping with IADLs        |
| H33_8_15 | Registration number of person helping with IADLs        |
| H34_1_15 | Number of days the person helped during last month      |
| H34_2_15 | Number of days the person helped during last month      |
| H34_3_15 | Number of days the person helped during last month      |
| H34_4_15 | Number of days the person helped during last month      |
| H34_5_15 | Number of days the person helped during last month      |
| H34_6_15 | Number of days the person helped during last month      |
| H34_7_15 | Number of days the person helped during last month      |
| H34_8_15 | Number of days the person helped during last month      |
| H35_1_15 | Number of hours during those days that the person helps |
| H35_2_15 | Number of hours during those days that the person helps |
| H35_3_15 | Number of hours during those days that the person helps |
| H35_4_15 | Number of hours during those days that the person helps |
| H35_5_15 | Number of hours during those days that the person helps |
| H35_6_15 | Number of hours during those days that the person helps |
| H35_7_15 | Number of hours during those days that the person helps |
| H35_8_15 | Number of hours during those days that the person helps |

## Wave 5:

|          |   |
|----------|---|
| H26C_18  | Does someone help R to prepare a hot meal               |
| H27C_18  | Does someone help R to shop for groceries               |
| H28C_18  | Does someone help R to take medications                 |
| H29C_18  | Does someone help R to manage his/her money             |
| H32_1_18 | R's relationship with person helping with IADLs         |
| H32_2_18 | R's relationship with person helping with IADLs         |
| H32_3_18 | R's relationship with person helping with IADLs         |
| H33_1_18 | Registration number of person helping with IADLs        |
| H33_2_18 | Registration number of person helping with IADLs        |
| H33_3_18 | Registration number of person helping with IADLs        |
| H34_1_18 | Number of days the person helped during last month      |
| H34_2_18 | Number of days the person helped during last month      |
| H34_3_18 | Number of days the person helped during last month      |
| H35_1_18 | Number of hours during those days that the person helps |
| H35_2_18 | Number of hours during those days that the person helps |
| H35_3_18 | Number of hours during those days that the person helps |

### Activities of Daily Living and Instrumental Activities of Daily Living: Whether Receives Any Care

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1RCANY  | r1rcany: w1 R receives any care for ADLs/IADLs | Categ |
| 2    | R2RCANY  | r2rcany: w2 R receives any care for ADLs/IADLs | Categ |
| 3    | R3RCANY  | r3rcany: w3 R receives any care for ADLs/IADLs | Categ |
| 4    | R4RCANY  | r4rcany: w4 R receives any care for ADLs/IADLs | Categ |
| 5    | R5RCANY  | r5rcany: w5 R receives any care for ADLs/IADLs | Categ |
| 1    | S1RCANY  | s1rcany: w1 S receives any care for ADLs/IADLs | Categ |
| 2    | S2RCANY  | s2rcany: w2 S receives any care for ADLs/IADLs | Categ |
| 3    | S3RCANY  | s3rcany: w3 S receives any care for ADLs/IADLs | Categ |
| 4    | S4RCANY  | s4rcany: w4 S receives any care for ADLs/IADLs | Categ |
| 5    | S5RCANY  | s5rcany: w5 S receives any care for ADLs/IADLs | Categ |

### Descriptive Statistics

| Variable | N    | Mean | Std Dev | Minimum | Maximum |
|----------|------|------|---------|---------|---------|
| R1RCANY  | 2586 | 0.69 | 0.46    | 0.00    | 1.00    |
| R2RCANY  | 2392 | 0.70 | 0.46    | 0.00    | 1.00    |
| R3RCANY  | 4089 | 0.57 | 0.50    | 0.00    | 1.00    |
| R4RCANY  | 4182 | 0.60 | 0.49    | 0.00    | 1.00    |
| R5RCANY  | 3756 | 0.59 | 0.49    | 0.00    | 1.00    |
| S1RCANY  | 1649 | 0.70 | 0.46    | 0.00    | 1.00    |
| S2RCANY  | 1506 | 0.68 | 0.47    | 0.00    | 1.00    |
| S3RCANY  | 2464 | 0.51 | 0.50    | 0.00    | 1.00    |
| S4RCANY  | 2349 | 0.54 | 0.50    | 0.00    | 1.00    |
| S5RCANY  | 1650 | 0.57 | 0.50    | 0.00    | 1.00    |

### Categorical Variable Codes

| Value-----       | R1RCANY | R2RCANY | R3RCANY | R4RCANY | R5RCANY |
|------------------|---------|---------|---------|---------|---------|
| .d:DK            | 1       |         | 1       | 6       | 2       |
| .m:Missing       | 40      | 41      |         | 40      | 18      |
| .r:Refuse        | 2       |         | 1       | 1       | 82      |
| .x:no difficulty | 12557   | 11271   | 11632   | 10550   | 13256   |
| 0.No             | 812     | 729     | 1771    | 1666    | 1545    |
| 1.Yes            | 1774    | 1663    | 2318    | 2516    | 2211    |

| Value-----       | S1RCANY | S2RCANY | S3RCANY | S4RCANY | S5RCANY |
|------------------|---------|---------|---------|---------|---------|
| .d:DK            |         |         | 1       | 5       |         |
| .m:Missing       | 14      | 18      |         | 10      | 3       |
| .r:Refuse        | 1       |         |         |         | 55      |
| .u:Unmar         | 4205    | 4009    | 4782    | 4847    | 5227    |
| .v:SP NR         | 333     | 131     | 349     | 280     | 501     |
| .x:no difficulty | 8984    | 8040    | 8127    | 7288    | 5753    |
| 0.No             | 501     | 487     | 1213    | 1072    | 716     |
| 1.Yes            | 1148    | 1019    | 1251    | 1277    | 934     |

### How Constructed

RwRCANY indicates whether the respondent receives any care for difficulties with activities of daily living (ADL) and/or instrumental activities of daily living (IADL). If the respondent reports having difficulty with an ADL or IADL, then they are asked whether someone helps them with that activity. The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. RwRCANY is assigned a value of 0 if the respondent has difficulty with at least one ADL or IADL but receives no help with the activity. RwRCANY is assigned a value of 1 if the respondent has difficulty with at least one ADL or IADL and someone helps with at least one of the activities. RwRCANY is assigned special missing value .x if the respondent has

no difficulty with any ADLs or IADLs. Don't know, refused, and other missing responses are assigned special missing values .d, .r, and .m, respectively. RwRCANY is assigned a blank missing (.) if the respondent did not participate in the current wave.

SwRCANY indicates whether the respondent's current wave's spouse receives any care for difficulties with ADLs or IADLs, and its values are taken from RwRCANY. In addition to the special missing codes employed by RwRCANY, SwRCANY employs two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

In the HRS, if the respondent reports that they "can't do" or "don't do" the activity or if they have difficulty that is not the result of a health or memory problem, then they are not asked whether they receive help with that activity. Respondents in the MHAS, however, are asked whether they receive help with the activity if they report that they "can't do", "don't do", or have difficulty with the activity, regardless of whether it is the result of a health or memory problem.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, RwRCANY in the Harmonized HRS also includes help using the telephone, whereas RwRCANY in the Harmonized HRS does not include help using the telephone.

## MHAS Variables Used

### Wave 1:

|       |                                       |
|-------|---------------------------------------|
| H14   | help dressing                         |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H19_3 | spouse helps using toilet             |
| H19_4 | other helps using toilet              |
| H26_3 | spouse helps with hot meal            |
| H26_4 | someone helps with hot meal           |
| H27_3 | spouse helps with shopping            |
| H27_4 | someone helps with shopping           |
| H28_3 | spouse helps with taking medication   |
| H28_4 | someone helps with taking medication  |
| H29_3 | spouse helps with managing money      |
| H29_4 | someone helps with managing money     |

### Wave 2:

|      |                                 |
|------|---------------------------------|
| H14  | someone help you to get dressed |
| H15E | spouse helps                    |
| H15F | additional person helps         |
| H16E | spouse helps                    |
| H16F | additional person helps         |
| H17E | spouse helps                    |
| H17F | additional person helps         |
| H18E | spouse helps                    |
| H18F | additional person helps         |
| H19E | spouse helps                    |
| H19F | additional person helps         |
| H26D | spouse helps                    |
| H26E | additional person helps         |
| H27D | spouse helps                    |

|          |   |
|----------|---|
| H27E     | additional person helps                                 |
| H28D     | spouse helps  |
| H28E     | additional person helps                                 |
| H29D     | spouse helps  |
| H29E     | additional person helps                                 |
| Wave 3:  |   |
| H14_12   | Someone help you to get dressed                         |
| H15D_12  | Someone help you walk across room                       |
| H16D_12  | Someone help you to bathe or shower                     |
| H17D_12  | Does someone help you eat your food                     |
| H18D_12  | Does someone help you get into or out of bed            |
| H19D_12  | Does someone help you use toilet, get on off            |
| H22_1_12 | Relationship with helper for ADLs                       |
| H22_2_12 | Relationship with helper for ADLs                       |
| H22_3_12 | Relationship with helper for ADLs                       |
| H22_4_12 | Relationship with helper for ADLs                       |
| H22_5_12 | Relationship with helper for ADLs                       |
| H22_6_12 | Relationship with helper for ADLs                       |
| H22_7_12 | Relationship with helper for ADLs                       |
| H22_8_12 | Relationship with helper for ADLs                       |
| H23_1_12 | Registration number of helper for ADLs                  |
| H23_2_12 | Registration number of helper for ADLs                  |
| H23_3_12 | Registration number of helper for ADLs                  |
| H23_4_12 | Registration number of helper for ADLs                  |
| H23_5_12 | Registration number of helper for ADLs                  |
| H23_6_12 | Registration number of helper for ADLs                  |
| H23_7_12 | Registration number of helper for ADLs                  |
| H23_8_12 | Registration number of helper for ADLs                  |
| H26C_12  | Does anyone help you prepare a hot meal                 |
| H27C_12  | Does anyone help you shop for groceries                 |
| H28C_12  | Does anyone help you take medications                   |
| H29C_12  | Does anyone one help you manage your money              |
| H32_1_12 | Relationship with helper for IADLs                      |
| H32_2_12 | Relationship with helper for IADLs                      |
| H32_3_12 | Relationship with helper for IADLs                      |
| H32_4_12 | Relationship with helper for IADLs                      |
| H32_5_12 | Relationship with helper for IADLs                      |
| H32_6_12 | Relationship with helper for IADLs                      |
| H32_7_12 | Relationship with helper for IADLs                      |
| H32_8_12 | Relationship with helper for IADLs                      |
| H33_1_12 | Registration number of helper for IADLs                 |
| H33_2_12 | Registration number of helper for ADLs                  |
| H33_3_12 | Registration number of helper for IADLs                 |
| H33_4_12 | Registration number of helper for IADLs                 |
| H33_5_12 | Registration number of helper for IADLs                 |
| H33_6_12 | Registration number of helper for IADLs                 |
| H33_7_12 | Registration number of helper for IADLs                 |
| H33_8_12 | Registration number of helper for IADLs                 |
| Wave 4:  |   |
| H14_15   | Does someone help respondent to get dressed             |
| H15D_15  | Does someone help respondent walking across a room      |
| H16D_15  | Does someone help respondent bathing or showering       |
| H17D_15  | Does someone help respondent eating                     |
| H18D_15  | Does someone help respondent getting in or out of bed   |
| H19D_15  | Does someone help respondent using the toilet           |
| H22_1_15 | Respondent's relationship with person helping with ADLs |
| H22_2_15 | Respondent's relationship with person helping with ADLs |
| H22_3_15 | Respondent's relationship with person helping with ADLs |
| H22_4_15 | Respondent's relationship with person helping with ADLs |
| H22_5_15 | Respondent's relationship with person helping with ADLs |
| H22_6_15 | Respondent's relationship with person helping with ADLs |
| H22_7_15 | Respondent's relationship with person helping with ADLs |
| H22_8_15 | Respondent's relationship with person helping with ADLs |
| H23_1_15 | Registration number of person helping with ADLs         |

|          |   |
|----------|---|
| H23_2_15 | Registration number of person helping with ADLs         |
| H23_3_15 | Registration number of person helping with ADLs         |
| H23_4_15 | Registration number of person helping with ADLs         |
| H23_5_15 | Registration number of person helping with ADLs         |
| H23_6_15 | Registration number of person helping with ADLs         |
| H23_7_15 | Registration number of person helping with ADLs         |
| H23_8_15 | Registration number of person helping with ADLs         |
| H26C_15  | Does someone help respondent to prepare a hot meal      |
| H27C_15  | Does someone help respondent to shop for groceries      |
| H28C_15  | Does someone help respondent to take medications        |
| H29C_15  | Does someone help respondent to manage his/her money    |
| H32_1_15 | Respondent's relationship with person helping with IADL |
| H32_2_15 | Respondent's relationship with person helping with IADL |
| H32_3_15 | Respondent's relationship with person helping with IADL |
| H32_4_15 | Respondent's relationship with person helping with IADL |
| H32_5_15 | Respondent's relationship with person helping with IADL |
| H32_6_15 | Respondent's relationship with person helping with IADL |
| H32_7_15 | Respondent's relationship with person helping with IADL |
| H32_8_15 | Respondent's relationship with person helping with IADL |
| H33_1_15 | Registration number of person helping with IADLs        |
| H33_2_15 | Registration number of person helping with IADLs        |
| H33_3_15 | Registration number of person helping with IADLs        |
| H33_4_15 | Registration number of person helping with IADLs        |
| H33_5_15 | Registration number of person helping with IADLs        |
| H33_6_15 | Registration number of person helping with IADLs        |
| H33_7_15 | Registration number of person helping with IADLs        |
| H33_8_15 | Registration number of person helping with IADLs        |

## Wave 5:

|          |  |
|----------|--|
| H14_18   | Does someone help R to get dressed               |
| H15D_18  | Does someone help R walking across a room        |
| H16D_18  | Does someone help R bathing or showering         |
| H17D_18  | Does someone help R eating                       |
| H18D_18  | Does someone help R getting in or out of bed     |
| H19D_18  | Does someone help R using the toilet             |
| H22_1_18 | R's relationship with person helping with ADLs   |
| H22_2_18 | R's relationship with person helping with ADLs   |
| H22_3_18 | R's relationship with person helping with ADLs   |
| H23_1_18 | Registration number of person helping with ADLs  |
| H23_2_18 | Registration number of person helping with ADLs  |
| H23_3_18 | Registration number of person helping with ADLs  |
| H26C_18  | Does someone help R to prepare a hot meal        |
| H27C_18  | Does someone help R to shop for groceries        |
| H28C_18  | Does someone help R to take medications          |
| H29C_18  | Does someone help R to manage his/her money      |
| H32_1_18 | R's relationship with person helping with IADLs  |
| H32_2_18 | R's relationship with person helping with IADLs  |
| H32_3_18 | R's relationship with person helping with IADLs  |
| H33_1_18 | Registration number of person helping with IADLs |
| H33_2_18 | Registration number of person helping with IADLs |
| H33_3_18 | Registration number of person helping with IADLs |

## Activities of Daily Living and Instrumental Activities of Daily Living: Whether Receives Any Informal Care

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1RCAANY | r1rcaany: w1 R receives any informal care for ADLs/IADLs | Categ |
| 2    | R2RCAANY | r2rcaany: w2 R receives any informal care for ADLs/IADLs | Categ |
| 3    | R3RCAANY | r3rcaany: w3 R receives any informal care for ADLs/IADLs | Categ |
| 4    | R4RCAANY | r4rcaany: w4 R receives any informal care for ADLs/IADLs | Categ |
| 5    | R5RCAANY | r5rcaany: w5 R receives any informal care for ADLs/IADLs | Categ |
|      |          |  |       |
| 1    | S1RCAANY | s1rcaany: w1 S receives any informal care for ADLs/IADLs | Categ |
| 2    | S2RCAANY | s2rcaany: w2 S receives any informal care for ADLs/IADLs | Categ |
| 3    | S3RCAANY | s3rcaany: w3 S receives any informal care for ADLs/IADLs | Categ |
| 4    | S4RCAANY | s4rcaany: w4 S receives any informal care for ADLs/IADLs | Categ |
| 5    | S5RCAANY | s5rcaany: w5 S receives any informal care for ADLs/IADLs | Categ |

### Descriptive Statistics

| Variable | N    | Mean | Std Dev | Minimum | Maximum |
|----------|------|------|---------|---------|---------|
| R1RCAANY | 2586 | 0.66 | 0.47    | 0.00    | 1.00    |
| R2RCAANY | 2403 | 0.64 | 0.48    | 0.00    | 1.00    |
| R3RCAANY | 4089 | 0.55 | 0.50    | 0.00    | 1.00    |
| R4RCAANY | 4182 | 0.58 | 0.49    | 0.00    | 1.00    |
| R5RCAANY | 3756 | 0.56 | 0.50    | 0.00    | 1.00    |
|          |      |      |         |         |         |
| S1RCAANY | 1649 | 0.67 | 0.47    | 0.00    | 1.00    |
| S2RCAANY | 1516 | 0.62 | 0.49    | 0.00    | 1.00    |
| S3RCAANY | 2464 | 0.48 | 0.50    | 0.00    | 1.00    |
| S4RCAANY | 2349 | 0.51 | 0.50    | 0.00    | 1.00    |
| S5RCAANY | 1650 | 0.53 | 0.50    | 0.00    | 1.00    |

### Categorical Variable Codes

| Value-----       | R1RCAANY | R2RCAANY | R3RCAANY | R4RCAANY | R5RCAANY |
|------------------|----------|----------|----------|----------|----------|
| .d:DK            | 1        |          | 1        | 6        | 2        |
| .m:Missing       | 40       | 30       |          | 40       | 18       |
| .r:Refuse        | 2        |          | 1        | 1        | 82       |
| .x:no difficulty | 12557    | 11271    | 11632    | 10550    | 13256    |
| 0.No             | 884      | 854      | 1849     | 1768     | 1670     |
| 1.Yes            | 1702     | 1549     | 2240     | 2414     | 2086     |
|                  |          |          |          |          |          |
| Value-----       | S1RCAANY | S2RCAANY | S3RCAANY | S4RCAANY | S5RCAANY |
| .d:DK            |          |          | 1        | 5        |          |
| .m:Missing       | 14       | 8        |          | 10       | 3        |
| .r:Refuse        | 1        |          |          |          | 55       |
| .u:Unmar         | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR         | 333      | 131      | 349      | 280      | 501      |
| .x:no difficulty | 8984     | 8040     | 8127     | 7288     | 5753     |
| 0.No             | 542      | 576      | 1275     | 1142     | 781      |
| 1.Yes            | 1107     | 940      | 1189     | 1207     | 869      |

### How Constructed

RwRCAANY indicates whether the respondent receives any informal care for difficulties with activities of daily living (ADL) and/or instrumental activities of daily living (IADL). The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. If the respondent reports having difficulty with an ADL or IADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with ADLs, and up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with IADLs. The following relationships are

considered to provide informal care: spouse, child, child-in-law, grandchild, parent, other relative, other person.

Please note that for each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

RwRCAANY is assigned a value of 0 if the respondent has difficulty with at least one ADL or IADL but receives no help with the activity from an informal caregiver, or does not receive any help at all. RwRCAANY is assigned a value of 1 if the respondent has difficulty with at least one ADL or IADL and an informal caregiver helps with at least one of the activities. RwRCAANY is assigned special missing value .x if the respondent has no difficulty with any ADLs or IADLs. Don't know, refused, and other missing responses are assigned special missing values .d, .r, and .m, respectively. RwRCAANY is assigned a blank missing (.) if the respondent did not participate in the current wave.

SwRCAANY indicates whether the respondent's current wave's spouse receives any informal care for difficulties with ADLs or IADLs, and its values are taken from RwRCAANY. In addition to the special missing codes employed by RwRCAANY, SwRCAANY employs two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers each for ADLs and IADLs in Waves 1 and 2, up to 8 caregivers each for ADLs and IADLs in Waves 3 and 4, and up to 3 caregivers each for ADLs and IADLs in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, RwRCAANY in the Harmonized HRS also includes help using the telephone, whereas RwRCAANY in the Harmonized MHAS does not include help using the telephone.

## MHAS Variables Used

Wave 1:

|       |                                       |
|-------|---------------------------------------|
| H14   | help dressing                         |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H19_3 | spouse helps using toilet             |
| H19_4 | other helps using toilet              |
| H26_3 | spouse helps with hot meal            |
| H26_4 | someone helps with hot meal           |
| H27_3 | spouse helps with shopping            |
| H27_4 | someone helps with shopping           |
| H28_3 | spouse helps with taking medication   |

|                |  |
|----------------|--|
| H28_4          | someone helps with taking medication         |
| H29_3          | spouse helps with managing money             |
| H29_4          | someone helps with managing money            |
| Wave 1 Helper: |  |
| H22            | kinship of helper                            |
| H23            | roster number of helper                      |
| H32            | kinship of helper                            |
| H33            | roster number of helper                      |
| Wave 2:        |  |
| H14            | someone help you to get dressed              |
| H15E           | spouse helps                                 |
| H15F           | additional person helps                      |
| H16E           | spouse helps                                 |
| H16F           | additional person helps                      |
| H17E           | spouse helps                                 |
| H17F           | additional person helps                      |
| H18E           | spouse helps                                 |
| H18F           | additional person helps                      |
| H19E           | spouse helps                                 |
| H19F           | additional person helps                      |
| H26D           | spouse helps                                 |
| H26E           | additional person helps                      |
| H27D           | spouse helps                                 |
| H27E           | additional person helps                      |
| H28D           | spouse helps                                 |
| H28E           | additional person helps                      |
| H29D           | spouse helps                                 |
| H29E           | additional person helps                      |
| Wave 2 Helper: |  |
| H22            | relationship                                 |
| H23            | registration number                          |
| H32            | relationship                                 |
| H33            | registration number                          |
| Wave 3:        |  |
| H14_12         | Someone help you to get dressed              |
| H15D_12        | Someone help you walk across room            |
| H16D_12        | Someone help you to bathe or shower          |
| H17D_12        | Does someone help you eat your food          |
| H18D_12        | Does someone help you get into or out of bed |
| H19D_12        | Does someone help you use toilet, get on off |
| H22_1_12       | Relationship with helper for ADLs            |
| H22_2_12       | Relationship with helper for ADLs            |
| H22_3_12       | Relationship with helper for ADLs            |
| H22_4_12       | Relationship with helper for ADLs            |
| H22_5_12       | Relationship with helper for ADLs            |
| H22_6_12       | Relationship with helper for ADLs            |
| H22_7_12       | Relationship with helper for ADLs            |
| H22_8_12       | Relationship with helper for ADLs            |
| H23_1_12       | Registration number of helper for ADLs       |
| H23_2_12       | Registration number of helper for ADLs       |
| H23_3_12       | Registration number of helper for ADLs       |
| H23_4_12       | Registration number of helper for ADLs       |
| H23_5_12       | Registration number of helper for ADLs       |
| H23_6_12       | Registration number of helper for ADLs       |
| H23_7_12       | Registration number of helper for ADLs       |
| H23_8_12       | Registration number of helper for ADLs       |
| H26C_12        | Does anyone help you prepare a hot meal      |
| H27C_12        | Does anyone help you shop for groceries      |
| H28C_12        | Does anyone help you take medications        |
| H29C_12        | Does anyone one help you manage your money   |
| H32_1_12       | Relationship with helper for IADLs           |
| H32_2_12       | Relationship with helper for IADLs           |
| H32_3_12       | Relationship with helper for IADLs           |
| H32_4_12       | Relationship with helper for IADLs           |



|          |   |
|----------|---|
| H32_5_12 | Relationship with helper for IADLs                      |
| H32_6_12 | Relationship with helper for IADLs                      |
| H32_7_12 | Relationship with helper for IADLs                      |
| H32_8_12 | Relationship with helper for IADLs                      |
| H33_1_12 | Registration number of helper for IADLs                 |
| H33_2_12 | Registration number of helper for ADLs                  |
| H33_3_12 | Registration number of helper for IADLs                 |
| H33_4_12 | Registration number of helper for IADLs                 |
| H33_5_12 | Registration number of helper for IADLs                 |
| H33_6_12 | Registration number of helper for IADLs                 |
| H33_7_12 | Registration number of helper for IADLs                 |
| H33_8_12 | Registration number of helper for IADLs                 |
| Wave 4:  |   |
| H14_15   | Does someone help respondent to get dressed             |
| H15D_15  | Does someone help respondent walking across a room      |
| H16D_15  | Does someone help respondent bathing or showering       |
| H17D_15  | Does someone help respondent eating                     |
| H18D_15  | Does someone help respondent getting in or out of bed   |
| H19D_15  | Does someone help respondent using the toilet           |
| H22_1_15 | Respondent's relationship with person helping with ADLs |
| H22_2_15 | Respondent's relationship with person helping with ADLs |
| H22_3_15 | Respondent's relationship with person helping with ADLs |
| H22_4_15 | Respondent's relationship with person helping with ADLs |
| H22_5_15 | Respondent's relationship with person helping with ADLs |
| H22_6_15 | Respondent's relationship with person helping with ADLs |
| H22_7_15 | Respondent's relationship with person helping with ADLs |
| H22_8_15 | Respondent's relationship with person helping with ADLs |
| H23_1_15 | Registration number of person helping with ADLs         |
| H23_2_15 | Registration number of person helping with ADLs         |
| H23_3_15 | Registration number of person helping with ADLs         |
| H23_4_15 | Registration number of person helping with ADLs         |
| H23_5_15 | Registration number of person helping with ADLs         |
| H23_6_15 | Registration number of person helping with ADLs         |
| H23_7_15 | Registration number of person helping with ADLs         |
| H23_8_15 | Registration number of person helping with ADLs         |
| H26C_15  | Does someone help respondent to prepare a hot meal      |
| H27C_15  | Does someone help respondent to shop for groceries      |
| H28C_15  | Does someone help respondent to take medications        |
| H29C_15  | Does someone help respondent to manage his/her money    |
| H32_1_15 | Respondent's relationship with person helping with IADL |
| H32_2_15 | Respondent's relationship with person helping with IADL |
| H32_3_15 | Respondent's relationship with person helping with IADL |
| H32_4_15 | Respondent's relationship with person helping with IADL |
| H32_5_15 | Respondent's relationship with person helping with IADL |
| H32_6_15 | Respondent's relationship with person helping with IADL |
| H32_7_15 | Respondent's relationship with person helping with IADL |
| H32_8_15 | Respondent's relationship with person helping with IADL |
| H33_1_15 | Registration number of person helping with IADLs        |
| H33_2_15 | Registration number of person helping with IADLs        |
| H33_3_15 | Registration number of person helping with IADLs        |
| H33_4_15 | Registration number of person helping with IADLs        |
| H33_5_15 | Registration number of person helping with IADLs        |
| H33_6_15 | Registration number of person helping with IADLs        |
| H33_7_15 | Registration number of person helping with IADLs        |
| H33_8_15 | Registration number of person helping with IADLs        |
| Wave 5:  |   |
| H14_18   | Does someone help R to get dressed                      |
| H15D_18  | Does someone help R walking across a room               |
| H16D_18  | Does someone help R bathing or showering                |
| H17D_18  | Does someone help R eating                              |
| H18D_18  | Does someone help R getting in or out of bed            |
| H19D_18  | Does someone help R using the toilet                    |
| H22_1_18 | R's relationship with person helping with ADLs          |
| H22_2_18 | R's relationship with person helping with ADLs          |

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|          |  |
|----------|--|
| H22_3_18 | R's relationship with person helping with ADLs   |
| H23_1_18 | Registration number of person helping with ADLs  |
| H23_2_18 | Registration number of person helping with ADLs  |
| H23_3_18 | Registration number of person helping with ADLs  |
| H26C_18  | Does someone help R to prepare a hot meal        |
| H27C_18  | Does someone help R to shop for groceries        |
| H28C_18  | Does someone help R to take medications          |
| H29C_18  | Does someone help R to manage his/her money      |
| H32_1_18 | R's relationship with person helping with IADLs  |
| H32_2_18 | R's relationship with person helping with IADLs  |
| H32_3_18 | R's relationship with person helping with IADLs  |
| H33_1_18 | Registration number of person helping with IADLs |
| H33_2_18 | Registration number of person helping with IADLs |
| H33_3_18 | Registration number of person helping with IADLs |

**Activities of Daily Living and Instrumental Activities of Daily Living: Receives Informal Care from Spouse**

| Wave | Variable     | Label  | Type  |
|------|--------------|--|-------|
| 1    | R1RSCARE     | r1rscare: w1 R receives informal care from spouse for ADLs/I | Categ |
| 2    | R2RSCARE     | r2rscare: w2 R receives informal care from spouse for ADLs/I | Categ |
| 3    | R3RSCARE     | r3rscare: w3 R receives informal care from spouse for ADLs/I | Categ |
| 4    | R4RSCARE     | r4rscare: w4 R receives informal care from spouse for ADLs/I | Categ |
| 5    | R5RSCARE     | r5rscare: w5 R receives informal care from spouse for ADLs/I | Categ |
|      |              |  |       |
| 1    | S1RSCARE     | s1rscare: w1 S receives informal care from spouse for ADLs/I | Categ |
| 2    | S2RSCARE     | s2rscare: w2 S receives informal care from spouse for ADLs/I | Categ |
| 3    | S3RSCARE     | s3rscare: w3 S receives informal care from spouse for ADLs/I | Categ |
| 4    | S4RSCARE     | s4rscare: w4 S receives informal care from spouse for ADLs/I | Categ |
| 5    | S5RSCARE     | s5rscare: w5 S receives informal care from spouse for ADLs/I | Categ |
|      |              |  |       |
| 2    | R2RSCAREDPM  | r2rscaredpm: w2 days/month spouse helps R with ADLs/IADLs    | Cont  |
| 3    | R3RSCAREDPM  | r3rscaredpm: w3 days/month spouse helps R with ADLs/IADLs    | Cont  |
| 4    | R4RSCAREDPM  | r4rscaredpm: w4 days/month spouse helps R with ADLs/IADLs    | Cont  |
| 5    | R5RSCAREDPM  | r5rscaredpm: w5 days/month spouse helps R with ADLs/IADLs    | Cont  |
|      |              |  |       |
| 2    | S2RSCAREDPM  | s2rscaredpm: w2 days/month spouse helps S with ADLs/IADLs    | Cont  |
| 3    | S3RSCAREDPM  | s3rscaredpm: w3 days/month spouse helps S with ADLs/IADLs    | Cont  |
| 4    | S4RSCAREDPM  | s4rscaredpm: w4 days/month spouse helps S with ADLs/IADLs    | Cont  |
| 5    | S5RSCAREDPM  | s5rscaredpm: w5 days/month spouse helps S with ADLs/IADLs    | Cont  |
|      |              |  |       |
| 2    | R2RSCAREDPMM | r2rscaredpmm: w2 R # spouse missing days of help for ADLs/IA | Cont  |
| 3    | R3RSCAREDPMM | r3rscaredpmm: w3 R # spouse missing days of help for ADLs/IA | Cont  |
| 4    | R4RSCAREDPMM | r4rscaredpmm: w4 R # spouse missing days of help for ADLs/IA | Cont  |
| 5    | R5RSCAREDPMM | r5rscaredpmm: w5 R # spouse missing days of help for ADLs/IA | Cont  |
|      |              |  |       |
| 2    | S2RSCAREDPMM | s2rscaredpmm: w2 S # spouse missing days of help for ADLs/IA | Cont  |
| 3    | S3RSCAREDPMM | s3rscaredpmm: w3 S # spouse missing days of help for ADLs/IA | Cont  |
| 4    | S4RSCAREDPMM | s4rscaredpmm: w4 S # spouse missing days of help for ADLs/IA | Cont  |
| 5    | S5RSCAREDPMM | s5rscaredpmm: w5 S # spouse missing days of help for ADLs/IA | Cont  |
|      |              |  |       |
| 2    | R2RSCAREHR   | r2rscarehr: w2 hours/day spouse helps R with ADLs/IADLs      | Cont  |
| 3    | R3RSCAREHR   | r3rscarehr: w3 hours/day spouse helps R with ADLs/IADLs      | Cont  |
| 4    | R4RSCAREHR   | r4rscarehr: w4 hours/day spouse helps R with ADLs/IADLs      | Cont  |
| 5    | R5RSCAREHR   | r5rscarehr: w5 hours/day spouse helps R with ADLs/IADLs      | Cont  |
|      |              |  |       |
| 2    | S2RSCAREHR   | s2rscarehr: w2 hours/day spouse helps S with ADLs/IADLs      | Cont  |
| 3    | S3RSCAREHR   | s3rscarehr: w3 hours/day spouse helps S with ADLs/IADLs      | Cont  |
| 4    | S4RSCAREHR   | s4rscarehr: w4 hours/day spouse helps S with ADLs/IADLs      | Cont  |
| 5    | S5RSCAREHR   | s5rscarehr: w5 hours/day spouse helps S with ADLs/IADLs      | Cont  |
|      |              |  |       |
| 2    | R2RSCAREHRM  | r2rscarehrm: w2 R # spouse missing hours of help for ADLs/IA | Cont  |
| 3    | R3RSCAREHRM  | r3rscarehrm: w3 R # spouse missing hours of help for ADLs/IA | Cont  |
| 4    | R4RSCAREHRM  | r4rscarehrm: w4 R # spouse missing hours of help for ADLs/IA | Cont  |
| 5    | R5RSCAREHRM  | r5rscarehrm: w5 R # spouse missing hours of help for ADLs/IA | Cont  |
|      |              |  |       |
| 2    | S2RSCAREHRM  | s2rscarehrm: w2 S # spouse missing hours of help for ADLs/IA | Cont  |
| 3    | S3RSCAREHRM  | s3rscarehrm: w3 S # spouse missing hours of help for ADLs/IA | Cont  |
| 4    | S4RSCAREHRM  | s4rscarehrm: w4 S # spouse missing hours of help for ADLs/IA | Cont  |
| 5    | S5RSCAREHRM  | s5rscarehrm: w5 S # spouse missing hours of help for ADLs/IA | Cont  |

**Descriptive Statistics**

| Variable | N    | Mean | Std Dev | Minimum | Maximum |
|----------|------|------|---------|---------|---------|
| R1RSCARE | 1774 | 0.55 | 0.50    | 0.00    | 1.00    |
| R2RSCARE | 1674 | 0.41 | 0.49    | 0.00    | 1.00    |

|              |      |       |       |      |       |
|--------------|------|-------|-------|------|-------|
| R3RSCARE     | 2318 | 0.33  | 0.47  | 0.00 | 1.00  |
| R4RSCARE     | 2516 | 0.31  | 0.46  | 0.00 | 1.00  |
| R5RSCARE     | 2211 | 0.20  | 0.40  | 0.00 | 1.00  |
| S1RSCARE     | 1148 | 0.83  | 0.37  | 0.00 | 1.00  |
| S2RSCARE     | 1029 | 0.66  | 0.47  | 0.00 | 1.00  |
| S3RSCARE     | 1251 | 0.60  | 0.49  | 0.00 | 1.00  |
| S4RSCARE     | 1277 | 0.59  | 0.49  | 0.00 | 1.00  |
| S5RSCARE     | 934  | 0.37  | 0.48  | 0.00 | 1.00  |
| R2RSCAREDPM  | 1673 | 10.75 | 14.08 | 0.00 | 30.00 |
| R3RSCAREDPM  | 2313 | 8.03  | 12.85 | 0.00 | 30.00 |
| R4RSCAREDPM  | 2511 | 6.55  | 11.83 | 0.00 | 30.00 |
| R5RSCAREDPM  | 2182 | 4.93  | 11.06 | 0.00 | 60.00 |
| S2RSCAREDPM  | 1028 | 17.37 | 14.33 | 0.00 | 30.00 |
| S3RSCAREDPM  | 1247 | 14.57 | 14.31 | 0.00 | 30.00 |
| S4RSCAREDPM  | 1272 | 12.56 | 13.91 | 0.00 | 30.00 |
| S5RSCAREDPM  | 907  | 9.32  | 13.90 | 0.00 | 60.00 |
| R2RSCAREDPMM | 1674 | 0.00  | 0.02  | 0.00 | 1.00  |
| R3RSCAREDPMM | 2318 | 0.00  | 0.05  | 0.00 | 1.00  |
| R4RSCAREDPMM | 2516 | 0.00  | 0.04  | 0.00 | 1.00  |
| R5RSCAREDPMM | 2211 | 0.01  | 0.12  | 0.00 | 1.00  |
| S2RSCAREDPMM | 1029 | 0.00  | 0.03  | 0.00 | 1.00  |
| S3RSCAREDPMM | 1251 | 0.00  | 0.06  | 0.00 | 1.00  |
| S4RSCAREDPMM | 1277 | 0.00  | 0.06  | 0.00 | 1.00  |
| S5RSCAREDPMM | 934  | 0.03  | 0.18  | 0.00 | 1.00  |
| R2RSCAREHR   | 1671 | 2.08  | 4.37  | 0.00 | 24.00 |
| R3RSCAREHR   | 2303 | 2.91  | 6.52  | 0.00 | 24.00 |
| R4RSCAREHR   | 2508 | 1.52  | 3.73  | 0.00 | 24.00 |
| R5RSCAREHR   | 2173 | 1.19  | 4.00  | 0.00 | 29.00 |
| S2RSCAREHR   | 1026 | 3.35  | 5.13  | 0.00 | 24.00 |
| S3RSCAREHR   | 1237 | 5.31  | 8.08  | 0.00 | 24.00 |
| S4RSCAREHR   | 1269 | 2.90  | 4.72  | 0.00 | 24.00 |
| S5RSCAREHR   | 899  | 2.47  | 5.72  | 0.00 | 29.00 |
| R2RSCAREHRM  | 1674 | 0.00  | 0.04  | 0.00 | 1.00  |
| R3RSCAREHRM  | 2318 | 0.01  | 0.09  | 0.00 | 1.00  |
| R4RSCAREHRM  | 2516 | 0.00  | 0.06  | 0.00 | 1.00  |
| R5RSCAREHRM  | 2211 | 0.02  | 0.14  | 0.00 | 1.00  |
| S2RSCAREHRM  | 1029 | 0.00  | 0.05  | 0.00 | 1.00  |
| S3RSCAREHRM  | 1251 | 0.01  | 0.11  | 0.00 | 1.00  |
| S4RSCAREHRM  | 1277 | 0.01  | 0.08  | 0.00 | 1.00  |
| S5RSCAREHRM  | 934  | 0.04  | 0.20  | 0.00 | 1.00  |

## Categorical Variable Codes

| Value-----          | R1RSCARE | R2RSCARE | R3RSCARE | R4RSCARE | R5RSCARE |
|---------------------|----------|----------|----------|----------|----------|
| .d:DK               | 1        |          | 1        | 6        | 2        |
| .h:no help received | 812      | 729      | 1771     | 1666     | 1545     |
| .m:Missing          | 40       | 30       |          | 40       | 18       |
| .r:Refuse           | 2        |          | 1        | 1        | 82       |
| .x:no difficulty    | 12557    | 11271    | 11632    | 10550    | 13256    |
| 0.No                | 804      | 989      | 1548     | 1742     | 1768     |
| 1.Yes               | 970      | 685      | 770      | 774      | 443      |
| Value-----          | S1RSCARE | S2RSCARE | S3RSCARE | S4RSCARE | S5RSCARE |
| .d:DK               |          |          | 1        | 5        |          |
| .h:no help received | 501      | 487      | 1213     | 1072     | 716      |
| .m:Missing          | 14       | 8        |          | 10       | 3        |

|                  |  |      |      |      |      |      |
|------------------|--|------|------|------|------|------|
| .r:Refuse        |  | 1    |      |      |      | 55   |
| .u:Unmar         |  | 4205 | 4009 | 4782 | 4847 | 5227 |
| .v:SP NR         |  | 333  | 131  | 349  | 280  | 501  |
| .x:no difficulty |  | 8984 | 8040 | 8127 | 7288 | 5753 |
| 0.No             |  | 191  | 348  | 501  | 528  | 591  |
| 1.Yes            |  | 957  | 681  | 750  | 749  | 343  |

## How Constructed

The following variables indicate whether the respondent's spouse helps the respondent with any ADL or IADL needs. The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. If the respondent reports having difficulty with an ADL or IADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with ADLs and IADLs each. The information used to derive these variables is taken from the help files in Waves 1 and 2 and from the individual files in Waves 3 and forward. For each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

The following variables are coded as special missing value .x if the respondent reports no difficulty with any ADL or IADL, and are coded as special missing value .h if the respondent reports difficulty with an ADL or IADL but does not receive any help. Don't know, refused, and other missing responses are assigned special missing values .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwRSCARE, RwRSCAREDPM, RwRSCAREDPMM, RwRSCAREHR, and RwRSCAREHRM include help from the respondent's spouse.

RwRSCARE indicates whether the respondent's spouse helps the respondent with any ADL or IADL needs. RwRSCARE is coded as 0 if the respondent receives no assistance from their spouse; and is coded as 1 if the respondent does receive help from their spouse.

RwRSCAREDPM indicates the number of days per month the respondent's spouse helps the respondent with ADL or IADL needs. If the respondent reports receiving help every day from their spouse, then a value of 30 is assumed. RwRSCAREDPM is assigned a value of 0 if the respondent did not receive help from their spouse. RwRSCAREDPMM indicates whether no value of days was reported for their spouse helper and so was not accounted for in RwRSCAREDPM. RwRSCAREDPMM is assigned special missing value .m if the respondent was not helped by their spouse. RwRSCAREDPM and RwRSCAREDPMM are not available in wave 1.

RwRSCAREHR indicates the number of hours per day the respondent's spouse helps the respondent with any ADL or IADL needs. Respondents are asked, on days their spouse helps with a particular ADL or IADL need, how many hours per day their spouse helps. If the respondent reports less than an hour for their spouse, then a 1 is assumed. RwRSCAREHR is assigned a value of 0 if the respondent did not receive help from their spouse. RwRSCAREHRM indicates whether no value of hours was reported for their spouse helper and so was not accounted for in RwRSCAREHR. RwRSCAREHRM is assigned special missing value .m if the respondent was not helped by their spouse. RwRSCAREHR and RwRSCAREHRM are not available in wave 1.

SwRSCARE, SwRSCAREDPM, and SwRSCAREHR indicate whether and the frequency with which the respondent's current wave's spouse receives help from the respondent, and their values are taken from RwRSCARE, RwRSCAREDPM, and RwRSCAREHR. SwRSCAREDPMM and SwRSCAREHRM indicate whether or not a value was reported for the number of days and hours the respondent's current spouse was helped by the respondent and are taken from RwRSCAREDPMM and RwRSCAREHRM. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

The respondent is asked the number of days per month and hours per day the respondent receives help from their spouse starting in Wave 2.

Respondents are allowed to mention up to 12 caregivers each in Waves 1 and 2 for ADLs and IADLs, up to 8 caregivers each in Waves 3 and 4 for ADLs and IADLs, and up to 3 caregivers each in Wave 5 for ADLs and IADLs.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible. These variables in the Harmonized HRS include help provided by the respondent's spouse or former spouse, whereas these variables only include help provided by the respondent's spouse in the Harmonized MHAS.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, these variables in the Harmonized HRS also include help using the telephone, whereas in the Harmonized MHAS they do not include help using the telephone.

RwRSCAREDPW in the Harmonized HRS indicates the days per week the respondent received help, while RwRSCAREDPM in the Harmonized MHAS indicates the days per month the respondent received help. As such, adjustment must be made before comparison of these variables.

The HRS asks for up to 7 relationships of people who help with ADLs (dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet). The MHAS, in contrast, asks for the relationships of a varying number of people across waves who help with ADLs. The HRS asks for up to 6 relationships of people who help with IADLs (preparing meals, grocery shopping, making phone calls, and taking medications), and up to 2 people who help with managing money. The MHAS, in contrast, asks for the relationships of a varying number of people who help with preparing meals, grocery shopping, taking medications, and managing money together.

## MHAS Variables Used

### Wave 1:

|       |  |
|-------|--|
| H14   | help dressing                          |
| H15_3 | spouse helps walking                   |
| H15_4 | other helps walking                    |
| H16_3 | spouse helps bathing                   |
| H16_4 | other helps bathing                    |
| H17_3 | spouse helps eating                    |
| H17_4 | other helps eating                     |
| H18_3 | spouse helps getting in and out of bed |
| H18_4 | other helps getting in and out of bed  |
| H19_3 | spouse helps using toilet              |
| H19_4 | other helps using toilet               |
| H26_3 | spouse helps with hot meal             |
| H26_4 | someone helps with hot meal            |
| H27_3 | spouse helps with shopping             |
| H27_4 | someone helps with shopping            |
| H28_3 | spouse helps with taking medication    |
| H28_4 | someone helps with taking medication   |
| H29_3 | spouse helps with managing money       |
| H29_4 | someone helps with managing money      |

### Wave 1 Helper:

|     |                         |
|-----|-------------------------|
| H22 | kinship of helper       |
| H23 | roster number of helper |
| H24 | days of help            |
| H25 | hours of help           |
| H32 | kinship of helper       |
| H33 | roster number of helper |
| H34 | days of help            |

|                |   |
|----------------|---|
| H35            | hours of help                                   |
| Wave 2:        |   |
| H14            | someone help you to get dressed                 |
| H15E           | spouse helps                                    |
| H15F           | additional person helps                         |
| H16E           | spouse helps                                    |
| H16F           | additional person helps                         |
| H17E           | spouse helps                                    |
| H17F           | additional person helps                         |
| H18E           | spouse helps                                    |
| H18F           | additional person helps                         |
| H19E           | spouse helps                                    |
| H19F           | additional person helps                         |
| H26D           | spouse helps                                    |
| H26E           | additional person helps                         |
| H27D           | spouse helps                                    |
| H27E           | additional person helps                         |
| H28D           | spouse helps                                    |
| H28E           | additional person helps                         |
| H29D           | spouse helps                                    |
| H29E           | additional person helps                         |
| Wave 2 Helper: |   |
| H22            | relationship                                    |
| H23            | registration number                             |
| H24            | number of days (name) helped last month         |
| H25            | number of hours during those days               |
| H32            | relationship                                    |
| H33            | registration number                             |
| H34            | number of days (name) helped last month         |
| H35            | how many hours during those days                |
| Wave 3:        |   |
| H14_12         | Someone help you to get dressed                 |
| H15D_12        | Someone help you walk across room               |
| H16D_12        | Someone help you to bathe or shower             |
| H17D_12        | Does someone help you eat your food             |
| H18D_12        | Does someone help you get into or out of bed    |
| H19D_12        | Does someone help you use toilet, get on off    |
| H22_1_12       | Relationship with helper for ADLs               |
| H22_2_12       | Relationship with helper for ADLs               |
| H22_3_12       | Relationship with helper for ADLs               |
| H22_4_12       | Relationship with helper for ADLs               |
| H22_5_12       | Relationship with helper for ADLs               |
| H22_6_12       | Relationship with helper for ADLs               |
| H22_7_12       | Relationship with helper for ADLs               |
| H22_8_12       | Relationship with helper for ADLs               |
| H23_1_12       | Registration number of helper for ADLs          |
| H23_2_12       | Registration number of helper for ADLs          |
| H23_3_12       | Registration number of helper for ADLs          |
| H23_4_12       | Registration number of helper for ADLs          |
| H23_5_12       | Registration number of helper for ADLs          |
| H23_6_12       | Registration number of helper for ADLs          |
| H23_7_12       | Registration number of helper for ADLs          |
| H23_8_12       | Registration number of helper for ADLs          |
| H24_1_12       | Number of days (name) helped last month         |
| H24_2_12       | Number of days (name) helped last month         |
| H24_3_12       | Number of days (name) helped last month         |
| H24_4_12       | Number of days (name) helped last month         |
| H24_5_12       | Number of days (name) helped last month         |
| H24_6_12       | Number of days (name) helped last month         |
| H24_7_12       | Number of days (name) helped last month         |
| H24_8_12       | Number of days (name) helped last month         |
| H25_1_12       | Number of hours during those days (NAME) helped |
| H25_2_12       | Number of hours during those days (NAME) helped |
| H25_3_12       | Number of hours during those days (NAME) helped |

|          |   |
|----------|---|
| H25_4_12 | Number of hours during those days (NAME) helped |
| H25_5_12 | Number of hours during those days (NAME) helped |
| H25_6_12 | Number of hours during those days (NAME) helped |
| H25_7_12 | Number of hours during those days (NAME) helped |
| H25_8_12 | Number of hours during those days (NAME) helped |
| H26C_12  | Does anyone help you prepare a hot meal         |
| H27C_12  | Does anyone help you shop for groceries         |
| H28C_12  | Does anyone help you take medications           |
| H29C_12  | Does anyone one help you manage your money      |
| H32_1_12 | Relationship with helper for IADLs              |
| H32_2_12 | Relationship with helper for IADLs              |
| H32_3_12 | Relationship with helper for IADLs              |
| H32_4_12 | Relationship with helper for IADLs              |
| H32_5_12 | Relationship with helper for IADLs              |
| H32_6_12 | Relationship with helper for IADLs              |
| H32_7_12 | Relationship with helper for IADLs              |
| H32_8_12 | Relationship with helper for IADLs              |
| H33_1_12 | Registration number of helper for IADLs         |
| H33_2_12 | Registration number of helper for ADLs          |
| H33_3_12 | Registration number of helper for IADLs         |
| H33_4_12 | Registration number of helper for IADLs         |
| H33_5_12 | Registration number of helper for IADLs         |
| H33_6_12 | Registration number of helper for IADLs         |
| H33_7_12 | Registration number of helper for IADLs         |
| H33_8_12 | Registration number of helper for IADLs         |
| H34_1_12 | Number of days (name) helped last month         |
| H34_2_12 | Number of days (name) helped last month         |
| H34_3_12 | Number of days (name) helped last month         |
| H34_4_12 | Number of days (name) helped last month         |
| H34_5_12 | Number of days (name) helped last month         |
| H34_6_12 | Number of days (name) helped last month         |
| H34_7_12 | Number of days (name) helped last month         |
| H34_8_12 | Number of days (name) helped last month         |
| H35_1_12 | Number of hours during those days (NAME) helped |
| H35_2_12 | Number of hours during those days (NAME) helped |
| H35_3_12 | Number of hours during those days (NAME) helped |
| H35_4_12 | Number of hours during those days (NAME) helped |
| H35_5_12 | Number of hours during those days (NAME) helped |
| H35_6_12 | Number of hours during those days (NAME) helped |
| H35_7_12 | Number of hours during those days (NAME) helped |
| H35_8_12 | Number of hours during those days (NAME) helped |

## Wave 4:

|          |   |
|----------|---|
| H14_15   | Does someone help respondent to get dressed             |
| H15D_15  | Does someone help respondent walking across a room      |
| H16D_15  | Does someone help respondent bathing or showering       |
| H17D_15  | Does someone help respondent eating                     |
| H18D_15  | Does someone help respondent getting in or out of bed   |
| H19D_15  | Does someone help respondent using the toilet           |
| H22_1_15 | Respondent's relationship with person helping with ADLs |
| H22_2_15 | Respondent's relationship with person helping with ADLs |
| H22_3_15 | Respondent's relationship with person helping with ADLs |
| H22_4_15 | Respondent's relationship with person helping with ADLs |
| H22_5_15 | Respondent's relationship with person helping with ADLs |
| H22_6_15 | Respondent's relationship with person helping with ADLs |
| H22_7_15 | Respondent's relationship with person helping with ADLs |
| H22_8_15 | Respondent's relationship with person helping with ADLs |
| H23_1_15 | Registration number of person helping with ADLs         |
| H23_2_15 | Registration number of person helping with ADLs         |
| H23_3_15 | Registration number of person helping with ADLs         |
| H23_4_15 | Registration number of person helping with ADLs         |
| H23_5_15 | Registration number of person helping with ADLs         |
| H23_6_15 | Registration number of person helping with ADLs         |
| H23_7_15 | Registration number of person helping with ADLs         |
| H23_8_15 | Registration number of person helping with ADLs         |



|          |   |
|----------|---|
| H24_1_15 | Number of days the person helped during last month      |
| H24_2_15 | Number of days the person helped during last month      |
| H24_3_15 | Number of days the person helped during last month      |
| H24_4_15 | Number of days the person helped during last month      |
| H24_5_15 | Number of days the person helped during last month      |
| H24_6_15 | Number of days the person helped during last month      |
| H24_7_15 | Number of days the person helped during last month      |
| H24_8_15 | Number of days the person helped during last month      |
| H25_1_15 | Number of hours during those days that the person helps |
| H25_2_15 | Number of hours during those days that the person helps |
| H25_3_15 | Number of hours during those days that the person helps |
| H25_4_15 | Number of hours during those days that the person helps |
| H25_5_15 | Number of hours during those days that the person helps |
| H25_6_15 | Number of hours during those days that the person helps |
| H25_7_15 | Number of hours during those days that the person helps |
| H25_8_15 | Number of hours during those days that the person helps |
| H26C_15  | Does someone help respondent to prepare a hot meal      |
| H27C_15  | Does someone help respondent to shop for groceries      |
| H28C_15  | Does someone help respondent to take medications        |
| H29C_15  | Does someone help respondent to manage his/her money    |
| H32_1_15 | Respondent's relationship with person helping with IADL |
| H32_2_15 | Respondent's relationship with person helping with IADL |
| H32_3_15 | Respondent's relationship with person helping with IADL |
| H32_4_15 | Respondent's relationship with person helping with IADL |
| H32_5_15 | Respondent's relationship with person helping with IADL |
| H32_6_15 | Respondent's relationship with person helping with IADL |
| H32_7_15 | Respondent's relationship with person helping with IADL |
| H32_8_15 | Respondent's relationship with person helping with IADL |
| H33_1_15 | Registration number of person helping with IADLs        |
| H33_2_15 | Registration number of person helping with IADLs        |
| H33_3_15 | Registration number of person helping with IADLs        |
| H33_4_15 | Registration number of person helping with IADLs        |
| H33_5_15 | Registration number of person helping with IADLs        |
| H33_6_15 | Registration number of person helping with IADLs        |
| H33_7_15 | Registration number of person helping with IADLs        |
| H33_8_15 | Registration number of person helping with IADLs        |
| H34_1_15 | Number of days the person helped during last month      |
| H34_2_15 | Number of days the person helped during last month      |
| H34_3_15 | Number of days the person helped during last month      |
| H34_4_15 | Number of days the person helped during last month      |
| H34_5_15 | Number of days the person helped during last month      |
| H34_6_15 | Number of days the person helped during last month      |
| H34_7_15 | Number of days the person helped during last month      |
| H34_8_15 | Number of days the person helped during last month      |
| H35_1_15 | Number of hours during those days that the person helps |
| H35_2_15 | Number of hours during those days that the person helps |
| H35_3_15 | Number of hours during those days that the person helps |
| H35_4_15 | Number of hours during those days that the person helps |
| H35_5_15 | Number of hours during those days that the person helps |
| H35_6_15 | Number of hours during those days that the person helps |
| H35_7_15 | Number of hours during those days that the person helps |
| H35_8_15 | Number of hours during those days that the person helps |

## Wave 5:

|          |   |
|----------|---|
| H14_18   | Does someone help R to get dressed              |
| H15D_18  | Does someone help R walking across a room       |
| H16D_18  | Does someone help R bathing or showering        |
| H17D_18  | Does someone help R eating                      |
| H18D_18  | Does someone help R getting in or out of bed    |
| H19D_18  | Does someone help R using the toilet            |
| H22_1_18 | R's relationship with person helping with ADLs  |
| H22_2_18 | R's relationship with person helping with ADLs  |
| H22_3_18 | R's relationship with person helping with ADLs  |
| H23_1_18 | Registration number of person helping with ADLs |
| H23_2_18 | Registration number of person helping with ADLs |

|          |   |
|----------|---|
| H23_3_18 | Registration number of person helping with ADLs         |
| H24_1_18 | Number of days the person helped during last month      |
| H24_2_18 | Number of days the person helped during last month      |
| H24_3_18 | Number of days the person helped during last month      |
| H25_1_18 | Number of hours during those days that the person helps |
| H25_2_18 | Number of hours during those days that the person helps |
| H25_3_18 | Number of hours during those days that the person helps |
| H26C_18  | Does someone help R to prepare a hot meal               |
| H27C_18  | Does someone help R to shop for groceries               |
| H28C_18  | Does someone help R to take medications                 |
| H29C_18  | Does someone help R to manage his/her money             |
| H32_1_18 | R's relationship with person helping with IADLs         |
| H32_2_18 | R's relationship with person helping with IADLs         |
| H32_3_18 | R's relationship with person helping with IADLs         |
| H33_1_18 | Registration number of person helping with IADLs        |
| H33_2_18 | Registration number of person helping with IADLs        |
| H33_3_18 | Registration number of person helping with IADLs        |
| H34_1_18 | Number of days the person helped during last month      |
| H34_2_18 | Number of days the person helped during last month      |
| H34_3_18 | Number of days the person helped during last month      |
| H35_1_18 | Number of hours during those days that the person helps |
| H35_2_18 | Number of hours during those days that the person helps |
| H35_3_18 | Number of hours during those days that the person helps |

**Activities of Daily Living and Instrumental Activities of Daily Living: Receives Informal Care from Children or Grandchildren**

| Wave | Variable     | Label  | Type  |
|------|--------------|--|-------|
| 1    | R1RCCARE     | r1rccare: w1 R receives informal care from kids/grandkids fo | Categ |
| 2    | R2RCCARE     | r2rccare: w2 R receives informal care from kids/grandkids fo | Categ |
| 3    | R3RCCARE     | r3rccare: w3 R receives informal care from kids/grandkids fo | Categ |
| 4    | R4RCCARE     | r4rccare: w4 R receives informal care from kids/grandkids fo | Categ |
| 5    | R5RCCARE     | r5rccare: w5 R receives informal care from kids/grandkids fo | Categ |
| 1    | S1RCCARE     | s1rccare: w1 S receives informal care from kids/grandkids fo | Categ |
| 2    | S2RCCARE     | s2rccare: w2 S receives informal care from kids/grandkids fo | Categ |
| 3    | S3RCCARE     | s3rccare: w3 S receives informal care from kids/grandkids fo | Categ |
| 4    | S4RCCARE     | s4rccare: w4 S receives informal care from kids/grandkids fo | Categ |
| 5    | S5RCCARE     | s5rccare: w5 S receives informal care from kids/grandkids fo | Categ |
| 1    | R1RCCAREN    | r1rccaren: w1 # kids/grandkids who help R with ADLs/IADLs    | Cont  |
| 2    | R2RCCAREN    | r2rccaren: w2 # kids/grandkids who help R with ADLs/IADLs    | Cont  |
| 3    | R3RCCAREN    | r3rccaren: w3 # kids/grandkids who help R with ADLs/IADLs    | Cont  |
| 4    | R4RCCAREN    | r4rccaren: w4 # kids/grandkids who help R with ADLs/IADLs    | Cont  |
| 5    | R5RCCAREN    | r5rccaren: w5 # kids/grandkids who help R with ADLs/IADLs    | Cont  |
| 1    | S1RCCAREN    | s1rccaren: w1 # kids/grandkids who help S with ADLs/IADLs    | Cont  |
| 2    | S2RCCAREN    | s2rccaren: w2 # kids/grandkids who help S with ADLs/IADLs    | Cont  |
| 3    | S3RCCAREN    | s3rccaren: w3 # kids/grandkids who help S with ADLs/IADLs    | Cont  |
| 4    | S4RCCAREN    | s4rccaren: w4 # kids/grandkids who help S with ADLs/IADLs    | Cont  |
| 5    | S5RCCAREN    | s5rccaren: w5 # kids/grandkids who help S with ADLs/IADLs    | Cont  |
| 1    | R1RCCAREDPM  | r1rccaredpm: w1 days/month kids/grandkids help R with ADLs/I | Cont  |
| 2    | R2RCCAREDPM  | r2rccaredpm: w2 days/month kids/grandkids help R with ADLs/I | Cont  |
| 3    | R3RCCAREDPM  | r3rccaredpm: w3 days/month kids/grandkids help R with ADLs/I | Cont  |
| 4    | R4RCCAREDPM  | r4rccaredpm: w4 days/month kids/grandkids help R with ADLs/I | Cont  |
| 5    | R5RCCAREDPM  | r5rccaredpm: w5 days/month kids/grandkids help R with ADLs/I | Cont  |
| 1    | S1RCCAREDPM  | s1rccaredpm: w1 days/month kids/grandkids help S with ADLs/I | Cont  |
| 2    | S2RCCAREDPM  | s2rccaredpm: w2 days/month kids/grandkids help S with ADLs/I | Cont  |
| 3    | S3RCCAREDPM  | s3rccaredpm: w3 days/month kids/grandkids help S with ADLs/I | Cont  |
| 4    | S4RCCAREDPM  | s4rccaredpm: w4 days/month kids/grandkids help S with ADLs/I | Cont  |
| 5    | S5RCCAREDPM  | s5rccaredpm: w5 days/month kids/grandkids help S with ADLs/I | Cont  |
| 1    | R1RCCAREDPMM | r1rccaredpmm: w1 R # kids/grandkids missing days of help for | Cont  |
| 2    | R2RCCAREDPMM | r2rccaredpmm: w2 R # kids/grandkids missing days of help for | Cont  |
| 3    | R3RCCAREDPMM | r3rccaredpmm: w3 R # kids/grandkids missing days of help for | Cont  |
| 4    | R4RCCAREDPMM | r4rccaredpmm: w4 R # kids/grandkids missing days of help for | Cont  |
| 5    | R5RCCAREDPMM | r5rccaredpmm: w5 R # kids/grandkids missing days of help for | Cont  |
| 1    | S1RCCAREDPMM | s1rccaredpmm: w1 S # kids/grandkids missing days of help for | Cont  |
| 2    | S2RCCAREDPMM | s2rccaredpmm: w2 S # kids/grandkids missing days of help for | Cont  |
| 3    | S3RCCAREDPMM | s3rccaredpmm: w3 S # kids/grandkids missing days of help for | Cont  |
| 4    | S4RCCAREDPMM | s4rccaredpmm: w4 S # kids/grandkids missing days of help for | Cont  |
| 5    | S5RCCAREDPMM | s5rccaredpmm: w5 S # kids/grandkids missing days of help for | Cont  |
| 1    | R1RCCAREHR   | r1rccarehr: w1 hours/day kids/grandkids help R with ADLs/IAD | Cont  |
| 2    | R2RCCAREHR   | r2rccarehr: w2 hours/day kids/grandkids help R with ADLs/IAD | Cont  |
| 3    | R3RCCAREHR   | r3rccarehr: w3 hours/day kids/grandkids help R with ADLs/IAD | Cont  |
| 4    | R4RCCAREHR   | r4rccarehr: w4 hours/day kids/grandkids help R with ADLs/IAD | Cont  |
| 5    | R5RCCAREHR   | r5rccarehr: w5 hours/day kids/grandkids help R with ADLs/IAD | Cont  |
| 1    | S1RCCAREHR   | s1rccarehr: w1 hours/day kids/grandkids help S with ADLs/IAD | Cont  |
| 2    | S2RCCAREHR   | s2rccarehr: w2 hours/day kids/grandkids help S with ADLs/IAD | Cont  |
| 3    | S3RCCAREHR   | s3rccarehr: w3 hours/day kids/grandkids help S with ADLs/IAD | Cont  |

|   |             |   |      |
|---|-------------|---|------|
| 4 | S4RCCAREHR  | s4rcccarehr: w4 hours/day kids/grandkids help S with ADLs/IAD | Cont |
| 5 | S5RCCAREHR  | s5rcccarehr: w5 hours/day kids/grandkids help S with ADLs/IAD | Cont |
| 1 | R1RCCAREHRM | r1rcccarehrm: w1 R # kids/grandkids missing hours of help for | Cont |
| 2 | R2RCCAREHRM | r2rcccarehrm: w2 R # kids/grandkids missing hours of help for | Cont |
| 3 | R3RCCAREHRM | r3rcccarehrm: w3 R # kids/grandkids missing hours of help for | Cont |
| 4 | R4RCCAREHRM | r4rcccarehrm: w4 R # kids/grandkids missing hours of help for | Cont |
| 5 | R5RCCAREHRM | r5rcccarehrm: w5 R # kids/grandkids missing hours of help for | Cont |
| 1 | S1RCCAREHRM | s1rcccarehrm: w1 S # kids/grandkids missing hours of help for | Cont |
| 2 | S2RCCAREHRM | s2rcccarehrm: w2 S # kids/grandkids missing hours of help for | Cont |
| 3 | S3RCCAREHRM | s3rcccarehrm: w3 S # kids/grandkids missing hours of help for | Cont |
| 4 | S4RCCAREHRM | s4rcccarehrm: w4 S # kids/grandkids missing hours of help for | Cont |
| 5 | S5RCCAREHRM | s5rcccarehrm: w5 S # kids/grandkids missing hours of help for | Cont |

## Descriptive Statistics

| Variable     | N    | Mean  | Std Dev | Minimum | Maximum |
|--------------|------|-------|---------|---------|---------|
| R1RCCARE     | 1774 | 0.50  | 0.50    | 0.00    | 1.00    |
| R2RCCARE     | 1674 | 0.55  | 0.50    | 0.00    | 1.00    |
| R3RCCARE     | 2318 | 0.60  | 0.49    | 0.00    | 1.00    |
| R4RCCARE     | 2516 | 0.64  | 0.48    | 0.00    | 1.00    |
| R5RCCARE     | 2211 | 0.66  | 0.47    | 0.00    | 1.00    |
| S1RCCARE     | 1148 | 0.35  | 0.48    | 0.00    | 1.00    |
| S2RCCARE     | 1029 | 0.41  | 0.49    | 0.00    | 1.00    |
| S3RCCARE     | 1251 | 0.42  | 0.49    | 0.00    | 1.00    |
| S4RCCARE     | 1277 | 0.45  | 0.50    | 0.00    | 1.00    |
| S5RCCARE     | 934  | 0.54  | 0.50    | 0.00    | 1.00    |
| R1RCCAREN    | 1774 | 0.76  | 1.06    | 0.00    | 13.00   |
| R2RCCAREN    | 1674 | 0.84  | 1.04    | 0.00    | 9.00    |
| R3RCCAREN    | 2318 | 0.81  | 0.86    | 0.00    | 8.00    |
| R4RCCAREN    | 2516 | 0.87  | 0.89    | 0.00    | 8.00    |
| R5RCCAREN    | 2211 | 1.02  | 0.97    | 0.00    | 4.00    |
| S1RCCAREN    | 1148 | 0.56  | 0.98    | 0.00    | 9.00    |
| S2RCCAREN    | 1029 | 0.62  | 0.98    | 0.00    | 8.00    |
| S3RCCAREN    | 1251 | 0.57  | 0.84    | 0.00    | 6.00    |
| S4RCCAREN    | 1277 | 0.61  | 0.87    | 0.00    | 8.00    |
| S5RCCAREN    | 934  | 0.80  | 0.91    | 0.00    | 4.00    |
| R1RCCAREDPM  | 1774 | 17.74 | 28.04   | 0.00    | 363.00  |
| R2RCCAREDPM  | 1673 | 19.09 | 25.75   | 0.00    | 195.00  |
| R3RCCAREDPM  | 2304 | 16.42 | 21.04   | 0.00    | 180.00  |
| R4RCCAREDPM  | 2512 | 16.10 | 20.12   | 0.00    | 210.00  |
| R5RCCAREDPM  | 2175 | 23.09 | 25.79   | 0.00    | 120.00  |
| S1RCCAREDPM  | 1148 | 12.53 | 25.13   | 0.00    | 270.00  |
| S2RCCAREDPM  | 1029 | 13.64 | 23.76   | 0.00    | 195.00  |
| S3RCCAREDPM  | 1243 | 10.36 | 18.33   | 0.00    | 180.00  |
| S4RCCAREDPM  | 1275 | 10.35 | 16.86   | 0.00    | 120.00  |
| S5RCCAREDPM  | 921  | 17.40 | 23.50   | 0.00    | 94.00   |
| R1RCCAREDPMM | 1774 | 0.00  | 0.00    | 0.00    | 0.00    |
| R2RCCAREDPMM | 1674 | 0.00  | 0.02    | 0.00    | 1.00    |
| R3RCCAREDPMM | 2318 | 0.01  | 0.10    | 0.00    | 2.00    |
| R4RCCAREDPMM | 2516 | 0.01  | 0.08    | 0.00    | 2.00    |
| R5RCCAREDPMM | 2211 | 0.03  | 0.22    | 0.00    | 3.00    |
| S1RCCAREDPMM | 1148 | 0.00  | 0.00    | 0.00    | 0.00    |
| S2RCCAREDPMM | 1029 | 0.00  | 0.00    | 0.00    | 0.00    |
| S3RCCAREDPMM | 1251 | 0.01  | 0.09    | 0.00    | 1.00    |

|              |      |      |       |      |        |
|--------------|------|------|-------|------|--------|
| S4RCCAREDPMM | 1277 | 0.00 | 0.06  | 0.00 | 1.00   |
| S5RCCAREDPMM | 934  | 0.03 | 0.21  | 0.00 | 3.00   |
| R1RCCAREHR   | 1774 | 3.46 | 6.74  | 0.00 | 80.00  |
| R2RCCAREHR   | 1673 | 4.06 | 9.07  | 0.00 | 216.00 |
| R3RCCAREHR   | 2302 | 6.04 | 9.71  | 0.00 | 90.00  |
| R4RCCAREHR   | 2508 | 4.32 | 7.47  | 0.00 | 168.00 |
| R5RCCAREHR   | 2166 | 6.12 | 10.31 | 0.00 | 72.00  |
| S1RCCAREHR   | 1148 | 2.19 | 5.72  | 0.00 | 80.00  |
| S2RCCAREHR   | 1029 | 2.36 | 5.23  | 0.00 | 48.00  |
| S3RCCAREHR   | 1241 | 3.51 | 7.92  | 0.00 | 90.00  |
| S4RCCAREHR   | 1275 | 2.55 | 4.90  | 0.00 | 55.00  |
| S5RCCAREHR   | 921  | 4.21 | 8.00  | 0.00 | 72.00  |
| R1RCCAREHRM  | 1774 | 0.00 | 0.00  | 0.00 | 0.00   |
| R2RCCAREHRM  | 1674 | 0.00 | 0.02  | 0.00 | 1.00   |
| R3RCCAREHRM  | 2318 | 0.01 | 0.13  | 0.00 | 3.00   |
| R4RCCAREHRM  | 2516 | 0.01 | 0.11  | 0.00 | 4.00   |
| R5RCCAREHRM  | 2211 | 0.04 | 0.24  | 0.00 | 3.00   |
| S1RCCAREHRM  | 1148 | 0.00 | 0.00  | 0.00 | 0.00   |
| S2RCCAREHRM  | 1029 | 0.00 | 0.00  | 0.00 | 0.00   |
| S3RCCAREHRM  | 1251 | 0.01 | 0.13  | 0.00 | 3.00   |
| S4RCCAREHRM  | 1277 | 0.00 | 0.06  | 0.00 | 1.00   |
| S5RCCAREHRM  | 934  | 0.03 | 0.21  | 0.00 | 3.00   |

## Categorical Variable Codes

| Value-----          | R1RCCARE | R2RCCARE | R3RCCARE | R4RCCARE | R5RCCARE |
|---------------------|----------|----------|----------|----------|----------|
| .d:DK               | 1        |          | 1        | 6        | 2        |
| .h:no help received | 812      | 729      | 1771     | 1666     | 1545     |
| .m:Missing          | 40       | 30       |          | 40       | 18       |
| .r:Refuse           | 2        |          | 1        | 1        | 82       |
| .x:no difficulty    | 12557    | 11271    | 11632    | 10550    | 13256    |
| 0.No                | 890      | 750      | 925      | 918      | 752      |
| 1.Yes               | 884      | 924      | 1393     | 1598     | 1459     |
| Value-----          | S1RCCARE | S2RCCARE | S3RCCARE | S4RCCARE | S5RCCARE |
| .d:DK               |          |          | 1        | 5        |          |
| .h:no help received | 501      | 487      | 1213     | 1072     | 716      |
| .m:Missing          | 14       | 8        |          | 10       | 3        |
| .r:Refuse           | 1        |          |          |          | 55       |
| .u:Unmar            | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR            | 333      | 131      | 349      | 280      | 501      |
| .x:no difficulty    | 8984     | 8040     | 8127     | 7288     | 5753     |
| 0.No                | 746      | 611      | 731      | 702      | 427      |
| 1.Yes               | 402      | 418      | 520      | 575      | 507      |

## How Constructed

The following variables indicate whether the respondent's children or grandchildren help the respondent with any ADL or IADL needs. The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. If the respondent reports having difficulty with an ADL or IADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with ADLs and IADLs each. The information used to derive these variables is taken from the help files in Waves 1 and 2 and from the individual files in Waves 3 and forward. For each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the

relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

The following variables are coded as special missing value .x if the respondent reports no difficulty with any ADL or IADL, and are coded as special missing value .h if the respondent reports difficulty with an ADL or IADL but does not receive any help. Don't know, refused, or other missing responses are assigned special missing values .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwRCCARE, RwRCCAREN, RwRCCAREDPM, RwRCCAREDPMM, RwRCCAREHR, and RwRCCAREHRM include help from a child, child-in-law, or grandchild.

RwRCCARE indicates whether any of the respondent's children or grandchildren help the respondent with ADL or IADL needs. RwRCCAREN indicates the number of the respondent's children or grandchildren who help the respondent with ADL or IADL needs. RwRCCARE is coded as 0 if none of the respondent's children or grandchildren help the respondent with ADLs or IADLs; and is coded as 1 if at least one of the respondent's children or grandchildren help the respondent with ADLs or IADLs.

RwRCCAREDPM indicates the number of total days per month the respondent's children or grandchildren help the respondent with ADL or IADL needs. If the respondent reports receiving help every day from that child or grandchild, then a value of 30 is assumed. RwRCCAREDPMM is the sum of days per month for all children or grandchildren helpers, and so values can be over 30 days. RwRCCAREDPM is calculated as long as there is one non-missing value. RwRCCAREDPMM is assigned a value of 0 if the respondent did not receive help from any children or grandchildren. RwRCCAREDPMM indicates the number of children or grandchildren who helped the respondent for whom no value of days was reported and was not accounted for in RwRCCAREDPM. RwRCCAREDPMM is assigned special missing value .m if the respondent was not helped by any children or grandchildren.

RwRCCAREHR indicates the number of hours per day the respondent's children or grandchildren help the respondent with ADL or IADL needs. Respondents are asked, on days their children or grandchildren help, how many hours per day that is. If the respondent reports less than an hour for that child or grandchild, then a 1 is assumed. RwRCCAREHR is the sum of hours per day for all children or grandchildren helpers, and so values can be over 24 hours. RwRCCAREHR is calculated as long as there is one non-missing value. RwRCCAREHR is assigned a value of 0 if the respondent did not receive help from any children or grandchildren. RwRCCAREHRM indicates the number of children or grandchildren who helped the respondent for whom no value of hours was reported and was not accounted for in RwRCCAREHR. RwRCCAREHRM is assigned special missing value .m if the respondent was not helped by any children or grandchildren.

SwRCCARE, SwRCCAREN, SwRCCAREDPM, and SwRCCAREHR indicate whether the respondent's current wave's spouse receives help from children or grandchildren, the number, and the frequency with which, and whether any are paid, and their values are taken from RwRCCARE, RwRCCAREN, RwRCCAREDPM, and RwRCCAREHR. SwRCCAREDPMM and SwRCCAREHRM indicate the number of children who helped the respondent's current spouse for whom a value was not reported for the number of days and hours and are taken from RwRCCAREDPMM and RwRCCAREHRM. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers each in Waves 1 and 2 for ADLs and IADLs, up to 8 caregivers each in Waves 3 and 4 for ADLs and IADLs, and up to 3 caregivers each in Wave 5 for ADLs and IADLs.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, these variables in the Harmonized HRS also include help using the telephone, whereas in the Harmonized MHAS they do not include help using the telephone.

RwRCCAREDPW in the Harmonized HRS indicates the days per week the respondent received help, while RwRCCAREDPM in the Harmonized MHAS indicates the days per month the respondent received help. As such, adjustment must be made before comparison of these variables.

The HRS asks for up to 7 relationships of people who help with ADLs (dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet). The MHAS, in contrast, asks for the relationships of a varying number of people across waves who help with ADLs. The HRS asks for up to 6 relationships of people who help with IADLs (preparing meals, grocery shopping, making phone calls, and taking medications), and up to 2 people who help with managing money. The MHAS, in contrast, asks for the relationships of a varying number of people who help with preparing meals, grocery shopping, taking medications, and managing money together.

## MHAS Variables Used

### Wave 1:

|       |                                       |
|-------|---------------------------------------|
| H14   | help dressing                         |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H19_3 | spouse helps using toilet             |
| H19_4 | other helps using toilet              |
| H26_3 | spouse helps with hot meal            |
| H26_4 | someone helps with hot meal           |
| H27_3 | spouse helps with shopping            |
| H27_4 | someone helps with shopping           |
| H28_3 | spouse helps with taking medication   |
| H28_4 | someone helps with taking medication  |
| H29_3 | spouse helps with managing money      |
| H29_4 | someone helps with managing money     |

### Wave 1 Helper:

|     |                         |
|-----|-------------------------|
| H22 | kinship of helper       |
| H23 | roster number of helper |
| H24 | days of help            |
| H25 | hours of help           |
| H32 | kinship of helper       |
| H33 | roster number of helper |
| H34 | days of help            |
| H35 | hours of help           |

### Wave 2:

|      |                                 |
|------|---------------------------------|
| H14  | someone help you to get dressed |
| H15E | spouse helps                    |
| H15F | additional person helps         |
| H16E | spouse helps                    |
| H16F | additional person helps         |
| H17E | spouse helps                    |
| H17F | additional person helps         |
| H18E | spouse helps                    |
| H18F | additional person helps         |
| H19E | spouse helps                    |
| H19F | additional person helps         |
| H26D | spouse helps                    |
| H26E | additional person helps         |
| H27D | spouse helps                    |
| H27E | additional person helps         |
| H28D | spouse helps                    |
| H28E | additional person helps         |
| H29D | spouse helps                    |
| H29E | additional person helps         |

## Wave 2 Helper:

|     |   |
|-----|---|
| H22 | relationship                            |
| H23 | registration number                     |
| H24 | number of days (name) helped last month |
| H25 | number of hours during those days       |
| H32 | relationship                            |
| H33 | registration number                     |
| H34 | number of days (name) helped last month |
| H35 | how many hours during those days        |

## Wave 3:

|          |   |
|----------|---|
| H14_12   | Someone help you to get dressed                 |
| H15D_12  | Someone help you walk across room               |
| H16D_12  | Someone help you to bathe or shower             |
| H17D_12  | Does someone help you eat your food             |
| H18D_12  | Does someone help you get into or out of bed    |
| H19D_12  | Does someone help you use toilet, get on off    |
| H22_1_12 | Relationship with helper for ADLs               |
| H22_2_12 | Relationship with helper for ADLs               |
| H22_3_12 | Relationship with helper for ADLs               |
| H22_4_12 | Relationship with helper for ADLs               |
| H22_5_12 | Relationship with helper for ADLs               |
| H22_6_12 | Relationship with helper for ADLs               |
| H22_7_12 | Relationship with helper for ADLs               |
| H22_8_12 | Relationship with helper for ADLs               |
| H23_1_12 | Registration number of helper for ADLs          |
| H23_2_12 | Registration number of helper for ADLs          |
| H23_3_12 | Registration number of helper for ADLs          |
| H23_4_12 | Registration number of helper for ADLs          |
| H23_5_12 | Registration number of helper for ADLs          |
| H23_6_12 | Registration number of helper for ADLs          |
| H23_7_12 | Registration number of helper for ADLs          |
| H23_8_12 | Registration number of helper for ADLs          |
| H24_1_12 | Number of days (name) helped last month         |
| H24_2_12 | Number of days (name) helped last month         |
| H24_3_12 | Number of days (name) helped last month         |
| H24_4_12 | Number of days (name) helped last month         |
| H24_5_12 | Number of days (name) helped last month         |
| H24_6_12 | Number of days (name) helped last month         |
| H24_7_12 | Number of days (name) helped last month         |
| H24_8_12 | Number of days (name) helped last month         |
| H25_1_12 | Number of hours during those days (NAME) helped |
| H25_2_12 | Number of hours during those days (NAME) helped |
| H25_3_12 | Number of hours during those days (NAME) helped |
| H25_4_12 | Number of hours during those days (NAME) helped |
| H25_5_12 | Number of hours during those days (NAME) helped |
| H25_6_12 | Number of hours during those days (NAME) helped |
| H25_7_12 | Number of hours during those days (NAME) helped |
| H25_8_12 | Number of hours during those days (NAME) helped |
| H26C_12  | Does anyone help you prepare a hot meal         |
| H27C_12  | Does anyone help you shop for groceries         |
| H28C_12  | Does anyone help you take medications           |
| H29C_12  | Does anyone one help you manage your money      |
| H32_1_12 | Relationship with helper for IADLs              |
| H32_2_12 | Relationship with helper for IADLs              |
| H32_3_12 | Relationship with helper for IADLs              |
| H32_4_12 | Relationship with helper for IADLs              |
| H32_5_12 | Relationship with helper for IADLs              |
| H32_6_12 | Relationship with helper for IADLs              |
| H32_7_12 | Relationship with helper for IADLs              |
| H32_8_12 | Relationship with helper for IADLs              |
| H33_1_12 | Registration number of helper for IADLs         |
| H33_2_12 | Registration number of helper for ADLs          |
| H33_3_12 | Registration number of helper for IADLs         |
| H33_4_12 | Registration number of helper for IADLs         |



|          |   |
|----------|---|
| H33_5_12 | Registration number of helper for IADLs         |
| H33_6_12 | Registration number of helper for IADLs         |
| H33_7_12 | Registration number of helper for IADLs         |
| H33_8_12 | Registration number of helper for IADLs         |
| H34_1_12 | Number of days (name) helped last month         |
| H34_2_12 | Number of days (name) helped last month         |
| H34_3_12 | Number of days (name) helped last month         |
| H34_4_12 | Number of days (name) helped last month         |
| H34_5_12 | Number of days (name) helped last month         |
| H34_6_12 | Number of days (name) helped last month         |
| H34_7_12 | Number of days (name) helped last month         |
| H34_8_12 | Number of days (name) helped last month         |
| H35_1_12 | Number of hours during those days (NAME) helped |
| H35_2_12 | Number of hours during those days (NAME) helped |
| H35_3_12 | Number of hours during those days (NAME) helped |
| H35_4_12 | Number of hours during those days (NAME) helped |
| H35_5_12 | Number of hours during those days (NAME) helped |
| H35_6_12 | Number of hours during those days (NAME) helped |
| H35_7_12 | Number of hours during those days (NAME) helped |
| H35_8_12 | Number of hours during those days (NAME) helped |

## Wave 4:

|          |   |
|----------|---|
| H14_15   | Does someone help respondent to get dressed             |
| H15D_15  | Does someone help respondent walking across a room      |
| H16D_15  | Does someone help respondent bathing or showering       |
| H17D_15  | Does someone help respondent eating                     |
| H18D_15  | Does someone help respondent getting in or out of bed   |
| H19D_15  | Does someone help respondent using the toilet           |
| H22_1_15 | Respondent's relationship with person helping with ADLs |
| H22_2_15 | Respondent's relationship with person helping with ADLs |
| H22_3_15 | Respondent's relationship with person helping with ADLs |
| H22_4_15 | Respondent's relationship with person helping with ADLs |
| H22_5_15 | Respondent's relationship with person helping with ADLs |
| H22_6_15 | Respondent's relationship with person helping with ADLs |
| H22_7_15 | Respondent's relationship with person helping with ADLs |
| H22_8_15 | Respondent's relationship with person helping with ADLs |
| H23_1_15 | Registration number of person helping with ADLs         |
| H23_2_15 | Registration number of person helping with ADLs         |
| H23_3_15 | Registration number of person helping with ADLs         |
| H23_4_15 | Registration number of person helping with ADLs         |
| H23_5_15 | Registration number of person helping with ADLs         |
| H23_6_15 | Registration number of person helping with ADLs         |
| H23_7_15 | Registration number of person helping with ADLs         |
| H23_8_15 | Registration number of person helping with ADLs         |
| H24_1_15 | Number of days the person helped during last month      |
| H24_2_15 | Number of days the person helped during last month      |
| H24_3_15 | Number of days the person helped during last month      |
| H24_4_15 | Number of days the person helped during last month      |
| H24_5_15 | Number of days the person helped during last month      |
| H24_6_15 | Number of days the person helped during last month      |
| H24_7_15 | Number of days the person helped during last month      |
| H24_8_15 | Number of days the person helped during last month      |
| H25_1_15 | Number of hours during those days that the person helps |
| H25_2_15 | Number of hours during those days that the person helps |
| H25_3_15 | Number of hours during those days that the person helps |
| H25_4_15 | Number of hours during those days that the person helps |
| H25_5_15 | Number of hours during those days that the person helps |
| H25_6_15 | Number of hours during those days that the person helps |
| H25_7_15 | Number of hours during those days that the person helps |
| H25_8_15 | Number of hours during those days that the person helps |
| H26C_15  | Does someone help respondent to prepare a hot meal      |
| H27C_15  | Does someone help respondent to shop for groceries      |
| H28C_15  | Does someone help respondent to take medications        |
| H29C_15  | Does someone help respondent to manage his/her money    |
| H32_1_15 | Respondent's relationship with person helping with IADL |

|          |   |
|----------|---|
| H32_2_15 | Respondent's relationship with person helping with IADL |
| H32_3_15 | Respondent's relationship with person helping with IADL |
| H32_4_15 | Respondent's relationship with person helping with IADL |
| H32_5_15 | Respondent's relationship with person helping with IADL |
| H32_6_15 | Respondent's relationship with person helping with IADL |
| H32_7_15 | Respondent's relationship with person helping with IADL |
| H32_8_15 | Respondent's relationship with person helping with IADL |
| H33_1_15 | Registration number of person helping with IADLs        |
| H33_2_15 | Registration number of person helping with IADLs        |
| H33_3_15 | Registration number of person helping with IADLs        |
| H33_4_15 | Registration number of person helping with IADLs        |
| H33_5_15 | Registration number of person helping with IADLs        |
| H33_6_15 | Registration number of person helping with IADLs        |
| H33_7_15 | Registration number of person helping with IADLs        |
| H33_8_15 | Registration number of person helping with IADLs        |
| H34_1_15 | Number of days the person helped during last month      |
| H34_2_15 | Number of days the person helped during last month      |
| H34_3_15 | Number of days the person helped during last month      |
| H34_4_15 | Number of days the person helped during last month      |
| H34_5_15 | Number of days the person helped during last month      |
| H34_6_15 | Number of days the person helped during last month      |
| H34_7_15 | Number of days the person helped during last month      |
| H34_8_15 | Number of days the person helped during last month      |
| H35_1_15 | Number of hours during those days that the person helps |
| H35_2_15 | Number of hours during those days that the person helps |
| H35_3_15 | Number of hours during those days that the person helps |
| H35_4_15 | Number of hours during those days that the person helps |
| H35_5_15 | Number of hours during those days that the person helps |
| H35_6_15 | Number of hours during those days that the person helps |
| H35_7_15 | Number of hours during those days that the person helps |
| H35_8_15 | Number of hours during those days that the person helps |

## Wave 5:

|          |   |
|----------|---|
| H14_18   | Does someone help R to get dressed                      |
| H15D_18  | Does someone help R walking across a room               |
| H16D_18  | Does someone help R bathing or showering                |
| H17D_18  | Does someone help R eating                              |
| H18D_18  | Does someone help R getting in or out of bed            |
| H19D_18  | Does someone help R using the toilet                    |
| H22_1_18 | R's relationship with person helping with ADLs          |
| H22_2_18 | R's relationship with person helping with ADLs          |
| H22_3_18 | R's relationship with person helping with ADLs          |
| H23_1_18 | Registration number of person helping with ADLs         |
| H23_2_18 | Registration number of person helping with ADLs         |
| H23_3_18 | Registration number of person helping with ADLs         |
| H24_1_18 | Number of days the person helped during last month      |
| H24_2_18 | Number of days the person helped during last month      |
| H24_3_18 | Number of days the person helped during last month      |
| H25_1_18 | Number of hours during those days that the person helps |
| H25_2_18 | Number of hours during those days that the person helps |
| H25_3_18 | Number of hours during those days that the person helps |
| H26C_18  | Does someone help R to prepare a hot meal               |
| H27C_18  | Does someone help R to shop for groceries               |
| H28C_18  | Does someone help R to take medications                 |
| H29C_18  | Does someone help R to manage his/her money             |
| H32_1_18 | R's relationship with person helping with IADLs         |
| H32_2_18 | R's relationship with person helping with IADLs         |
| H32_3_18 | R's relationship with person helping with IADLs         |
| H33_1_18 | Registration number of person helping with IADLs        |
| H33_2_18 | Registration number of person helping with IADLs        |
| H33_3_18 | Registration number of person helping with IADLs        |
| H34_1_18 | Number of days the person helped during last month      |
| H34_2_18 | Number of days the person helped during last month      |
| H34_3_18 | Number of days the person helped during last month      |
| H35_1_18 | Number of hours during those days that the person helps |

|          |   |
|----------|---|
| H35_2_18 | Number of hours during those days that the person helps |
| H35_3_18 | Number of hours during those days that the person helps |

|  |
|--|
| <b>Activities of Daily Living and Instrumental Activities of Daily Living: Receives Informal Care from Relatives</b> |
|--|

| Wave | Variable     | Label   | Type  |
|------|--------------|---|-------|
| 1    | R1RRCARE     | r1rrrcare: w1 R receives informal care from relatives for ADL | Categ |
| 2    | R2RRCARE     | r2rrrcare: w2 R receives informal care from relatives for ADL | Categ |
| 3    | R3RRCARE     | r3rrrcare: w3 R receives informal care from relatives for ADL | Categ |
| 4    | R4RRCARE     | r4rrrcare: w4 R receives informal care from relatives for ADL | Categ |
| 5    | R5RRCARE     | r5rrrcare: w5 R receives informal care from relatives for ADL | Categ |
| 1    | S1RRCARE     | s1rrrcare: w1 S receives informal care from relatives for ADL | Categ |
| 2    | S2RRCARE     | s2rrrcare: w2 S receives informal care from relatives for ADL | Categ |
| 3    | S3RRCARE     | s3rrrcare: w3 S receives informal care from relatives for ADL | Categ |
| 4    | S4RRCARE     | s4rrrcare: w4 S receives informal care from relatives for ADL | Categ |
| 5    | S5RRCARE     | s5rrrcare: w5 S receives informal care from relatives for ADL | Categ |
| 1    | R1RRCAREN    | r1rrrcaren: w1 # relatives who help R with ADLs/IADLs         | Cont  |
| 2    | R2RRCAREN    | r2rrrcaren: w2 # relatives who help R with ADLs/IADLs         | Cont  |
| 3    | R3RRCAREN    | r3rrrcaren: w3 # relatives who help R with ADLs/IADLs         | Cont  |
| 4    | R4RRCAREN    | r4rrrcaren: w4 # relatives who help R with ADLs/IADLs         | Cont  |
| 5    | R5RRCAREN    | r5rrrcaren: w5 # relatives who help R with ADLs/IADLs         | Cont  |
| 1    | S1RRCAREN    | s1rrrcaren: w1 # relatives who help S with ADLs/IADLs         | Cont  |
| 2    | S2RRCAREN    | s2rrrcaren: w2 # relatives who help S with ADLs/IADLs         | Cont  |
| 3    | S3RRCAREN    | s3rrrcaren: w3 # relatives who help S with ADLs/IADLs         | Cont  |
| 4    | S4RRCAREN    | s4rrrcaren: w4 # relatives who help S with ADLs/IADLs         | Cont  |
| 5    | S5RRCAREN    | s5rrrcaren: w5 # relatives who help S with ADLs/IADLs         | Cont  |
| 1    | R1RRCAREDPM  | r1rrrcaredpm: w1 days/month relatives help R with ADLs/IADLs  | Cont  |
| 2    | R2RRCAREDPM  | r2rrrcaredpm: w2 days/month relatives help R with ADLs/IADLs  | Cont  |
| 3    | R3RRCAREDPM  | r3rrrcaredpm: w3 days/month relatives help R with ADLs/IADLs  | Cont  |
| 4    | R4RRCAREDPM  | r4rrrcaredpm: w4 days/month relatives help R with ADLs/IADLs  | Cont  |
| 5    | R5RRCAREDPM  | r5rrrcaredpm: w5 days/month relatives help R with ADLs/IADLs  | Cont  |
| 1    | S1RRCAREDPM  | s1rrrcaredpm: w1 days/month relatives help S with ADLs/IADLs  | Cont  |
| 2    | S2RRCAREDPM  | s2rrrcaredpm: w2 days/month relatives help S with ADLs/IADLs  | Cont  |
| 3    | S3RRCAREDPM  | s3rrrcaredpm: w3 days/month relatives help S with ADLs/IADLs  | Cont  |
| 4    | S4RRCAREDPM  | s4rrrcaredpm: w4 days/month relatives help S with ADLs/IADLs  | Cont  |
| 5    | S5RRCAREDPM  | s5rrrcaredpm: w5 days/month relatives help S with ADLs/IADLs  | Cont  |
| 1    | R1RRCAREDPMM | r1rrrcaredpmm: w1 R # relatives missing days of help for ADLs | Cont  |
| 2    | R2RRCAREDPMM | r2rrrcaredpmm: w2 R # relatives missing days of help for ADLs | Cont  |
| 3    | R3RRCAREDPMM | r3rrrcaredpmm: w3 R # relatives missing days of help for ADLs | Cont  |
| 4    | R4RRCAREDPMM | r4rrrcaredpmm: w4 R # relatives missing days of help for ADLs | Cont  |
| 5    | R5RRCAREDPMM | r5rrrcaredpmm: w5 R # relatives missing days of help for ADLs | Cont  |
| 1    | S1RRCAREDPMM | s1rrrcaredpmm: w1 S # relatives missing days of help for ADLs | Cont  |
| 2    | S2RRCAREDPMM | s2rrrcaredpmm: w2 S # relatives missing days of help for ADLs | Cont  |
| 3    | S3RRCAREDPMM | s3rrrcaredpmm: w3 S # relatives missing days of help for ADLs | Cont  |
| 4    | S4RRCAREDPMM | s4rrrcaredpmm: w4 S # relatives missing days of help for ADLs | Cont  |
| 5    | S5RRCAREDPMM | s5rrrcaredpmm: w5 S # relatives missing days of help for ADLs | Cont  |
| 1    | R1RRCAREHR   | r1rrrcarehr: w1 hours/day relatives help R with ADLs/IADLs    | Cont  |
| 2    | R2RRCAREHR   | r2rrrcarehr: w2 hours/day relatives help R with ADLs/IADLs    | Cont  |
| 3    | R3RRCAREHR   | r3rrrcarehr: w3 hours/day relatives help R with ADLs/IADLs    | Cont  |
| 4    | R4RRCAREHR   | r4rrrcarehr: w4 hours/day relatives help R with ADLs/IADLs    | Cont  |
| 5    | R5RRCAREHR   | r5rrrcarehr: w5 hours/day relatives help R with ADLs/IADLs    | Cont  |
| 1    | S1RRCAREHR   | s1rrrcarehr: w1 hours/day relatives help S with ADLs/IADLs    | Cont  |
| 2    | S2RRCAREHR   | s2rrrcarehr: w2 hours/day relatives help S with ADLs/IADLs    | Cont  |
| 3    | S3RRCAREHR   | s3rrrcarehr: w3 hours/day relatives help S with ADLs/IADLs    | Cont  |
| 4    | S4RRCAREHR   | s4rrrcarehr: w4 hours/day relatives help S with ADLs/IADLs    | Cont  |
| 5    | S5RRCAREHR   | s5rrrcarehr: w5 hours/day relatives help S with ADLs/IADLs    | Cont  |

|   |             |                 |     |  |      |
|---|-------------|-----------------|-----|--|------|
| 1 | R1RRCAREHRM | r1rrcarehrm: w1 | R # | relatives missing hours of help for ADLs | Cont |
| 2 | R2RRCAREHRM | r2rrcarehrm: w2 | R # | relatives missing hours of help for ADLs | Cont |
| 3 | R3RRCAREHRM | r3rrcarehrm: w3 | R # | relatives missing hours of help for ADLs | Cont |
| 4 | R4RRCAREHRM | r4rrcarehrm: w4 | R # | relatives missing hours of help for ADLs | Cont |
| 5 | R5RRCAREHRM | r5rrcarehrm: w5 | R # | relatives missing hours of help for ADLs | Cont |
|   |             |                 |     |  |      |
| 1 | S1RRCAREHRM | s1rrcarehrm: w1 | S # | relatives missing hours of help for ADLs | Cont |
| 2 | S2RRCAREHRM | s2rrcarehrm: w2 | S # | relatives missing hours of help for ADLs | Cont |
| 3 | S3RRCAREHRM | s3rrcarehrm: w3 | S # | relatives missing hours of help for ADLs | Cont |
| 4 | S4RRCAREHRM | s4rrcarehrm: w4 | S # | relatives missing hours of help for ADLs | Cont |
| 5 | S5RRCAREHRM | s5rrcarehrm: w5 | S # | relatives missing hours of help for ADLs | Cont |

## Descriptive Statistics

| Variable     | N    | Mean | Std Dev | Minimum | Maximum |
|--------------|------|------|---------|---------|---------|
|              |      |      |         |         |         |
| R1RRCARE     | 1774 | 0.04 | 0.20    | 0.00    | 1.00    |
| R2RRCARE     | 1674 | 0.05 | 0.22    | 0.00    | 1.00    |
| R3RRCARE     | 2318 | 0.05 | 0.21    | 0.00    | 1.00    |
| R4RRCARE     | 2516 | 0.04 | 0.21    | 0.00    | 1.00    |
| R5RRCARE     | 2211 | 0.05 | 0.22    | 0.00    | 1.00    |
|              |      |      |         |         |         |
| S1RRCARE     | 1148 | 0.01 | 0.12    | 0.00    | 1.00    |
| S2RRCARE     | 1029 | 0.01 | 0.10    | 0.00    | 1.00    |
| S3RRCARE     | 1251 | 0.02 | 0.12    | 0.00    | 1.00    |
| S4RRCARE     | 1277 | 0.01 | 0.10    | 0.00    | 1.00    |
| S5RRCARE     | 934  | 0.01 | 0.10    | 0.00    | 1.00    |
|              |      |      |         |         |         |
| R1RRCAREN    | 1774 | 0.05 | 0.27    | 0.00    | 3.00    |
| R2RRCAREN    | 1674 | 0.06 | 0.34    | 0.00    | 8.00    |
| R3RRCAREN    | 2318 | 0.06 | 0.31    | 0.00    | 4.00    |
| R4RRCAREN    | 2516 | 0.06 | 0.32    | 0.00    | 8.00    |
| R5RRCAREN    | 2211 | 0.07 | 0.33    | 0.00    | 3.00    |
|              |      |      |         |         |         |
| S1RRCAREN    | 1148 | 0.02 | 0.16    | 0.00    | 3.00    |
| S2RRCAREN    | 1029 | 0.01 | 0.10    | 0.00    | 1.00    |
| S3RRCAREN    | 1251 | 0.02 | 0.13    | 0.00    | 2.00    |
| S4RRCAREN    | 1277 | 0.01 | 0.11    | 0.00    | 2.00    |
| S5RRCAREN    | 934  | 0.01 | 0.16    | 0.00    | 3.00    |
|              |      |      |         |         |         |
| R1RRCAREDPM  | 1774 | 1.10 | 6.44    | 0.00    | 90.00   |
| R2RRCAREDPM  | 1674 | 1.64 | 9.88    | 0.00    | 240.00  |
| R3RRCAREDPM  | 2317 | 1.27 | 6.97    | 0.00    | 90.00   |
| R4RRCAREDPM  | 2514 | 1.25 | 8.32    | 0.00    | 240.00  |
| R5RRCAREDPM  | 2208 | 1.44 | 8.06    | 0.00    | 90.00   |
|              |      |      |         |         |         |
| S1RRCAREDPM  | 1148 | 0.39 | 3.92    | 0.00    | 75.00   |
| S2RRCAREDPM  | 1029 | 0.21 | 2.36    | 0.00    | 30.00   |
| S3RRCAREDPM  | 1251 | 0.36 | 3.37    | 0.00    | 60.00   |
| S4RRCAREDPM  | 1277 | 0.21 | 2.61    | 0.00    | 60.00   |
| S5RRCAREDPM  | 934  | 0.17 | 3.15    | 0.00    | 90.00   |
|              |      |      |         |         |         |
| R1RRCAREDPMM | 1774 | 0.00 | 0.00    | 0.00    | 0.00    |
| R2RRCAREDPMM | 1674 | 0.00 | 0.00    | 0.00    | 0.00    |
| R3RRCAREDPMM | 2318 | 0.00 | 0.04    | 0.00    | 2.00    |
| R4RRCAREDPMM | 2516 | 0.00 | 0.03    | 0.00    | 1.00    |
| R5RRCAREDPMM | 2211 | 0.00 | 0.06    | 0.00    | 2.00    |
|              |      |      |         |         |         |
| S1RRCAREDPMM | 1148 | 0.00 | 0.00    | 0.00    | 0.00    |
| S2RRCAREDPMM | 1029 | 0.00 | 0.00    | 0.00    | 0.00    |
| S3RRCAREDPMM | 1251 | 0.00 | 0.00    | 0.00    | 0.00    |
| S4RRCAREDPMM | 1277 | 0.00 | 0.00    | 0.00    | 0.00    |
| S5RRCAREDPMM | 934  | 0.00 | 0.00    | 0.00    | 0.00    |

|             |      |      |      |      |       |
|-------------|------|------|------|------|-------|
| R1RRCAREHR  | 1774 | 0.30 | 2.20 | 0.00 | 49.00 |
| R2RRCAREHR  | 1674 | 0.33 | 2.08 | 0.00 | 36.00 |
| R3RRCAREHR  | 2315 | 0.47 | 3.36 | 0.00 | 72.00 |
| R4RRCAREHR  | 2515 | 0.27 | 1.82 | 0.00 | 32.00 |
| R5RRCAREHR  | 2207 | 0.43 | 3.79 | 0.00 | 72.00 |
| S1RRCAREHR  | 1148 | 0.18 | 2.07 | 0.00 | 49.00 |
| S2RRCAREHR  | 1029 | 0.08 | 0.94 | 0.00 | 16.00 |
| S3RRCAREHR  | 1251 | 0.13 | 1.49 | 0.00 | 24.00 |
| S4RRCAREHR  | 1277 | 0.05 | 0.75 | 0.00 | 21.00 |
| S5RRCAREHR  | 934  | 0.13 | 2.57 | 0.00 | 72.00 |
| R1RRCAREHRM | 1774 | 0.00 | 0.00 | 0.00 | 0.00  |
| R2RRCAREHRM | 1674 | 0.00 | 0.00 | 0.00 | 0.00  |
| R3RRCAREHRM | 2318 | 0.00 | 0.04 | 0.00 | 1.00  |
| R4RRCAREHRM | 2516 | 0.00 | 0.02 | 0.00 | 1.00  |
| R5RRCAREHRM | 2211 | 0.00 | 0.07 | 0.00 | 2.00  |
| S1RRCAREHRM | 1148 | 0.00 | 0.00 | 0.00 | 0.00  |
| S2RRCAREHRM | 1029 | 0.00 | 0.00 | 0.00 | 0.00  |
| S3RRCAREHRM | 1251 | 0.00 | 0.00 | 0.00 | 0.00  |
| S4RRCAREHRM | 1277 | 0.00 | 0.00 | 0.00 | 0.00  |
| S5RRCAREHRM | 934  | 0.00 | 0.00 | 0.00 | 0.00  |

## Categorical Variable Codes

| Value-----          | R1RRCARE | R2RRCARE | R3RRCARE | R4RRCARE | R5RRCARE |
|---------------------|----------|----------|----------|----------|----------|
| .d:DK               | 1        |          | 1        | 6        | 2        |
| .h:no help received | 812      | 729      | 1771     | 1666     | 1545     |
| .m:Missing          | 40       | 30       |          | 40       | 18       |
| .r:Refuse           | 2        |          | 1        | 1        | 82       |
| .x:no difficulty    | 12557    | 11271    | 11632    | 10550    | 13256    |
| 0.No                | 1700     | 1591     | 2206     | 2403     | 2096     |
| 1.Yes               | 74       | 83       | 112      | 113      | 115      |

| Value-----          | S1RRCARE | S2RRCARE | S3RRCARE | S4RRCARE | S5RRCARE |
|---------------------|----------|----------|----------|----------|----------|
| .d:DK               |          |          | 1        | 5        |          |
| .h:no help received | 501      | 487      | 1213     | 1072     | 716      |
| .m:Missing          | 14       | 8        |          | 10       | 3        |
| .r:Refuse           | 1        |          |          |          | 55       |
| .u:Unmar            | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR            | 333      | 131      | 349      | 280      | 501      |
| .x:no difficulty    | 8984     | 8040     | 8127     | 7288     | 5753     |
| 0.No                | 1131     | 1019     | 1232     | 1265     | 925      |
| 1.Yes               | 17       | 10       | 19       | 12       | 9        |

## How Constructed

The following variables indicate whether any of the respondent's relatives help the respondent with any ADL or IADL needs. The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. If the respondent reports having difficulty with an ADL or IADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with ADLs and IADLs each. The information used to derive these variables is taken from the help files in Waves 1 and 2 and from the individual files in Waves 3 and forward. For each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to

the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

The following variables are coded as special missing value .x if the respondent reports no difficulty with any ADL or IADL, and are coded as special missing value .h if the respondent reports difficulty with an ADL or IADL but does not receive any help. Don't know, refused, or other missing responses are assigned special missing values .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwRRCARE, RwRRCAREN, RwRRCAREDPM, RwRRCAREDPMM, RwRRCAREHR, and RwRRCAREHRM include help from the respondent's parent or other relative.

RwRRCARE indicates whether any of the respondent's relatives help the respondent with ADL or IADL needs. RwRRCAREN indicates the number of the respondent's relatives who help the respondent with ADL or IADL needs. RwRRCARE is coded as 0 if none of the respondent's relatives help the respondent with ADLs or IADLs; and is coded as 1 if at least one of the respondent's relatives help the respondent with ADLs or IADLs.

RwRRCAREDPM indicates the number of total days per month the respondent's relatives help the respondent with ADL or IADL needs. If the respondent reports receiving help every day from that relative, then a value of 30 is assumed. RwRRCAREDPM is the sum of days per month for all relative helpers, and so values can be over 30 days. RwRRCAREDPM is calculated as long as there is one non-missing value. RwRRCAREDPM is assigned a value of 0 if the respondent did not receive help from any relatives. RwRRCAREDPMM indicates the number of relatives who helped the respondent for whom no value of days was reported and was not accounted for in RwRRCAREDPM. RwRRCAREDPMM is assigned special missing value .m if the respondent was not helped by any relatives.

RwRRCAREHR indicates the number of hours per day the respondent's relatives help the respondent with ADL or IADL needs. Respondents are asked, on days their relatives help, how many hours per day that is. If the respondent reports less than an hour for that relative, then a 1 is assumed. RwRRCAREHR is the sum of hours per day for all relative helpers, and so values can be over 24 hours. RwRRCAREHR is calculated as long as there is one non-missing value. RwRRCAREHR is assigned a value of 0 if the respondent did not receive help from any relatives. RwRRCAREHRM indicates the number of relatives who helped the respondent for whom no value of hours was reported and was not accounted for in RwRRCAREHR. RwRRCAREHRM is assigned special missing value .m if the respondent was not helped by any relatives.

SwRRCARE, SwRRCAREN, SwRRCAREDPM, and SwRRCAREHR indicate whether the respondent's current wave's spouse receives help from relatives, the number, and the frequency with which, and their values are taken from RwRRCARE, RwRRCAREN, RwRRCAREDPM, and RwRRCAREHR. SwRRCAREDPMM and SwRRCAREHRM indicate the number of relatives who helped the respondent's current spouse for whom a value was not reported for the number of days and hours and are taken from RwRRCAREDPMM and RwRRCAREHRM. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers each in Waves 1 and 2 for ADLs and IADLs, up to 8 caregivers each in Waves 3 and 4 for ADLs and IADLs, and up to 3 caregivers each in Wave 5 for ADLs and IADLs.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, these variables in the Harmonized HRS also include help using the telephone, whereas in the Harmonized MHAS they do not include help using the telephone.

RwRRCAREDPW in the Harmonized HRS indicates the days per week the respondent received help, while RwRRCAREDPM in the Harmonized MHAS indicates the days per month the respondent received help. As such, adjustment must be made before comparison of these variables.

The HRS asks for up to 7 relationships of people who help with ADLs (dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet). The MHAS, in contrast, asks for the relationships of a varying number of people across waves who help with ADLs. The HRS asks for up to 6 relationships of people who help with IADLs (preparing meals, grocery shopping, making phone calls, and taking medications), and up to 2 people who help with managing money. The MHAS, in contrast, asks for the relationships of a varying number of people who help with preparing meals, grocery shopping, taking medications, and managing money together.

## MHAS Variables Used

### Wave 1:

|       |                                       |
|-------|---------------------------------------|
| H14   | help dressing                         |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H19_3 | spouse helps using toilet             |
| H19_4 | other helps using toilet              |
| H26_3 | spouse helps with hot meal            |
| H26_4 | someone helps with hot meal           |
| H27_3 | spouse helps with shopping            |
| H27_4 | someone helps with shopping           |
| H28_3 | spouse helps with taking medication   |
| H28_4 | someone helps with taking medication  |
| H29_3 | spouse helps with managing money      |
| H29_4 | someone helps with managing money     |

### Wave 1 Helper:

|     |                         |
|-----|-------------------------|
| H22 | kinship of helper       |
| H23 | roster number of helper |
| H24 | days of help            |
| H25 | hours of help           |
| H32 | kinship of helper       |
| H33 | roster number of helper |
| H34 | days of help            |
| H35 | hours of help           |

### Wave 2:

|      |                                 |
|------|---------------------------------|
| H14  | someone help you to get dressed |
| H15E | spouse helps                    |
| H15F | additional person helps         |
| H16E | spouse helps                    |
| H16F | additional person helps         |
| H17E | spouse helps                    |
| H17F | additional person helps         |
| H18E | spouse helps                    |
| H18F | additional person helps         |
| H19E | spouse helps                    |
| H19F | additional person helps         |
| H26D | spouse helps                    |
| H26E | additional person helps         |
| H27D | spouse helps                    |
| H27E | additional person helps         |
| H28D | spouse helps                    |
| H28E | additional person helps         |
| H29D | spouse helps                    |
| H29E | additional person helps         |

### Wave 2 Helper:

|     |   |
|-----|---|
| H22 | relationship                            |
| H23 | registration number                     |
| H24 | number of days (name) helped last month |



|          |   |
|----------|---|
| H25      | number of hours during those days               |
| H32      | relationship                                    |
| H33      | registration number                             |
| H34      | number of days (name) helped last month         |
| H35      | how many hours during those days                |
| Wave 3:  |   |
| H14_12   | Someone help you to get dressed                 |
| H15D_12  | Someone help you walk across room               |
| H16D_12  | Someone help you to bathe or shower             |
| H17D_12  | Does someone help you eat your food             |
| H18D_12  | Does someone help you get into or out of bed    |
| H19D_12  | Does someone help you use toilet, get on off    |
| H22_1_12 | Relationship with helper for ADLs               |
| H22_2_12 | Relationship with helper for ADLs               |
| H22_3_12 | Relationship with helper for ADLs               |
| H22_4_12 | Relationship with helper for ADLs               |
| H22_5_12 | Relationship with helper for ADLs               |
| H22_6_12 | Relationship with helper for ADLs               |
| H22_7_12 | Relationship with helper for ADLs               |
| H22_8_12 | Relationship with helper for ADLs               |
| H23_1_12 | Registration number of helper for ADLs          |
| H23_2_12 | Registration number of helper for ADLs          |
| H23_3_12 | Registration number of helper for ADLs          |
| H23_4_12 | Registration number of helper for ADLs          |
| H23_5_12 | Registration number of helper for ADLs          |
| H23_6_12 | Registration number of helper for ADLs          |
| H23_7_12 | Registration number of helper for ADLs          |
| H23_8_12 | Registration number of helper for ADLs          |
| H24_1_12 | Number of days (name) helped last month         |
| H24_2_12 | Number of days (name) helped last month         |
| H24_3_12 | Number of days (name) helped last month         |
| H24_4_12 | Number of days (name) helped last month         |
| H24_5_12 | Number of days (name) helped last month         |
| H24_6_12 | Number of days (name) helped last month         |
| H24_7_12 | Number of days (name) helped last month         |
| H24_8_12 | Number of days (name) helped last month         |
| H25_1_12 | Number of hours during those days (NAME) helped |
| H25_2_12 | Number of hours during those days (NAME) helped |
| H25_3_12 | Number of hours during those days (NAME) helped |
| H25_4_12 | Number of hours during those days (NAME) helped |
| H25_5_12 | Number of hours during those days (NAME) helped |
| H25_6_12 | Number of hours during those days (NAME) helped |
| H25_7_12 | Number of hours during those days (NAME) helped |
| H25_8_12 | Number of hours during those days (NAME) helped |
| H26C_12  | Does anyone help you prepare a hot meal         |
| H27C_12  | Does anyone help you shop for groceries         |
| H28C_12  | Does anyone help you take medications           |
| H29C_12  | Does anyone one help you manage your money      |
| H32_1_12 | Relationship with helper for IADLs              |
| H32_2_12 | Relationship with helper for IADLs              |
| H32_3_12 | Relationship with helper for IADLs              |
| H32_4_12 | Relationship with helper for IADLs              |
| H32_5_12 | Relationship with helper for IADLs              |
| H32_6_12 | Relationship with helper for IADLs              |
| H32_7_12 | Relationship with helper for IADLs              |
| H32_8_12 | Relationship with helper for IADLs              |
| H33_1_12 | Registration number of helper for IADLs         |
| H33_2_12 | Registration number of helper for ADLs          |
| H33_3_12 | Registration number of helper for IADLs         |
| H33_4_12 | Registration number of helper for IADLs         |
| H33_5_12 | Registration number of helper for IADLs         |
| H33_6_12 | Registration number of helper for IADLs         |
| H33_7_12 | Registration number of helper for IADLs         |
| H33_8_12 | Registration number of helper for IADLs         |

|          |   |
|----------|---|
| H34_1_12 | Number of days (name) helped last month         |
| H34_2_12 | Number of days (name) helped last month         |
| H34_3_12 | Number of days (name) helped last month         |
| H34_4_12 | Number of days (name) helped last month         |
| H34_5_12 | Number of days (name) helped last month         |
| H34_6_12 | Number of days (name) helped last month         |
| H34_7_12 | Number of days (name) helped last month         |
| H34_8_12 | Number of days (name) helped last month         |
| H35_1_12 | Number of hours during those days (NAME) helped |
| H35_2_12 | Number of hours during those days (NAME) helped |
| H35_3_12 | Number of hours during those days (NAME) helped |
| H35_4_12 | Number of hours during those days (NAME) helped |
| H35_5_12 | Number of hours during those days (NAME) helped |
| H35_6_12 | Number of hours during those days (NAME) helped |
| H35_7_12 | Number of hours during those days (NAME) helped |
| H35_8_12 | Number of hours during those days (NAME) helped |

## Wave 4:

|          |   |
|----------|---|
| H14_15   | Does someone help respondent to get dressed             |
| H15D_15  | Does someone help respondent walking across a room      |
| H16D_15  | Does someone help respondent bathing or showering       |
| H17D_15  | Does someone help respondent eating                     |
| H18D_15  | Does someone help respondent getting in or out of bed   |
| H19D_15  | Does someone help respondent using the toilet           |
| H22_1_15 | Respondent's relationship with person helping with ADLs |
| H22_2_15 | Respondent's relationship with person helping with ADLs |
| H22_3_15 | Respondent's relationship with person helping with ADLs |
| H22_4_15 | Respondent's relationship with person helping with ADLs |
| H22_5_15 | Respondent's relationship with person helping with ADLs |
| H22_6_15 | Respondent's relationship with person helping with ADLs |
| H22_7_15 | Respondent's relationship with person helping with ADLs |
| H22_8_15 | Respondent's relationship with person helping with ADLs |
| H23_1_15 | Registration number of person helping with ADLs         |
| H23_2_15 | Registration number of person helping with ADLs         |
| H23_3_15 | Registration number of person helping with ADLs         |
| H23_4_15 | Registration number of person helping with ADLs         |
| H23_5_15 | Registration number of person helping with ADLs         |
| H23_6_15 | Registration number of person helping with ADLs         |
| H23_7_15 | Registration number of person helping with ADLs         |
| H23_8_15 | Registration number of person helping with ADLs         |
| H24_1_15 | Number of days the person helped during last month      |
| H24_2_15 | Number of days the person helped during last month      |
| H24_3_15 | Number of days the person helped during last month      |
| H24_4_15 | Number of days the person helped during last month      |
| H24_5_15 | Number of days the person helped during last month      |
| H24_6_15 | Number of days the person helped during last month      |
| H24_7_15 | Number of days the person helped during last month      |
| H24_8_15 | Number of days the person helped during last month      |
| H25_1_15 | Number of hours during those days that the person helps |
| H25_2_15 | Number of hours during those days that the person helps |
| H25_3_15 | Number of hours during those days that the person helps |
| H25_4_15 | Number of hours during those days that the person helps |
| H25_5_15 | Number of hours during those days that the person helps |
| H25_6_15 | Number of hours during those days that the person helps |
| H25_7_15 | Number of hours during those days that the person helps |
| H25_8_15 | Number of hours during those days that the person helps |
| H26C_15  | Does someone help respondent to prepare a hot meal      |
| H27C_15  | Does someone help respondent to shop for groceries      |
| H28C_15  | Does someone help respondent to take medications        |
| H29C_15  | Does someone help respondent to manage his/her money    |
| H32_1_15 | Respondent's relationship with person helping with IADL |
| H32_2_15 | Respondent's relationship with person helping with IADL |
| H32_3_15 | Respondent's relationship with person helping with IADL |
| H32_4_15 | Respondent's relationship with person helping with IADL |
| H32_5_15 | Respondent's relationship with person helping with IADL |

|          |  |
|----------|--|
| H32_6_15 | Respondent's relationship with person helping with IADL  |
| H32_7_15 | Respondent's relationship with person helping with IADL  |
| H32_8_15 | Respondent's relationship with person helping with IADL  |
| H33_1_15 | Registration number of person helping with IADLs         |
| H33_2_15 | Registration number of person helping with IADLs         |
| H33_3_15 | Registration number of person helping with IADLs         |
| H33_4_15 | Registration number of person helping with IADLs         |
| H33_5_15 | Registration number of person helping with IADLs         |
| H33_6_15 | Registration number of person helping with IADLs         |
| H33_7_15 | Registration number of person helping with IADLs         |
| H33_8_15 | Registration number of person helping with IADLs         |
| H34_1_15 | Number of days the person helped during last month       |
| H34_2_15 | Number of days the person helped during last month       |
| H34_3_15 | Number of days the person helped during last month       |
| H34_4_15 | Number of days the person helped during last month       |
| H34_5_15 | Number of days the person helped during last month       |
| H34_6_15 | Number of days the person helped during last month       |
| H34_7_15 | Number of days the person helped during last month       |
| H34_8_15 | Number of days the person helped during last month       |
| H35_1_15 | Number of hours during those days that the person helped |
| H35_2_15 | Number of hours during those days that the person helped |
| H35_3_15 | Number of hours during those days that the person helped |
| H35_4_15 | Number of hours during those days that the person helped |
| H35_5_15 | Number of hours during those days that the person helped |
| H35_6_15 | Number of hours during those days that the person helped |
| H35_7_15 | Number of hours during those days that the person helped |
| H35_8_15 | Number of hours during those days that the person helped |

## Wave 5:

|          |  |
|----------|--|
| H14_18   | Does someone help R to get dressed                       |
| H15D_18  | Does someone help R walking across a room                |
| H16D_18  | Does someone help R bathing or showering                 |
| H17D_18  | Does someone help R eating                               |
| H18D_18  | Does someone help R getting in or out of bed             |
| H19D_18  | Does someone help R using the toilet                     |
| H22_1_18 | R's relationship with person helping with ADLs           |
| H22_2_18 | R's relationship with person helping with ADLs           |
| H22_3_18 | R's relationship with person helping with ADLs           |
| H23_1_18 | Registration number of person helping with ADLs          |
| H23_2_18 | Registration number of person helping with ADLs          |
| H23_3_18 | Registration number of person helping with ADLs          |
| H24_1_18 | Number of days the person helped during last month       |
| H24_2_18 | Number of days the person helped during last month       |
| H24_3_18 | Number of days the person helped during last month       |
| H25_1_18 | Number of hours during those days that the person helped |
| H25_2_18 | Number of hours during those days that the person helped |
| H25_3_18 | Number of hours during those days that the person helped |
| H26C_18  | Does someone help R to prepare a hot meal                |
| H27C_18  | Does someone help R to shop for groceries                |
| H28C_18  | Does someone help R to take medications                  |
| H29C_18  | Does someone help R to manage his/her money              |
| H32_1_18 | R's relationship with person helping with IADLs          |
| H32_2_18 | R's relationship with person helping with IADLs          |
| H32_3_18 | R's relationship with person helping with IADLs          |
| H33_1_18 | Registration number of person helping with IADLs         |
| H33_2_18 | Registration number of person helping with IADLs         |
| H33_3_18 | Registration number of person helping with IADLs         |
| H34_1_18 | Number of days the person helped during last month       |
| H34_2_18 | Number of days the person helped during last month       |
| H34_3_18 | Number of days the person helped during last month       |
| H35_1_18 | Number of hours during those days that the person helped |
| H35_2_18 | Number of hours during those days that the person helped |
| H35_3_18 | Number of hours during those days that the person helped |

### Activities of Daily Living and Instrumental Activities of Daily Living: Receives Informal Care from Other Individuals

| Wave | Variable     | Label  | Type  |
|------|--------------|--|-------|
| 1    | R1RFCARE     | r1rfcare: w1 R receives informal care from non-relatives for | Categ |
| 2    | R2RFCARE     | r2rfcare: w2 R receives informal care from non-relatives for | Categ |
| 3    | R3RFCARE     | r3rfcare: w3 R receives informal care from non-relatives for | Categ |
| 4    | R4RFCARE     | r4rfcare: w4 R receives informal care from non-relatives for | Categ |
| 5    | R5RFCARE     | r5rfcare: w5 R receives informal care from non-relatives for | Categ |
| 1    | S1RFCARE     | s1rfcare: w1 S receives informal care from non-relatives for | Categ |
| 2    | S2RFCARE     | s2rfcare: w2 S receives informal care from non-relatives for | Categ |
| 3    | S3RFCARE     | s3rfcare: w3 S receives informal care from non-relatives for | Categ |
| 4    | S4RFCARE     | s4rfcare: w4 S receives informal care from non-relatives for | Categ |
| 5    | S5RFCARE     | s5rfcare: w5 S receives informal care from non-relatives for | Categ |
| 1    | R1RFCAREN    | r1rfcaren: w1 # non-relatives who help R with ADLs/IADLs     | Cont  |
| 2    | R2RFCAREN    | r2rfcaren: w2 # non-relatives who help R with ADLs/IADLs     | Cont  |
| 3    | R3RFCAREN    | r3rfcaren: w3 # non-relatives who help R with ADLs/IADLs     | Cont  |
| 4    | R4RFCAREN    | r4rfcaren: w4 # non-relatives who help R with ADLs/IADLs     | Cont  |
| 5    | R5RFCAREN    | r5rfcaren: w5 # non-relatives who help R with ADLs/IADLs     | Cont  |
| 1    | S1RFCAREN    | s1rfcaren: w1 # non-relatives who help S with ADLs/IADLs     | Cont  |
| 2    | S2RFCAREN    | s2rfcaren: w2 # non-relatives who help S with ADLs/IADLs     | Cont  |
| 3    | S3RFCAREN    | s3rfcaren: w3 # non-relatives who help S with ADLs/IADLs     | Cont  |
| 4    | S4RFCAREN    | s4rfcaren: w4 # non-relatives who help S with ADLs/IADLs     | Cont  |
| 5    | S5RFCAREN    | s5rfcaren: w5 # non-relatives who help S with ADLs/IADLs     | Cont  |
| 1    | R1RFCAREDPM  | r1rfcaredpm: w1 days/month non-relatives help R with ADLs/IA | Cont  |
| 2    | R2RFCAREDPM  | r2rfcaredpm: w2 days/month non-relatives help R with ADLs/IA | Cont  |
| 3    | R3RFCAREDPM  | r3rfcaredpm: w3 days/month non-relatives help R with ADLs/IA | Cont  |
| 4    | R4RFCAREDPM  | r4rfcaredpm: w4 days/month non-relatives help R with ADLs/IA | Cont  |
| 5    | R5RFCAREDPM  | r5rfcaredpm: w5 days/month non-relatives help R with ADLs/IA | Cont  |
| 1    | S1RFCAREDPM  | s1rfcaredpm: w1 days/month non-relatives help S with ADLs/IA | Cont  |
| 2    | S2RFCAREDPM  | s2rfcaredpm: w2 days/month non-relatives help S with ADLs/IA | Cont  |
| 3    | S3RFCAREDPM  | s3rfcaredpm: w3 days/month non-relatives help S with ADLs/IA | Cont  |
| 4    | S4RFCAREDPM  | s4rfcaredpm: w4 days/month non-relatives help S with ADLs/IA | Cont  |
| 5    | S5RFCAREDPM  | s5rfcaredpm: w5 days/month non-relatives help S with ADLs/IA | Cont  |
| 1    | R1RFCAREDPMM | r1rfcaredpmm: w1 R # non-relatives missing days of help for  | Cont  |
| 2    | R2RFCAREDPMM | r2rfcaredpmm: w2 R # non-relatives missing days of help for  | Cont  |
| 3    | R3RFCAREDPMM | r3rfcaredpmm: w3 R # non-relatives missing days of help for  | Cont  |
| 4    | R4RFCAREDPMM | r4rfcaredpmm: w4 R # non-relatives missing days of help for  | Cont  |
| 5    | R5RFCAREDPMM | r5rfcaredpmm: w5 R # non-relatives missing days of help for  | Cont  |
| 1    | S1RFCAREDPMM | s1rfcaredpmm: w1 S # non-relatives missing days of help for  | Cont  |
| 2    | S2RFCAREDPMM | s2rfcaredpmm: w2 S # non-relatives missing days of help for  | Cont  |
| 3    | S3RFCAREDPMM | s3rfcaredpmm: w3 S # non-relatives missing days of help for  | Cont  |
| 4    | S4RFCAREDPMM | s4rfcaredpmm: w4 S # non-relatives missing days of help for  | Cont  |
| 5    | S5RFCAREDPMM | s5rfcaredpmm: w5 S # non-relatives missing days of help for  | Cont  |
| 1    | R1RFCAREHR   | r1rfcarehr: w1 hours/day non-relatives help R with ADLs/IADL | Cont  |
| 2    | R2RFCAREHR   | r2rfcarehr: w2 hours/day non-relatives help R with ADLs/IADL | Cont  |
| 3    | R3RFCAREHR   | r3rfcarehr: w3 hours/day non-relatives help R with ADLs/IADL | Cont  |
| 4    | R4RFCAREHR   | r4rfcarehr: w4 hours/day non-relatives help R with ADLs/IADL | Cont  |
| 5    | R5RFCAREHR   | r5rfcarehr: w5 hours/day non-relatives help R with ADLs/IADL | Cont  |
| 1    | S1RFCAREHR   | s1rfcarehr: w1 hours/day non-relatives help S with ADLs/IADL | Cont  |
| 2    | S2RFCAREHR   | s2rfcarehr: w2 hours/day non-relatives help S with ADLs/IADL | Cont  |
| 3    | S3RFCAREHR   | s3rfcarehr: w3 hours/day non-relatives help S with ADLs/IADL | Cont  |

|   |             |  |      |
|---|-------------|--|------|
| 4 | S4RFCAREHR  | s4rfcarehr: w4 hours/day non-relatives help S with ADLs/IADL | Cont |
| 5 | S5RFCAREHR  | s5rfcarehr: w5 hours/day non-relatives help S with ADLs/IADL | Cont |
| 1 | R1RFCAREHRM | r1rfcarehrm: w1 R # non-relatives missing hours of help for  | Cont |
| 2 | R2RFCAREHRM | r2rfcarehrm: w2 R # non-relatives missing hours of help for  | Cont |
| 3 | R3RFCAREHRM | r3rfcarehrm: w3 R # non-relatives missing hours of help for  | Cont |
| 4 | R4RFCAREHRM | r4rfcarehrm: w4 R # non-relatives missing hours of help for  | Cont |
| 5 | R5RFCAREHRM | r5rfcarehrm: w5 R # non-relatives missing hours of help for  | Cont |
| 1 | S1RFCAREHRM | s1rfcarehrm: w1 S # non-relatives missing hours of help for  | Cont |
| 2 | S2RFCAREHRM | s2rfcarehrm: w2 S # non-relatives missing hours of help for  | Cont |
| 3 | S3RFCAREHRM | s3rfcarehrm: w3 S # non-relatives missing hours of help for  | Cont |
| 4 | S4RFCAREHRM | s4rfcarehrm: w4 S # non-relatives missing hours of help for  | Cont |
| 5 | S5RFCAREHRM | s5rfcarehrm: w5 S # non-relatives missing hours of help for  | Cont |

## Descriptive Statistics

| Variable     | N    | Mean | Std Dev | Minimum | Maximum |
|--------------|------|------|---------|---------|---------|
| R1RFCARE     | 1774 | 0.03 | 0.17    | 0.00    | 1.00    |
| R2RFCARE     | 1674 | 0.03 | 0.18    | 0.00    | 1.00    |
| R3RFCARE     | 2318 | 0.04 | 0.19    | 0.00    | 1.00    |
| R4RFCARE     | 2516 | 0.03 | 0.17    | 0.00    | 1.00    |
| R5RFCARE     | 2211 | 0.07 | 0.25    | 0.00    | 1.00    |
| S1RFCARE     | 1148 | 0.01 | 0.10    | 0.00    | 1.00    |
| S2RFCARE     | 1029 | 0.02 | 0.13    | 0.00    | 1.00    |
| S3RFCARE     | 1251 | 0.01 | 0.12    | 0.00    | 1.00    |
| S4RFCARE     | 1277 | 0.01 | 0.10    | 0.00    | 1.00    |
| S5RFCARE     | 934  | 0.06 | 0.24    | 0.00    | 1.00    |
| R1RFCAREN    | 1774 | 0.04 | 0.26    | 0.00    | 6.00    |
| R2RFCAREN    | 1674 | 0.03 | 0.19    | 0.00    | 2.00    |
| R3RFCAREN    | 2318 | 0.04 | 0.21    | 0.00    | 4.00    |
| R4RFCAREN    | 2516 | 0.03 | 0.18    | 0.00    | 3.00    |
| R5RFCAREN    | 2211 | 0.07 | 0.30    | 0.00    | 3.00    |
| S1RFCAREN    | 1148 | 0.01 | 0.11    | 0.00    | 2.00    |
| S2RFCAREN    | 1029 | 0.02 | 0.13    | 0.00    | 1.00    |
| S3RFCAREN    | 1251 | 0.01 | 0.12    | 0.00    | 1.00    |
| S4RFCAREN    | 1277 | 0.01 | 0.10    | 0.00    | 1.00    |
| S5RFCAREN    | 934  | 0.06 | 0.25    | 0.00    | 3.00    |
| R1RFCAREDPM  | 1774 | 0.76 | 5.61    | 0.00    | 120.00  |
| R2RFCAREDPM  | 1674 | 0.73 | 4.67    | 0.00    | 60.00   |
| R3RFCAREDPM  | 2317 | 0.74 | 4.49    | 0.00    | 42.00   |
| R4RFCAREDPM  | 2515 | 0.49 | 3.59    | 0.00    | 46.00   |
| R5RFCAREDPM  | 2197 | 1.46 | 6.78    | 0.00    | 90.00   |
| S1RFCAREDPM  | 1148 | 0.15 | 2.09    | 0.00    | 46.00   |
| S2RFCAREDPM  | 1029 | 0.42 | 3.42    | 0.00    | 30.00   |
| S3RFCAREDPM  | 1251 | 0.22 | 2.32    | 0.00    | 30.00   |
| S4RFCAREDPM  | 1277 | 0.17 | 2.10    | 0.00    | 30.00   |
| S5RFCAREDPM  | 929  | 1.33 | 6.00    | 0.00    | 30.00   |
| R1RFCAREDPMM | 1774 | 0.00 | 0.00    | 0.00    | 0.00    |
| R2RFCAREDPMM | 1674 | 0.00 | 0.00    | 0.00    | 0.00    |
| R3RFCAREDPMM | 2318 | 0.00 | 0.02    | 0.00    | 1.00    |
| R4RFCAREDPMM | 2516 | 0.00 | 0.02    | 0.00    | 1.00    |
| R5RFCAREDPMM | 2211 | 0.01 | 0.11    | 0.00    | 2.00    |
| S1RFCAREDPMM | 1148 | 0.00 | 0.00    | 0.00    | 0.00    |
| S2RFCAREDPMM | 1029 | 0.00 | 0.00    | 0.00    | 0.00    |
| S3RFCAREDPMM | 1251 | 0.00 | 0.00    | 0.00    | 0.00    |

|              |      |      |      |      |       |
|--------------|------|------|------|------|-------|
| S4RFCAREDPMM | 1277 | 0.00 | 0.00 | 0.00 | 0.00  |
| S5RFCAREDPMM | 934  | 0.01 | 0.09 | 0.00 | 1.00  |
| R1RFCAREHR   | 1774 | 0.12 | 1.14 | 0.00 | 24.00 |
| R2RFCAREHR   | 1674 | 0.12 | 0.92 | 0.00 | 14.00 |
| R3RFCAREHR   | 2317 | 0.23 | 1.84 | 0.00 | 24.00 |
| R4RFCAREHR   | 2515 | 0.15 | 1.26 | 0.00 | 24.00 |
| R5RFCAREHR   | 2199 | 0.34 | 2.10 | 0.00 | 36.00 |
| S1RFCAREHR   | 1148 | 0.02 | 0.36 | 0.00 | 10.00 |
| S2RFCAREHR   | 1029 | 0.08 | 0.83 | 0.00 | 12.00 |
| S3RFCAREHR   | 1250 | 0.13 | 1.57 | 0.00 | 24.00 |
| S4RFCAREHR   | 1277 | 0.05 | 0.60 | 0.00 | 12.00 |
| S5RFCAREHR   | 929  | 0.32 | 1.88 | 0.00 | 24.00 |
| R1RFCAREHRM  | 1774 | 0.00 | 0.00 | 0.00 | 0.00  |
| R2RFCAREHRM  | 1674 | 0.00 | 0.00 | 0.00 | 0.00  |
| R3RFCAREHRM  | 2318 | 0.00 | 0.02 | 0.00 | 1.00  |
| R4RFCAREHRM  | 2516 | 0.00 | 0.02 | 0.00 | 1.00  |
| R5RFCAREHRM  | 2211 | 0.01 | 0.11 | 0.00 | 2.00  |
| S1RFCAREHRM  | 1148 | 0.00 | 0.00 | 0.00 | 0.00  |
| S2RFCAREHRM  | 1029 | 0.00 | 0.00 | 0.00 | 0.00  |
| S3RFCAREHRM  | 1251 | 0.00 | 0.03 | 0.00 | 1.00  |
| S4RFCAREHRM  | 1277 | 0.00 | 0.00 | 0.00 | 0.00  |
| S5RFCAREHRM  | 934  | 0.01 | 0.09 | 0.00 | 1.00  |

## Categorical Variable Codes

| Value-----          | R1RFCARE | R2RFCARE | R3RFCARE | R4RFCARE | R5RFCARE |
|---------------------|----------|----------|----------|----------|----------|
| .d:DK               | 1        |          | 1        | 6        | 2        |
| .h:no help received | 812      | 729      | 1771     | 1666     | 1545     |
| .m:Missing          | 40       | 30       |          | 40       | 18       |
| .r:Refuse           | 2        |          | 1        | 1        | 82       |
| .x:no difficulty    | 12557    | 11271    | 11632    | 10550    | 13256    |
| 0.No                | 1723     | 1621     | 2231     | 2443     | 2067     |
| 1.Yes               | 51       | 53       | 87       | 73       | 144      |
| Value-----          | S1RFCARE | S2RFCARE | S3RFCARE | S4RFCARE | S5RFCARE |
| .d:DK               |          |          | 1        | 5        |          |
| .h:no help received | 501      | 487      | 1213     | 1072     | 716      |
| .m:Missing          | 14       | 8        |          | 10       | 3        |
| .r:Refuse           | 1        |          |          |          | 55       |
| .u:Unmar            | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR            | 333      | 131      | 349      | 280      | 501      |
| .x:no difficulty    | 8984     | 8040     | 8127     | 7288     | 5753     |
| 0.No                | 1137     | 1010     | 1233     | 1264     | 878      |
| 1.Yes               | 11       | 19       | 18       | 13       | 56       |

## How Constructed

The following variables indicate whether any non-relative helps the respondent with any ADL or IADL needs. The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. If the respondent reports having difficulty with an ADL or IADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with ADLs and IADLs each. The information used to derive these variables is taken from the help files in Waves 1 and 2 and from the individual files in Waves 3 and forward. For each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship

type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

The following variables are coded as special missing value .x if the respondent reports no difficulty with any ADL or IADL, and are coded as special missing value .h if the respondent reports difficulty with an ADL or IADL but does not receive any help. Don't know, refused, or other missing responses are assigned special missing values .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwRFCARE, RwRFCAREN, RwRFCAREDP, RwRFCAREDPMM, RwRFCAREHR, and RwRFCAREHRM include help from another person (not their spouse, child, child-in-law, grandchild, parent, other relative, or paid person).

RwRFCARE indicates whether any of the respondent's non-relatives help the respondent with ADL or IADL needs. RwRFCAREN indicates the number of the respondent's non-relatives who help the respondent with ADL or IADL needs. RwRRCARE is coded as 0 if none of the respondent's non-relatives help the respondent with ADLs or IADLs; and is coded as 1 if at least one of the respondent's non-relatives help the respondent with ADLs or IADLs.

RwRFCAREDP indicates the number of total days per month the respondent's non-relatives help the respondent with ADL or IADL needs. If the respondent reports receiving help every day from that non-relative, then a value of 30 is assumed. RwRFCAREDP is the sum of days per month for all non-relative helpers, and so values can be over 30 days. RwRFCAREDP is calculated as long as there is one non-missing value. RwRFCAREDP is assigned a value of 0 if the respondent did not receive help from any non-relatives. RwRFCAREDPMM indicates the number of non-relatives who helped the respondent for whom no value of days was reported and was not accounted for in RwRFCAREDP. RwRFCAREDPMM is assigned special missing value .m if the respondent was not helped by any non-relatives.

RwRFCAREHR indicates the number of hours per day the respondent's non-relatives help the respondent with ADL or IADL needs. Respondents are asked, on days their non-relatives help, how many hours per day that is. If the respondent reports less than an hour for that non-relative, then a 1 is assumed. RwRFCAREHR is the sum of hours per day for all non-relative helpers, and so values can be over 24 hours. RwRFCAREHR is calculated as long as there is one non-missing value. RwRFCAREHR is assigned a value of 0 if the respondent did not receive help from any non-relatives. RwRFCAREHRM indicates the number of non-relatives who helped the respondent for whom no value of hours was reported and was not accounted for in RwRFCAREHR. RwRFCAREHRM is assigned special missing value .m if the respondent was not helped by any non-relatives.

SwRFCARE, SwRFCAREN, SwRFCAREDP, and SwRFCAREHR indicate whether the respondent's current wave's spouse receives help from non-relatives, the number, and the frequency with which, and their values are taken from RwRFCARE, RwRFCAREN, RwRFCAREDP, and RwRFCAREHR. SwRFCAREDPMM and SwRFCAREHRM indicate the number of non-relatives who helped the respondent's current spouse for whom a value was not reported for the number of days and hours and are taken from RwRFCAREDPMM and RwRFCAREHRM. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers each in Waves 1 and 2 for ADLs and IADLs, up to 8 caregivers each in Waves 3 and 4 for ADLs and IADLs, and up to 3 caregivers each in Wave 5 for ADLs and IADLs.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, these variables in the Harmonized HRS also include help using the telephone, whereas in the Harmonized MHAS they do not include help using the telephone.

RwRFCAREDPW in the Harmonized HRS indicates the days per week the respondent received help, while RwRFCAREDPM in the Harmonized MHAS indicates the days per month the respondent received help. As such, adjustment must be made before comparison of these variables.

The HRS asks for up to 7 relationships of people who help with ADLs (dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet). The MHAS, in contrast, asks for the relationships of a varying number of people across waves who help with ADLs. The HRS asks for up to 6 relationships of people who help with IADLs (preparing meals, grocery shopping, making phone calls, and taking medications), and up to 2 people who help with managing money. The MHAS, in contrast, asks for the relationships of a varying number of people who help with preparing meals, grocery shopping, taking medications, and managing money together.

## MHAS Variables Used

### Wave 1:

|       |                                       |
|-------|---------------------------------------|
| H14   | help dressing                         |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H19_3 | spouse helps using toilet             |
| H19_4 | other helps using toilet              |
| H26_3 | spouse helps with hot meal            |
| H26_4 | someone helps with hot meal           |
| H27_3 | spouse helps with shopping            |
| H27_4 | someone helps with shopping           |
| H28_3 | spouse helps with taking medication   |
| H28_4 | someone helps with taking medication  |
| H29_3 | spouse helps with managing money      |
| H29_4 | someone helps with managing money     |

### Wave 1 Helper:

|     |                         |
|-----|-------------------------|
| H22 | kinship of helper       |
| H23 | roster number of helper |
| H24 | days of help            |
| H25 | hours of help           |
| H32 | kinship of helper       |
| H33 | roster number of helper |
| H34 | days of help            |
| H35 | hours of help           |

### Wave 2:

|      |                                 |
|------|---------------------------------|
| H14  | someone help you to get dressed |
| H15E | spouse helps                    |
| H15F | additional person helps         |
| H16E | spouse helps                    |
| H16F | additional person helps         |
| H17E | spouse helps                    |
| H17F | additional person helps         |
| H18E | spouse helps                    |
| H18F | additional person helps         |
| H19E | spouse helps                    |
| H19F | additional person helps         |
| H26D | spouse helps                    |
| H26E | additional person helps         |
| H27D | spouse helps                    |
| H27E | additional person helps         |
| H28D | spouse helps                    |
| H28E | additional person helps         |
| H29D | spouse helps                    |
| H29E | additional person helps         |

### Wave 2 Helper:



|     |   |
|-----|---|
| H22 | relationship                            |
| H23 | registration number                     |
| H24 | number of days (name) helped last month |
| H25 | number of hours during those days       |
| H32 | relationship                            |
| H33 | registration number                     |
| H34 | number of days (name) helped last month |
| H35 | how many hours during those days        |

## Wave 3:

|          |   |
|----------|---|
| H14_12   | Someone help you to get dressed                 |
| H15D_12  | Someone help you walk across room               |
| H16D_12  | Someone help you to bathe or shower             |
| H17D_12  | Does someone help you eat your food             |
| H18D_12  | Does someone help you get into or out of bed    |
| H19D_12  | Does someone help you use toilet, get on off    |
| H22_1_12 | Relationship with helper for ADLs               |
| H22_2_12 | Relationship with helper for ADLs               |
| H22_3_12 | Relationship with helper for ADLs               |
| H22_4_12 | Relationship with helper for ADLs               |
| H22_5_12 | Relationship with helper for ADLs               |
| H22_6_12 | Relationship with helper for ADLs               |
| H22_7_12 | Relationship with helper for ADLs               |
| H22_8_12 | Relationship with helper for ADLs               |
| H23_1_12 | Registration number of helper for ADLs          |
| H23_2_12 | Registration number of helper for ADLs          |
| H23_3_12 | Registration number of helper for ADLs          |
| H23_4_12 | Registration number of helper for ADLs          |
| H23_5_12 | Registration number of helper for ADLs          |
| H23_6_12 | Registration number of helper for ADLs          |
| H23_7_12 | Registration number of helper for ADLs          |
| H23_8_12 | Registration number of helper for ADLs          |
| H24_1_12 | Number of days (name) helped last month         |
| H24_2_12 | Number of days (name) helped last month         |
| H24_3_12 | Number of days (name) helped last month         |
| H24_4_12 | Number of days (name) helped last month         |
| H24_5_12 | Number of days (name) helped last month         |
| H24_6_12 | Number of days (name) helped last month         |
| H24_7_12 | Number of days (name) helped last month         |
| H24_8_12 | Number of days (name) helped last month         |
| H25_1_12 | Number of hours during those days (NAME) helped |
| H25_2_12 | Number of hours during those days (NAME) helped |
| H25_3_12 | Number of hours during those days (NAME) helped |
| H25_4_12 | Number of hours during those days (NAME) helped |
| H25_5_12 | Number of hours during those days (NAME) helped |
| H25_6_12 | Number of hours during those days (NAME) helped |
| H25_7_12 | Number of hours during those days (NAME) helped |
| H25_8_12 | Number of hours during those days (NAME) helped |
| H26C_12  | Does anyone help you prepare a hot meal         |
| H27C_12  | Does anyone help you shop for groceries         |
| H28C_12  | Does anyone help you take medications           |
| H29C_12  | Does anyone one help you manage your money      |
| H32_1_12 | Relationship with helper for IADLs              |
| H32_2_12 | Relationship with helper for IADLs              |
| H32_3_12 | Relationship with helper for IADLs              |
| H32_4_12 | Relationship with helper for IADLs              |
| H32_5_12 | Relationship with helper for IADLs              |
| H32_6_12 | Relationship with helper for IADLs              |
| H32_7_12 | Relationship with helper for IADLs              |
| H32_8_12 | Relationship with helper for IADLs              |
| H33_1_12 | Registration number of helper for IADLs         |
| H33_2_12 | Registration number of helper for ADLs          |
| H33_3_12 | Registration number of helper for IADLs         |
| H33_4_12 | Registration number of helper for IADLs         |
| H33_5_12 | Registration number of helper for IADLs         |

|          |   |
|----------|---|
| H33_6_12 | Registration number of helper for IADLs                 |
| H33_7_12 | Registration number of helper for IADLs                 |
| H33_8_12 | Registration number of helper for IADLs                 |
| H34_1_12 | Number of days (name) helped last month                 |
| H34_2_12 | Number of days (name) helped last month                 |
| H34_3_12 | Number of days (name) helped last month                 |
| H34_4_12 | Number of days (name) helped last month                 |
| H34_5_12 | Number of days (name) helped last month                 |
| H34_6_12 | Number of days (name) helped last month                 |
| H34_7_12 | Number of days (name) helped last month                 |
| H34_8_12 | Number of days (name) helped last month                 |
| H35_1_12 | Number of hours during those days (NAME) helped         |
| H35_2_12 | Number of hours during those days (NAME) helped         |
| H35_3_12 | Number of hours during those days (NAME) helped         |
| H35_4_12 | Number of hours during those days (NAME) helped         |
| H35_5_12 | Number of hours during those days (NAME) helped         |
| H35_6_12 | Number of hours during those days (NAME) helped         |
| H35_7_12 | Number of hours during those days (NAME) helped         |
| H35_8_12 | Number of hours during those days (NAME) helped         |
| Wave 4:  |   |
| H14_15   | Does someone help respondent to get dressed             |
| H15D_15  | Does someone help respondent walking across a room      |
| H16D_15  | Does someone help respondent bathing or showering       |
| H17D_15  | Does someone help respondent eating                     |
| H18D_15  | Does someone help respondent getting in or out of bed   |
| H19D_15  | Does someone help respondent using the toilet           |
| H22_1_15 | Respondent's relationship with person helping with ADLs |
| H22_2_15 | Respondent's relationship with person helping with ADLs |
| H22_3_15 | Respondent's relationship with person helping with ADLs |
| H22_4_15 | Respondent's relationship with person helping with ADLs |
| H22_5_15 | Respondent's relationship with person helping with ADLs |
| H22_6_15 | Respondent's relationship with person helping with ADLs |
| H22_7_15 | Respondent's relationship with person helping with ADLs |
| H22_8_15 | Respondent's relationship with person helping with ADLs |
| H23_1_15 | Registration number of person helping with ADLs         |
| H23_2_15 | Registration number of person helping with ADLs         |
| H23_3_15 | Registration number of person helping with ADLs         |
| H23_4_15 | Registration number of person helping with ADLs         |
| H23_5_15 | Registration number of person helping with ADLs         |
| H23_6_15 | Registration number of person helping with ADLs         |
| H23_7_15 | Registration number of person helping with ADLs         |
| H23_8_15 | Registration number of person helping with ADLs         |
| H24_1_15 | Number of days the person helped during last month      |
| H24_2_15 | Number of days the person helped during last month      |
| H24_3_15 | Number of days the person helped during last month      |
| H24_4_15 | Number of days the person helped during last month      |
| H24_5_15 | Number of days the person helped during last month      |
| H24_6_15 | Number of days the person helped during last month      |
| H24_7_15 | Number of days the person helped during last month      |
| H24_8_15 | Number of days the person helped during last month      |
| H25_1_15 | Number of hours during those days that the person helps |
| H25_2_15 | Number of hours during those days that the person helps |
| H25_3_15 | Number of hours during those days that the person helps |
| H25_4_15 | Number of hours during those days that the person helps |
| H25_5_15 | Number of hours during those days that the person helps |
| H25_6_15 | Number of hours during those days that the person helps |
| H25_7_15 | Number of hours during those days that the person helps |
| H25_8_15 | Number of hours during those days that the person helps |
| H26C_15  | Does someone help respondent to prepare a hot meal      |
| H27C_15  | Does someone help respondent to shop for groceries      |
| H28C_15  | Does someone help respondent to take medications        |
| H29C_15  | Does someone help respondent to manage his/her money    |
| H32_1_15 | Respondent's relationship with person helping with IADL |
| H32_2_15 | Respondent's relationship with person helping with IADL |

|          |   |
|----------|---|
| H32_3_15 | Respondent's relationship with person helping with IADL |
| H32_4_15 | Respondent's relationship with person helping with IADL |
| H32_5_15 | Respondent's relationship with person helping with IADL |
| H32_6_15 | Respondent's relationship with person helping with IADL |
| H32_7_15 | Respondent's relationship with person helping with IADL |
| H32_8_15 | Respondent's relationship with person helping with IADL |
| H33_1_15 | Registration number of person helping with IADLs        |
| H33_2_15 | Registration number of person helping with IADLs        |
| H33_3_15 | Registration number of person helping with IADLs        |
| H33_4_15 | Registration number of person helping with IADLs        |
| H33_5_15 | Registration number of person helping with IADLs        |
| H33_6_15 | Registration number of person helping with IADLs        |
| H33_7_15 | Registration number of person helping with IADLs        |
| H33_8_15 | Registration number of person helping with IADLs        |
| H34_1_15 | Number of days the person helped during last month      |
| H34_2_15 | Number of days the person helped during last month      |
| H34_3_15 | Number of days the person helped during last month      |
| H34_4_15 | Number of days the person helped during last month      |
| H34_5_15 | Number of days the person helped during last month      |
| H34_6_15 | Number of days the person helped during last month      |
| H34_7_15 | Number of days the person helped during last month      |
| H34_8_15 | Number of days the person helped during last month      |
| H35_1_15 | Number of hours during those days that the person helps |
| H35_2_15 | Number of hours during those days that the person helps |
| H35_3_15 | Number of hours during those days that the person helps |
| H35_4_15 | Number of hours during those days that the person helps |
| H35_5_15 | Number of hours during those days that the person helps |
| H35_6_15 | Number of hours during those days that the person helps |
| H35_7_15 | Number of hours during those days that the person helps |
| H35_8_15 | Number of hours during those days that the person helps |

## Wave 5:

|          |   |
|----------|---|
| H14_18   | Does someone help R to get dressed                      |
| H15D_18  | Does someone help R walking across a room               |
| H16D_18  | Does someone help R bathing or showering                |
| H17D_18  | Does someone help R eating                              |
| H18D_18  | Does someone help R getting in or out of bed            |
| H19D_18  | Does someone help R using the toilet                    |
| H22_1_18 | R's relationship with person helping with ADLs          |
| H22_2_18 | R's relationship with person helping with ADLs          |
| H22_3_18 | R's relationship with person helping with ADLs          |
| H23_1_18 | Registration number of person helping with ADLs         |
| H23_2_18 | Registration number of person helping with ADLs         |
| H23_3_18 | Registration number of person helping with ADLs         |
| H24_1_18 | Number of days the person helped during last month      |
| H24_2_18 | Number of days the person helped during last month      |
| H24_3_18 | Number of days the person helped during last month      |
| H25_1_18 | Number of hours during those days that the person helps |
| H25_2_18 | Number of hours during those days that the person helps |
| H25_3_18 | Number of hours during those days that the person helps |
| H26C_18  | Does someone help R to prepare a hot meal               |
| H27C_18  | Does someone help R to shop for groceries               |
| H28C_18  | Does someone help R to take medications                 |
| H29C_18  | Does someone help R to manage his/her money             |
| H32_1_18 | R's relationship with person helping with IADLs         |
| H32_2_18 | R's relationship with person helping with IADLs         |
| H32_3_18 | R's relationship with person helping with IADLs         |
| H33_1_18 | Registration number of person helping with IADLs        |
| H33_2_18 | Registration number of person helping with IADLs        |
| H33_3_18 | Registration number of person helping with IADLs        |
| H34_1_18 | Number of days the person helped during last month      |
| H34_2_18 | Number of days the person helped during last month      |
| H34_3_18 | Number of days the person helped during last month      |
| H35_1_18 | Number of hours during those days that the person helps |
| H35_2_18 | Number of hours during those days that the person helps |

H35\_3\_18            Number of hours during those days that the person helpe

Activities of Daily Living and Instrumental Activities of Daily Living: Whether Receives Any Formal Care

| Wave | Variable | Label  | Type  |
|------|----------|--|-------|
| 1    | R1RFAANY | r1rfaany: w1 R receives any formal care for ADLs/IADLs | Categ |
| 2    | R2RFAANY | r2rfaany: w2 R receives any formal care for ADLs/IADLs | Categ |
| 3    | R3RFAANY | r3rfaany: w3 R receives any formal care for ADLs/IADLs | Categ |
| 4    | R4RFAANY | r4rfaany: w4 R receives any formal care for ADLs/IADLs | Categ |
| 5    | R5RFAANY | r5rfaany: w5 R receives any formal care for ADLs/IADLs | Categ |
| 1    | S1RFAANY | s1rfaany: w1 S receives any formal care for ADLs/IADLs | Categ |
| 2    | S2RFAANY | s2rfaany: w2 S receives any formal care for ADLs/IADLs | Categ |
| 3    | S3RFAANY | s3rfaany: w3 S receives any formal care for ADLs/IADLs | Categ |
| 4    | S4RFAANY | s4rfaany: w4 S receives any formal care for ADLs/IADLs | Categ |
| 5    | S5RFAANY | s5rfaany: w5 S receives any formal care for ADLs/IADLs | Categ |

Descriptive Statistics

| Variable | N    | Mean | Std Dev | Minimum | Maximum |
|----------|------|------|---------|---------|---------|
| R1RFAANY | 2586 | 0.02 | 0.15    | 0.00    | 1.00    |
| R2RFAANY | 2403 | 0.02 | 0.15    | 0.00    | 1.00    |
| R3RFAANY | 4089 | 0.02 | 0.13    | 0.00    | 1.00    |
| R4RFAANY | 4182 | 0.02 | 0.14    | 0.00    | 1.00    |
| R5RFAANY | 3756 | 0.02 | 0.15    | 0.00    | 1.00    |
| S1RFAANY | 1649 | 0.01 | 0.09    | 0.00    | 1.00    |
| S2RFAANY | 1516 | 0.01 | 0.10    | 0.00    | 1.00    |
| S3RFAANY | 2464 | 0.01 | 0.09    | 0.00    | 1.00    |
| S4RFAANY | 2349 | 0.01 | 0.08    | 0.00    | 1.00    |
| S5RFAANY | 1650 | 0.02 | 0.13    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----       | R1RFAANY | R2RFAANY | R3RFAANY | R4RFAANY | R5RFAANY |
|------------------|----------|----------|----------|----------|----------|
| .d:DK            | 1        |          | 1        | 6        | 2        |
| .m:Missing       | 40       | 30       |          | 40       | 18       |
| .r:Refuse        | 2        |          | 1        | 1        | 82       |
| .x:no difficulty | 12557    | 11271    | 11632    | 10550    | 13256    |
| 0.No             | 2530     | 2347     | 4021     | 4099     | 3671     |
| 1.Yes            | 56       | 56       | 68       | 83       | 85       |

| Value-----       | S1RFAANY | S2RFAANY | S3RFAANY | S4RFAANY | S5RFAANY |
|------------------|----------|----------|----------|----------|----------|
| .d:DK            |          |          | 1        | 5        |          |
| .m:Missing       | 14       | 8        |          | 10       | 3        |
| .r:Refuse        | 1        |          |          |          | 55       |
| .u:Unmar         | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR         | 333      | 131      | 349      | 280      | 501      |
| .x:no difficulty | 8984     | 8040     | 8127     | 7288     | 5753     |
| 0.No             | 1635     | 1500     | 2442     | 2334     | 1620     |
| 1.Yes            | 14       | 16       | 22       | 15       | 30       |

How Constructed

RwRFAANY indicates whether the respondent receives any formal care for difficulties with activities of daily living (ADL) and/or instrumental activities of daily living (IADL). The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. If the respondent reports having difficulty with an ADL or IADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with ADLs, and up to 12 people in Waves 1 and 2, up to 8 people in

Waves 3 and 4, and up to 3 people in Wave 5 who help them with IADLs. The following relationship is considered to provide formal care: paid person.

Please note that for each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent. In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

RwRFAANY is assigned a value of 0 if the respondent has difficulty with at least one ADL or IADL but receives no help with the activity from a formal caregiver, or does not receive any help at all. RwRFAANY is assigned a value of 1 if the respondent has difficulty with at least one ADL or IADL and a formal caregiver helps with at least one of the activities. RwRFAANY is assigned special missing value .x if the respondent has no difficulty with any ADLs or IADLs. Don't know, refused, and other missing responses are assigned special missing values .d, .r, and .m, respectively. RwRFAANY is assigned a blank missing (.) if the respondent did not participate in the current wave.

SwRFAANY indicates whether the respondent's current wave's spouse receives any formal care for difficulties with ADLs or IADLs, and its values are taken from RwRFAANY. In addition to the special missing codes employed by RwRFAANY, SwRFAANY employs two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers each for ADLs and IADLs in Waves 1 and 2, up to 8 caregivers each for ADLs and IADLs in Waves 3 and 4, and up to 3 caregivers each for ADLs and IADLs in Wave 5.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible. Please note that the Harmonized HRS includes categories for paid formal helpers and unpaid formal helpers, while the Harmonized MHAS only includes categories for paid formal helpers.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, RwRFAANY in the Harmonized HRS also includes help using the telephone, whereas RwRFAANY in the Harmonized MHAS does not include help using the telephone.

## MHAS Variables Used

Wave 1:

|       |  |
|-------|--|
| H14   | help dressing                          |
| H15_3 | spouse helps walking                   |
| H15_4 | other helps walking                    |
| H16_3 | spouse helps bathing                   |
| H16_4 | other helps bathing                    |
| H17_3 | spouse helps eating                    |
| H17_4 | other helps eating                     |
| H18_3 | spouse helps getting in and out of bed |
| H18_4 | other helps getting in and out of bed  |
| H19_3 | spouse helps using toilet              |
| H19_4 | other helps using toilet               |
| H26_3 | spouse helps with hot meal             |
| H26_4 | someone helps with hot meal            |
| H27_3 | spouse helps with shopping             |

|                |  |
|----------------|--|
| H27_4          | someone helps with shopping                  |
| H28_3          | spouse helps with taking medication          |
| H28_4          | someone helps with taking medication         |
| H29_3          | spouse helps with managing money             |
| H29_4          | someone helps with managing money            |
| Wave 1 Helper: |  |
| H22            | kinship of helper                            |
| H23            | roster number of helper                      |
| H32            | kinship of helper                            |
| H33            | roster number of helper                      |
| Wave 2:        |  |
| H14            | someone help you to get dressed              |
| H15E           | spouse helps                                 |
| H15F           | additional person helps                      |
| H16E           | spouse helps                                 |
| H16F           | additional person helps                      |
| H17E           | spouse helps                                 |
| H17F           | additional person helps                      |
| H18E           | spouse helps                                 |
| H18F           | additional person helps                      |
| H19E           | spouse helps                                 |
| H19F           | additional person helps                      |
| H26D           | spouse helps                                 |
| H26E           | additional person helps                      |
| H27D           | spouse helps                                 |
| H27E           | additional person helps                      |
| H28D           | spouse helps                                 |
| H28E           | additional person helps                      |
| H29D           | spouse helps                                 |
| H29E           | additional person helps                      |
| Wave 2 Helper: |  |
| H22            | relationship                                 |
| H23            | registration number                          |
| H32            | relationship                                 |
| H33            | registration number                          |
| Wave 3:        |  |
| H14_12         | Someone help you to get dressed              |
| H15D_12        | Someone help you walk across room            |
| H16D_12        | Someone help you to bathe or shower          |
| H17D_12        | Does someone help you eat your food          |
| H18D_12        | Does someone help you get into or out of bed |
| H19D_12        | Does someone help you use toilet, get on off |
| H22_1_12       | Relationship with helper for ADLs            |
| H22_2_12       | Relationship with helper for ADLs            |
| H22_3_12       | Relationship with helper for ADLs            |
| H22_4_12       | Relationship with helper for ADLs            |
| H22_5_12       | Relationship with helper for ADLs            |
| H22_6_12       | Relationship with helper for ADLs            |
| H22_7_12       | Relationship with helper for ADLs            |
| H22_8_12       | Relationship with helper for ADLs            |
| H23_1_12       | Registration number of helper for ADLs       |
| H23_2_12       | Registration number of helper for ADLs       |
| H23_3_12       | Registration number of helper for ADLs       |
| H23_4_12       | Registration number of helper for ADLs       |
| H23_5_12       | Registration number of helper for ADLs       |
| H23_6_12       | Registration number of helper for ADLs       |
| H23_7_12       | Registration number of helper for ADLs       |
| H23_8_12       | Registration number of helper for ADLs       |
| H26C_12        | Does anyone help you prepare a hot meal      |
| H27C_12        | Does anyone help you shop for groceries      |
| H28C_12        | Does anyone help you take medications        |
| H29C_12        | Does anyone one help you manage your money   |
| H32_1_12       | Relationship with helper for IADLs           |
| H32_2_12       | Relationship with helper for IADLs           |

|          |   |
|----------|---|
| H32_3_12 | Relationship with helper for IADLs      |
| H32_4_12 | Relationship with helper for IADLs      |
| H32_5_12 | Relationship with helper for IADLs      |
| H32_6_12 | Relationship with helper for IADLs      |
| H32_7_12 | Relationship with helper for IADLs      |
| H32_8_12 | Relationship with helper for IADLs      |
| H33_1_12 | Registration number of helper for IADLs |
| H33_2_12 | Registration number of helper for ADLs  |
| H33_3_12 | Registration number of helper for IADLs |
| H33_4_12 | Registration number of helper for IADLs |
| H33_5_12 | Registration number of helper for IADLs |
| H33_6_12 | Registration number of helper for IADLs |
| H33_7_12 | Registration number of helper for IADLs |
| H33_8_12 | Registration number of helper for IADLs |

## Wave 4:

|          |   |
|----------|---|
| H14_15   | Does someone help respondent to get dressed             |
| H15D_15  | Does someone help respondent walking across a room      |
| H16D_15  | Does someone help respondent bathing or showering       |
| H17D_15  | Does someone help respondent eating                     |
| H18D_15  | Does someone help respondent getting in or out of bed   |
| H19D_15  | Does someone help respondent using the toilet           |
| H22_1_15 | Respondent's relationship with person helping with ADLs |
| H22_2_15 | Respondent's relationship with person helping with ADLs |
| H22_3_15 | Respondent's relationship with person helping with ADLs |
| H22_4_15 | Respondent's relationship with person helping with ADLs |
| H22_5_15 | Respondent's relationship with person helping with ADLs |
| H22_6_15 | Respondent's relationship with person helping with ADLs |
| H22_7_15 | Respondent's relationship with person helping with ADLs |
| H22_8_15 | Respondent's relationship with person helping with ADLs |
| H23_1_15 | Registration number of person helping with ADLs         |
| H23_2_15 | Registration number of person helping with ADLs         |
| H23_3_15 | Registration number of person helping with ADLs         |
| H23_4_15 | Registration number of person helping with ADLs         |
| H23_5_15 | Registration number of person helping with ADLs         |
| H23_6_15 | Registration number of person helping with ADLs         |
| H23_7_15 | Registration number of person helping with ADLs         |
| H23_8_15 | Registration number of person helping with ADLs         |
| H26C_15  | Does someone help respondent to prepare a hot meal      |
| H27C_15  | Does someone help respondent to shop for groceries      |
| H28C_15  | Does someone help respondent to take medications        |
| H29C_15  | Does someone help respondent to manage his/her money    |
| H32_1_15 | Respondent's relationship with person helping with IADL |
| H32_2_15 | Respondent's relationship with person helping with IADL |
| H32_3_15 | Respondent's relationship with person helping with IADL |
| H32_4_15 | Respondent's relationship with person helping with IADL |
| H32_5_15 | Respondent's relationship with person helping with IADL |
| H32_6_15 | Respondent's relationship with person helping with IADL |
| H32_7_15 | Respondent's relationship with person helping with IADL |
| H32_8_15 | Respondent's relationship with person helping with IADL |
| H33_1_15 | Registration number of person helping with IADLs        |
| H33_2_15 | Registration number of person helping with IADLs        |
| H33_3_15 | Registration number of person helping with IADLs        |
| H33_4_15 | Registration number of person helping with IADLs        |
| H33_5_15 | Registration number of person helping with IADLs        |
| H33_6_15 | Registration number of person helping with IADLs        |
| H33_7_15 | Registration number of person helping with IADLs        |
| H33_8_15 | Registration number of person helping with IADLs        |

## Wave 5:

|         |  |
|---------|--|
| H14_18  | Does someone help R to get dressed           |
| H15D_18 | Does someone help R walking across a room    |
| H16D_18 | Does someone help R bathing or showering     |
| H17D_18 | Does someone help R eating                   |
| H18D_18 | Does someone help R getting in or out of bed |
| H19D_18 | Does someone help R using the toilet         |



---

|          |  |
|----------|--|
| H22_1_18 | R's relationship with person helping with ADLs   |
| H22_2_18 | R's relationship with person helping with ADLs   |
| H22_3_18 | R's relationship with person helping with ADLs   |
| H23_1_18 | Registration number of person helping with ADLs  |
| H23_2_18 | Registration number of person helping with ADLs  |
| H23_3_18 | Registration number of person helping with ADLs  |
| H26C_18  | Does someone help R to prepare a hot meal        |
| H27C_18  | Does someone help R to shop for groceries        |
| H28C_18  | Does someone help R to take medications          |
| H29C_18  | Does someone help R to manage his/her money      |
| H32_1_18 | R's relationship with person helping with IADLs  |
| H32_2_18 | R's relationship with person helping with IADLs  |
| H32_3_18 | R's relationship with person helping with IADLs  |
| H33_1_18 | Registration number of person helping with IADLs |
| H33_2_18 | Registration number of person helping with IADLs |
| H33_3_18 | Registration number of person helping with IADLs |

### Activities of Daily Living and Instrumental Activities of Daily Living: Receives Formal Care from Paid Professional

| Wave | Variable      | Label  | Type  |
|------|---------------|--|-------|
| 1    | R1RPFCARE     | r1rpfcare: w1 R receives formal care from paid professional  | Categ |
| 2    | R2RPFCARE     | r2rpfcare: w2 R receives formal care from paid professional  | Categ |
| 3    | R3RPFCARE     | r3rpfcare: w3 R receives formal care from paid professional  | Categ |
| 4    | R4RPFCARE     | r4rpfcare: w4 R receives formal care from paid professional  | Categ |
| 5    | R5RPFCARE     | r5rpfcare: w5 R receives formal care from paid professional  | Categ |
| 1    | S1RPFCARE     | s1rpfcare: w1 S receives formal care from paid professional  | Categ |
| 2    | S2RPFCARE     | s2rpfcare: w2 S receives formal care from paid professional  | Categ |
| 3    | S3RPFCARE     | s3rpfcare: w3 S receives formal care from paid professional  | Categ |
| 4    | S4RPFCARE     | s4rpfcare: w4 S receives formal care from paid professional  | Categ |
| 5    | S5RPFCARE     | s5rpfcare: w5 S receives formal care from paid professional  | Categ |
| 1    | R1RPFCAREN    | r1rpfcaren: w1 # paid professionals who help R with ADLs/IAD | Cont  |
| 2    | R2RPFCAREN    | r2rpfcaren: w2 # paid professionals who help R with ADLs/IAD | Cont  |
| 3    | R3RPFCAREN    | r3rpfcaren: w3 # paid professionals who help R with ADLs/IAD | Cont  |
| 4    | R4RPFCAREN    | r4rpfcaren: w4 # paid professionals who help R with ADLs/IAD | Cont  |
| 5    | R5RPFCAREN    | r5rpfcaren: w5 # paid professionals who help R with ADLs/IAD | Cont  |
| 1    | S1RPFCAREN    | s1rpfcaren: w1 # paid professionals who help S with ADLs/IAD | Cont  |
| 2    | S2RPFCAREN    | s2rpfcaren: w2 # paid professionals who help S with ADLs/IAD | Cont  |
| 3    | S3RPFCAREN    | s3rpfcaren: w3 # paid professionals who help S with ADLs/IAD | Cont  |
| 4    | S4RPFCAREN    | s4rpfcaren: w4 # paid professionals who help S with ADLs/IAD | Cont  |
| 5    | S5RPFCAREN    | s5rpfcaren: w5 # paid professionals who help S with ADLs/IAD | Cont  |
| 1    | R1RPFCAREDPM  | r1rpfcaredpm: w1 days/month paid professionals help R with A | Cont  |
| 2    | R2RPFCAREDPM  | r2rpfcaredpm: w2 days/month paid professionals help R with A | Cont  |
| 3    | R3RPFCAREDPM  | r3rpfcaredpm: w3 days/month paid professionals help R with A | Cont  |
| 4    | R4RPFCAREDPM  | r4rpfcaredpm: w4 days/month paid professionals help R with A | Cont  |
| 5    | R5RPFCAREDPM  | r5rpfcaredpm: w5 days/month paid professionals help R with A | Cont  |
| 2    | S2RPFCAREDPM  | s2rpfcaredpm: w2 days/month paid professionals help S with A | Cont  |
| 3    | S3RPFCAREDPM  | s3rpfcaredpm: w3 days/month paid professionals help S with A | Cont  |
| 4    | S4RPFCAREDPM  | s4rpfcaredpm: w4 days/month paid professionals help S with A | Cont  |
| 5    | S5RPFCAREDPM  | s5rpfcaredpm: w5 days/month paid professionals help S with A | Cont  |
| 1    | R1RPFCAREDPMM | r1rpfcaredpmm: w1 R # paid professionals missing days of hel | Cont  |
| 2    | R2RPFCAREDPMM | r2rpfcaredpmm: w2 R # paid professionals missing days of hel | Cont  |
| 3    | R3RPFCAREDPMM | r3rpfcaredpmm: w3 R # paid professionals missing days of hel | Cont  |
| 4    | R4RPFCAREDPMM | r4rpfcaredpmm: w4 R # paid professionals missing days of hel | Cont  |
| 5    | R5RPFCAREDPMM | r5rpfcaredpmm: w5 R # paid professionals missing days of hel | Cont  |
| 1    | S1RPFCAREDPMM | s1rpfcaredpmm: w1 S # paid professionals missing days of hel | Cont  |
| 2    | S2RPFCAREDPMM | s2rpfcaredpmm: w2 S # paid professionals missing days of hel | Cont  |
| 3    | S3RPFCAREDPMM | s3rpfcaredpmm: w3 S # paid professionals missing days of hel | Cont  |
| 4    | S4RPFCAREDPMM | s4rpfcaredpmm: w4 S # paid professionals missing days of hel | Cont  |
| 5    | S5RPFCAREDPMM | s5rpfcaredpmm: w5 S # paid professionals missing days of hel | Cont  |
| 1    | R1RPFCAREHR   | r1rpfcarehr: w1 hours/day paid professionals help R with ADL | Cont  |
| 2    | R2RPFCAREHR   | r2rpfcarehr: w2 hours/day paid professionals help R with ADL | Cont  |
| 3    | R3RPFCAREHR   | r3rpfcarehr: w3 hours/day paid professionals help R with ADL | Cont  |
| 4    | R4RPFCAREHR   | r4rpfcarehr: w4 hours/day paid professionals help R with ADL | Cont  |
| 5    | R5RPFCAREHR   | r5rpfcarehr: w5 hours/day paid professionals help R with ADL | Cont  |
| 1    | S1RPFCAREHR   | s1rpfcarehr: w1 hours/day paid professionals help S with ADL | Cont  |
| 2    | S2RPFCAREHR   | s2rpfcarehr: w2 hours/day paid professionals help S with ADL | Cont  |
| 3    | S3RPFCAREHR   | s3rpfcarehr: w3 hours/day paid professionals help S with ADL | Cont  |
| 4    | S4RPFCAREHR   | s4rpfcarehr: w4 hours/day paid professionals help S with ADL | Cont  |

|   |              |  |      |
|---|--------------|--|------|
| 5 | S5RPFCAREHR  | s5rpfcarehr: w5 hours/day paid professionals help S with ADL | Cont |
| 1 | R1RPFCAREHRM | r1rpfcarehrm: w1 R # paid professionals missing hours of hel | Cont |
| 2 | R2RPFCAREHRM | r2rpfcarehrm: w2 R # paid professionals missing hours of hel | Cont |
| 3 | R3RPFCAREHRM | r3rpfcarehrm: w3 R # paid professionals missing hours of hel | Cont |
| 4 | R4RPFCAREHRM | r4rpfcarehrm: w4 R # paid professionals missing hours of hel | Cont |
| 5 | R5RPFCAREHRM | r5rpfcarehrm: w5 R # paid professionals missing hours of hel | Cont |
| 1 | S1RPFCAREHRM | s1rpfcarehrm: w1 S # paid professionals missing hours of hel | Cont |
| 2 | S2RPFCAREHRM | s2rpfcarehrm: w2 S # paid professionals missing hours of hel | Cont |
| 3 | S3RPFCAREHRM | s3rpfcarehrm: w3 S # paid professionals missing hours of hel | Cont |
| 4 | S4RPFCAREHRM | s4rpfcarehrm: w4 S # paid professionals missing hours of hel | Cont |
| 5 | S5RPFCAREHRM | s5rpfcarehrm: w5 S # paid professionals missing hours of hel | Cont |

## Descriptive Statistics

| Variable      | N    | Mean | Std Dev | Minimum | Maximum |
|---------------|------|------|---------|---------|---------|
| R1RPFCARE     | 1774 | 0.03 | 0.17    | 0.00    | 1.00    |
| R2RPFCARE     | 1674 | 0.03 | 0.18    | 0.00    | 1.00    |
| R3RPFCARE     | 2318 | 0.03 | 0.17    | 0.00    | 1.00    |
| R4RPFCARE     | 2516 | 0.03 | 0.18    | 0.00    | 1.00    |
| R5RPFCARE     | 2211 | 0.04 | 0.19    | 0.00    | 1.00    |
| S1RPFCARE     | 1148 | 0.01 | 0.11    | 0.00    | 1.00    |
| S2RPFCARE     | 1029 | 0.02 | 0.12    | 0.00    | 1.00    |
| S3RPFCARE     | 1251 | 0.02 | 0.13    | 0.00    | 1.00    |
| S4RPFCARE     | 1277 | 0.01 | 0.11    | 0.00    | 1.00    |
| S5RPFCARE     | 934  | 0.03 | 0.18    | 0.00    | 1.00    |
| R1RPFCAREN    | 1774 | 0.03 | 0.20    | 0.00    | 3.00    |
| R2RPFCAREN    | 1674 | 0.03 | 0.19    | 0.00    | 2.00    |
| R3RPFCAREN    | 2318 | 0.03 | 0.18    | 0.00    | 2.00    |
| R4RPFCAREN    | 2516 | 0.04 | 0.21    | 0.00    | 3.00    |
| R5RPFCAREN    | 2211 | 0.05 | 0.25    | 0.00    | 3.00    |
| S1RPFCAREN    | 1148 | 0.01 | 0.11    | 0.00    | 1.00    |
| S2RPFCAREN    | 1029 | 0.02 | 0.12    | 0.00    | 1.00    |
| S3RPFCAREN    | 1251 | 0.02 | 0.13    | 0.00    | 1.00    |
| S4RPFCAREN    | 1277 | 0.01 | 0.13    | 0.00    | 3.00    |
| S5RPFCAREN    | 934  | 0.04 | 0.21    | 0.00    | 3.00    |
| R1RPFCAREDPM  | 1774 | 0.91 | 5.50    | 0.00    | 90.00   |
| R2RPFCAREDPM  | 1674 | 0.93 | 5.26    | 0.00    | 60.00   |
| R3RPFCAREDPM  | 2317 | 0.65 | 4.26    | 0.00    | 60.00   |
| R4RPFCAREDPM  | 2516 | 0.78 | 5.11    | 0.00    | 90.00   |
| R5RPFCAREDPM  | 2210 | 1.06 | 6.31    | 0.00    | 90.00   |
| S2RPFCAREDPM  | 1029 | 0.44 | 3.56    | 0.00    | 30.00   |
| S3RPFCAREDPM  | 1251 | 0.33 | 2.91    | 0.00    | 30.00   |
| S4RPFCAREDPM  | 1277 | 0.33 | 3.65    | 0.00    | 90.00   |
| S5RPFCAREDPM  | 934  | 0.82 | 4.88    | 0.00    | 60.00   |
| R1RPFCAREDPMM | 1774 | 0.00 | 0.00    | 0.00    | 0.00    |
| R2RPFCAREDPMM | 1674 | 0.00 | 0.00    | 0.00    | 0.00    |
| R3RPFCAREDPMM | 2318 | 0.00 | 0.02    | 0.00    | 1.00    |
| R4RPFCAREDPMM | 2516 | 0.00 | 0.00    | 0.00    | 0.00    |
| R5RPFCAREDPMM | 2211 | 0.00 | 0.02    | 0.00    | 1.00    |
| S1RPFCAREDPMM | 1148 | 0.00 | 0.00    | 0.00    | 0.00    |
| S2RPFCAREDPMM | 1029 | 0.00 | 0.00    | 0.00    | 0.00    |
| S3RPFCAREDPMM | 1251 | 0.00 | 0.00    | 0.00    | 0.00    |
| S4RPFCAREDPMM | 1277 | 0.00 | 0.00    | 0.00    | 0.00    |
| S5RPFCAREDPMM | 934  | 0.00 | 0.00    | 0.00    | 0.00    |

|              |      |      |      |      |       |
|--------------|------|------|------|------|-------|
| R1RPFCAREHR  | 1774 | 0.33 | 2.37 | 0.00 | 48.00 |
| R2RPFCAREHR  | 1674 | 0.27 | 1.88 | 0.00 | 24.00 |
| R3RPFCAREHR  | 2318 | 0.32 | 2.26 | 0.00 | 30.00 |
| R4RPFCAREHR  | 2516 | 0.33 | 2.34 | 0.00 | 36.00 |
| R5RPFCAREHR  | 2208 | 0.37 | 2.66 | 0.00 | 48.00 |
|              |      |      |      |      |       |
| S1RPFCAREHR  | 1148 | 0.10 | 1.05 | 0.00 | 24.00 |
| S2RPFCAREHR  | 1029 | 0.09 | 0.85 | 0.00 | 12.00 |
| S3RPFCAREHR  | 1251 | 0.20 | 1.86 | 0.00 | 24.00 |
| S4RPFCAREHR  | 1277 | 0.10 | 1.26 | 0.00 | 24.00 |
| S5RPFCAREHR  | 933  | 0.27 | 2.15 | 0.00 | 48.00 |
|              |      |      |      |      |       |
| R1RPFCAREHRM | 1774 | 0.00 | 0.00 | 0.00 | 0.00  |
| R2RPFCAREHRM | 1674 | 0.00 | 0.00 | 0.00 | 0.00  |
| R3RPFCAREHRM | 2318 | 0.00 | 0.00 | 0.00 | 0.00  |
| R4RPFCAREHRM | 2516 | 0.00 | 0.00 | 0.00 | 0.00  |
| R5RPFCAREHRM | 2211 | 0.00 | 0.04 | 0.00 | 1.00  |
|              |      |      |      |      |       |
| S1RPFCAREHRM | 1148 | 0.00 | 0.00 | 0.00 | 0.00  |
| S2RPFCAREHRM | 1029 | 0.00 | 0.00 | 0.00 | 0.00  |
| S3RPFCAREHRM | 1251 | 0.00 | 0.00 | 0.00 | 0.00  |
| S4RPFCAREHRM | 1277 | 0.00 | 0.00 | 0.00 | 0.00  |
| S5RPFCAREHRM | 934  | 0.00 | 0.03 | 0.00 | 1.00  |

## Categorical Variable Codes

| Value-----          | R1RPFCARE | R2RPFCARE | R3RPFCARE | R4RPFCARE | R5RPFCARE |
|---------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK               | 1         |           | 1         | 6         | 2         |
| .h:no help received | 812       | 729       | 1771      | 1666      | 1545      |
| .m:Missing          | 40        | 30        |           | 40        | 18        |
| .r:Refuse           | 2         |           | 1         | 1         | 82        |
| .x:no difficulty    | 12557     | 11271     | 11632     | 10550     | 13256     |
| 0.No                | 1718      | 1618      | 2250      | 2433      | 2126      |
| 1.Yes               | 56        | 56        | 68        | 83        | 85        |

| Value-----          | S1RPFCARE | S2RPFCARE | S3RPFCARE | S4RPFCARE | S5RPFCARE |
|---------------------|-----------|-----------|-----------|-----------|-----------|
| .d:DK               |           |           | 1         | 5         |           |
| .h:no help received | 501       | 487       | 1213      | 1072      | 716       |
| .m:Missing          | 14        | 8         |           | 10        | 3         |
| .r:Refuse           | 1         |           |           |           | 55        |
| .u:Unmar            | 4205      | 4009      | 4782      | 4847      | 5227      |
| .v:SP NR            | 333       | 131       | 349       | 280       | 501       |
| .x:no difficulty    | 8984      | 8040      | 8127      | 7288      | 5753      |
| 0.No                | 1134      | 1013      | 1229      | 1262      | 904       |
| 1.Yes               | 14        | 16        | 22        | 15        | 30        |

## How Constructed

The following variables indicate whether paid formal caregivers help the respondent with any ADL or IADL needs. The activities of daily living include dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet. The instrumental activities of daily living include preparing meals, grocery shopping, taking medications, and managing money. If the respondent reports having difficulty with an ADL or IADL, then they are asked whether someone helps them with that activity. If someone helps with the activity, they are asked for the relationships of up to 12 people in Waves 1 and 2, up to 8 people in Waves 3 and 4, and up to 3 people in Wave 5 who help them with ADLs and IADLs each. The information used to derive these variables is taken from the help files in Waves 1 and 2 and from the individual files in Waves 3 and forward. For each caregiver, the respondent is asked to report their relationship to the caregiver and the caregiver's roster number, if any. In cases where the reported relationship disagrees with the roster number, the roster number takes precedence in defining the relationship for spouses and children, for which the roster numbers follow clear rules. In cases where the reported relationship is "spouse" but the roster number indicates a non-spouse household member or an individual with no roster number, meaning they are not a child or within the household, the relationship type is changed to "other person". In cases of multiple records with the same caregiver relationship and roster number, we only consider the caregiver with the highest level of care provided to the respondent.

In cases of multiple records with the same caregiver relationship and no roster number, we assume all mentions are separate individuals.

The following variables are coded as special missing value .x if the respondent reports no difficulty with any ADL or IADL, and are coded as special missing value .h if the respondent reports difficulty with an ADL or IADL but does not receive any help. Don't know, refused, or other missing responses are assigned special missing values .d, .r, and .m, respectively. These variables are set to plain missing (.) for respondents who did not participate in the current wave.

RwRPFCARE, RwRPFCAREN, RwRPFCAREDPM, RwRPFCAREDPMM, RwRPFCAREHR, and RwRPFCAREHRM include help from a paid person.

RwRPFCARE indicates whether any paid professionals help the respondent with ADL or IADL needs. RwRPFCAREN indicates the number of paid professionals who help the respondent with ADL or IADL needs. RwRPFCARE is coded as 0 if no paid professionals help the respondent with ADLs or IADLs; and is coded as 1 if at least one paid professional helps the respondent with ADLs or IADLs.

RwRPFCAREDPM indicates the number of total days per month paid professionals help the respondent with ADL or IADL needs. If the respondent reports receiving help every day from that paid professional, then a value of 30 is assumed. RwRPFCAREDPM is the sum of days per month for all paid professional helpers, and so values can be over 30 days. RwRPFCAREDPM is calculated as long as there is one non-missing value. RwRPFCAREDPM is assigned a value of 0 if the respondent did not receive help from any paid professionals. RwRPFCAREDPMM indicates the number of paid professionals who helped the respondent for whom no value of days was reported and was not accounted for in RwRPFCAREDPM. RwRPFCAREDPMM is assigned special missing value .m if the respondent was not helped by any paid professionals.

RwRPFCAREHR indicates the number of hours per day paid professionals help the respondent with ADL or IADL needs. Respondents are asked, on days paid professionals help, how many hours per day that is. If the respondent reports less than an hour for that paid professional, then a 1 is assumed. RwRPFCAREHR is the sum of hours per day for all paid professional helpers, and so values can be over 24 hours. RwRPFCAREHR is calculated as long as there is one non-missing value. RwRPFCAREHR is assigned a value of 0 if the respondent does not receive help from any paid professionals. RwRPFCAREHRM indicates the number of paid professionals who helped the respondent for whom no value of hours was reported and was not accounted for in RwRPFCAREHR. RwRPFCAREHRM is assigned special missing value .m if the respondent was not helped by any paid professionals.

SwRPFCARE, SwRPFCAREN, SwRPFCAREDPM, and SwRPFCAREHR indicate whether the respondent's current wave's spouse receives help from paid professionals, the number, and the frequency with which, and their values are taken from RwRPFCARE, RwRPFCAREN, RwRPFCAREDPM, and RwRPFCAREHR. SwRPFCAREDPMM and SwRPFCAREHRM indicate the number of paid professionals who helped the respondent's current spouse for whom a value was not reported for the number of days and hours and are taken from RwRPFCAREDPMM and RwRPFCAREHRM. In addition to the special missing codes employed by the respondent variables, the spouse variables employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents are allowed to mention up to 12 caregivers each in Waves 1 and 2 for ADLs and IADLs, up to 8 caregivers each in Waves 3 and 4 for ADLs and IADLs, and up to 3 caregivers each in Wave 5 for ADLs and IADLs.

## Differences with the RAND HRS/Harmonized HRS

The HRS has different categories of relationships between the respondent and their caregiver, but these variables have been created to be as comparable as possible.

RwRPFCARE in the Harmonized MHAS is also comparable to RwRFAANY in the Harmonized HRS, indicating any formal care for ADLs and IADLs, because the MHAS does not have a category for unpaid formal caregivers.

The HRS IADL list includes using the telephone, which is absent in the MHAS. As such, these variables in the Harmonized HRS also include help using the telephone, whereas in the Harmonized MHAS they do not include help using the telephone.

RwRPFCAREDPW in the Harmonized HRS indicates the days per week the respondent received help, while RwRPFCAREDPM in the Harmonized MHAS indicates the days per month the respondent received help. As such, adjustment must be made before comparison of these variables.

The HRS asks for up to 7 relationships of people who help with ADLs (dressing, walking across a room, bathing, eating, getting in and out of bed, and using the toilet). The MHAS, in contrast, asks for the relationships of a varying number of people across waves who help with ADLs. The HRS asks for up to 6 relationships of people who help with IADLs (preparing meals, grocery shopping, making phone calls, and taking medications), and up to 2 people who help with managing money. The MHAS, in contrast, asks for the relationships of a varying number of people who help with preparing meals, grocery shopping, taking medications, and managing money together.

## MHAS Variables Used

### Wave 1:

|       |                                       |
|-------|---------------------------------------|
| H14   | help dressing                         |
| H15_3 | spouse helps walking                  |
| H15_4 | other helps walking                   |
| H16_3 | spouse helps bathing                  |
| H16_4 | other helps bathing                   |
| H17_3 | spouse helps eating                   |
| H17_4 | other helps eating                    |
| H18_3 | spouse helps getting in an out of bed |
| H18_4 | other helps getting in an out of bed  |
| H19_3 | spouse helps using toilet             |
| H19_4 | other helps using toilet              |
| H26_3 | spouse helps with hot meal            |
| H26_4 | someone helps with hot meal           |
| H27_3 | spouse helps with shopping            |
| H27_4 | someone helps with shopping           |
| H28_3 | spouse helps with taking medication   |
| H28_4 | someone helps with taking medication  |
| H29_3 | spouse helps with managing money      |
| H29_4 | someone helps with managing money     |

### Wave 1 Helper:

|     |                         |
|-----|-------------------------|
| H22 | kinship of helper       |
| H23 | roster number of helper |
| H24 | days of help            |
| H25 | hours of help           |
| H32 | kinship of helper       |
| H33 | roster number of helper |
| H34 | days of help            |
| H35 | hours of help           |

### Wave 2:

|      |                                 |
|------|---------------------------------|
| H14  | someone help you to get dressed |
| H15E | spouse helps                    |
| H15F | additional person helps         |
| H16E | spouse helps                    |
| H16F | additional person helps         |
| H17E | spouse helps                    |
| H17F | additional person helps         |
| H18E | spouse helps                    |
| H18F | additional person helps         |
| H19E | spouse helps                    |
| H19F | additional person helps         |
| H26D | spouse helps                    |
| H26E | additional person helps         |
| H27D | spouse helps                    |
| H27E | additional person helps         |
| H28D | spouse helps                    |
| H28E | additional person helps         |
| H29D | spouse helps                    |
| H29E | additional person helps         |

### Wave 2 Helper:

|     |   |
|-----|---|
| H22 | relationship                            |
| H23 | registration number                     |
| H24 | number of days (name) helped last month |
| H25 | number of hours during those days       |
| H32 | relationship                            |
| H33 | registration number                     |
| H34 | number of days (name) helped last month |
| H35 | how many hours during those days        |

## Wave 3:

|          |   |
|----------|---|
| H14_12   | Someone help you to get dressed                 |
| H15D_12  | Someone help you walk across room               |
| H16D_12  | Someone help you to bathe or shower             |
| H17D_12  | Does someone help you eat your food             |
| H18D_12  | Does someone help you get into or out of bed    |
| H19D_12  | Does someone help you use toilet, get on off    |
| H22_1_12 | Relationship with helper for ADLs               |
| H22_2_12 | Relationship with helper for ADLs               |
| H22_3_12 | Relationship with helper for ADLs               |
| H22_4_12 | Relationship with helper for ADLs               |
| H22_5_12 | Relationship with helper for ADLs               |
| H22_6_12 | Relationship with helper for ADLs               |
| H22_7_12 | Relationship with helper for ADLs               |
| H22_8_12 | Relationship with helper for ADLs               |
| H23_1_12 | Registration number of helper for ADLs          |
| H23_2_12 | Registration number of helper for ADLs          |
| H23_3_12 | Registration number of helper for ADLs          |
| H23_4_12 | Registration number of helper for ADLs          |
| H23_5_12 | Registration number of helper for ADLs          |
| H23_6_12 | Registration number of helper for ADLs          |
| H23_7_12 | Registration number of helper for ADLs          |
| H23_8_12 | Registration number of helper for ADLs          |
| H24_1_12 | Number of days (name) helped last month         |
| H24_2_12 | Number of days (name) helped last month         |
| H24_3_12 | Number of days (name) helped last month         |
| H24_4_12 | Number of days (name) helped last month         |
| H24_5_12 | Number of days (name) helped last month         |
| H24_6_12 | Number of days (name) helped last month         |
| H24_7_12 | Number of days (name) helped last month         |
| H24_8_12 | Number of days (name) helped last month         |
| H25_1_12 | Number of hours during those days (NAME) helped |
| H25_2_12 | Number of hours during those days (NAME) helped |
| H25_3_12 | Number of hours during those days (NAME) helped |
| H25_4_12 | Number of hours during those days (NAME) helped |
| H25_5_12 | Number of hours during those days (NAME) helped |
| H25_6_12 | Number of hours during those days (NAME) helped |
| H25_7_12 | Number of hours during those days (NAME) helped |
| H25_8_12 | Number of hours during those days (NAME) helped |
| H26C_12  | Does anyone help you prepare a hot meal         |
| H27C_12  | Does anyone help you shop for groceries         |
| H28C_12  | Does anyone help you take medications           |
| H29C_12  | Does anyone one help you manage your money      |
| H32_1_12 | Relationship with helper for IADLs              |
| H32_2_12 | Relationship with helper for IADLs              |
| H32_3_12 | Relationship with helper for IADLs              |
| H32_4_12 | Relationship with helper for IADLs              |
| H32_5_12 | Relationship with helper for IADLs              |
| H32_6_12 | Relationship with helper for IADLs              |
| H32_7_12 | Relationship with helper for IADLs              |
| H32_8_12 | Relationship with helper for IADLs              |
| H33_1_12 | Registration number of helper for IADLs         |
| H33_2_12 | Registration number of helper for ADLs          |
| H33_3_12 | Registration number of helper for IADLs         |
| H33_4_12 | Registration number of helper for IADLs         |
| H33_5_12 | Registration number of helper for IADLs         |

|          |   |
|----------|---|
| H33_6_12 | Registration number of helper for IADLs                 |
| H33_7_12 | Registration number of helper for IADLs                 |
| H33_8_12 | Registration number of helper for IADLs                 |
| H34_1_12 | Number of days (name) helped last month                 |
| H34_2_12 | Number of days (name) helped last month                 |
| H34_3_12 | Number of days (name) helped last month                 |
| H34_4_12 | Number of days (name) helped last month                 |
| H34_5_12 | Number of days (name) helped last month                 |
| H34_6_12 | Number of days (name) helped last month                 |
| H34_7_12 | Number of days (name) helped last month                 |
| H34_8_12 | Number of days (name) helped last month                 |
| H35_1_12 | Number of hours during those days (NAME) helped         |
| H35_2_12 | Number of hours during those days (NAME) helped         |
| H35_3_12 | Number of hours during those days (NAME) helped         |
| H35_4_12 | Number of hours during those days (NAME) helped         |
| H35_5_12 | Number of hours during those days (NAME) helped         |
| H35_6_12 | Number of hours during those days (NAME) helped         |
| H35_7_12 | Number of hours during those days (NAME) helped         |
| H35_8_12 | Number of hours during those days (NAME) helped         |
| Wave 4:  |   |
| H14_15   | Does someone help respondent to get dressed             |
| H15D_15  | Does someone help respondent walking across a room      |
| H16D_15  | Does someone help respondent bathing or showering       |
| H17D_15  | Does someone help respondent eating                     |
| H18D_15  | Does someone help respondent getting in or out of bed   |
| H19D_15  | Does someone help respondent using the toilet           |
| H22_1_15 | Respondent's relationship with person helping with ADLs |
| H22_2_15 | Respondent's relationship with person helping with ADLs |
| H22_3_15 | Respondent's relationship with person helping with ADLs |
| H22_4_15 | Respondent's relationship with person helping with ADLs |
| H22_5_15 | Respondent's relationship with person helping with ADLs |
| H22_6_15 | Respondent's relationship with person helping with ADLs |
| H22_7_15 | Respondent's relationship with person helping with ADLs |
| H22_8_15 | Respondent's relationship with person helping with ADLs |
| H23_1_15 | Registration number of person helping with ADLs         |
| H23_2_15 | Registration number of person helping with ADLs         |
| H23_3_15 | Registration number of person helping with ADLs         |
| H23_4_15 | Registration number of person helping with ADLs         |
| H23_5_15 | Registration number of person helping with ADLs         |
| H23_6_15 | Registration number of person helping with ADLs         |
| H23_7_15 | Registration number of person helping with ADLs         |
| H23_8_15 | Registration number of person helping with ADLs         |
| H24_1_15 | Number of days the person helped during last month      |
| H24_2_15 | Number of days the person helped during last month      |
| H24_3_15 | Number of days the person helped during last month      |
| H24_4_15 | Number of days the person helped during last month      |
| H24_5_15 | Number of days the person helped during last month      |
| H24_6_15 | Number of days the person helped during last month      |
| H24_7_15 | Number of days the person helped during last month      |
| H24_8_15 | Number of days the person helped during last month      |
| H25_1_15 | Number of hours during those days that the person helps |
| H25_2_15 | Number of hours during those days that the person helps |
| H25_3_15 | Number of hours during those days that the person helps |
| H25_4_15 | Number of hours during those days that the person helps |
| H25_5_15 | Number of hours during those days that the person helps |
| H25_6_15 | Number of hours during those days that the person helps |
| H25_7_15 | Number of hours during those days that the person helps |
| H25_8_15 | Number of hours during those days that the person helps |
| H26C_15  | Does someone help respondent to prepare a hot meal      |
| H27C_15  | Does someone help respondent to shop for groceries      |
| H28C_15  | Does someone help respondent to take medications        |
| H29C_15  | Does someone help respondent to manage his/her money    |
| H32_1_15 | Respondent's relationship with person helping with IADL |
| H32_2_15 | Respondent's relationship with person helping with IADL |



|          |   |
|----------|---|
| H32_3_15 | Respondent's relationship with person helping with IADL |
| H32_4_15 | Respondent's relationship with person helping with IADL |
| H32_5_15 | Respondent's relationship with person helping with IADL |
| H32_6_15 | Respondent's relationship with person helping with IADL |
| H32_7_15 | Respondent's relationship with person helping with IADL |
| H32_8_15 | Respondent's relationship with person helping with IADL |
| H33_1_15 | Registration number of person helping with IADLs        |
| H33_2_15 | Registration number of person helping with IADLs        |
| H33_3_15 | Registration number of person helping with IADLs        |
| H33_4_15 | Registration number of person helping with IADLs        |
| H33_5_15 | Registration number of person helping with IADLs        |
| H33_6_15 | Registration number of person helping with IADLs        |
| H33_7_15 | Registration number of person helping with IADLs        |
| H33_8_15 | Registration number of person helping with IADLs        |
| H34_1_15 | Number of days the person helped during last month      |
| H34_2_15 | Number of days the person helped during last month      |
| H34_3_15 | Number of days the person helped during last month      |
| H34_4_15 | Number of days the person helped during last month      |
| H34_5_15 | Number of days the person helped during last month      |
| H34_6_15 | Number of days the person helped during last month      |
| H34_7_15 | Number of days the person helped during last month      |
| H34_8_15 | Number of days the person helped during last month      |
| H35_1_15 | Number of hours during those days that the person helps |
| H35_2_15 | Number of hours during those days that the person helps |
| H35_3_15 | Number of hours during those days that the person helps |
| H35_4_15 | Number of hours during those days that the person helps |
| H35_5_15 | Number of hours during those days that the person helps |
| H35_6_15 | Number of hours during those days that the person helps |
| H35_7_15 | Number of hours during those days that the person helps |
| H35_8_15 | Number of hours during those days that the person helps |

## Wave 5:

|          |   |
|----------|---|
| H14_18   | Does someone help R to get dressed                      |
| H15D_18  | Does someone help R walking across a room               |
| H16D_18  | Does someone help R bathing or showering                |
| H17D_18  | Does someone help R eating                              |
| H18D_18  | Does someone help R getting in or out of bed            |
| H19D_18  | Does someone help R using the toilet                    |
| H22_1_18 | R's relationship with person helping with ADLs          |
| H22_2_18 | R's relationship with person helping with ADLs          |
| H22_3_18 | R's relationship with person helping with ADLs          |
| H23_1_18 | Registration number of person helping with ADLs         |
| H23_2_18 | Registration number of person helping with ADLs         |
| H23_3_18 | Registration number of person helping with ADLs         |
| H24_1_18 | Number of days the person helped during last month      |
| H24_2_18 | Number of days the person helped during last month      |
| H24_3_18 | Number of days the person helped during last month      |
| H25_1_18 | Number of hours during those days that the person helps |
| H25_2_18 | Number of hours during those days that the person helps |
| H25_3_18 | Number of hours during those days that the person helps |
| H26C_18  | Does someone help R to prepare a hot meal               |
| H27C_18  | Does someone help R to shop for groceries               |
| H28C_18  | Does someone help R to take medications                 |
| H29C_18  | Does someone help R to manage his/her money             |
| H32_1_18 | R's relationship with person helping with IADLs         |
| H32_2_18 | R's relationship with person helping with IADLs         |
| H32_3_18 | R's relationship with person helping with IADLs         |
| H33_1_18 | Registration number of person helping with IADLs        |
| H33_2_18 | Registration number of person helping with IADLs        |
| H33_3_18 | Registration number of person helping with IADLs        |
| H34_1_18 | Number of days the person helped during last month      |
| H34_2_18 | Number of days the person helped during last month      |
| H34_3_18 | Number of days the person helped during last month      |
| H35_1_18 | Number of hours during those days that the person helps |
| H35_2_18 | Number of hours during those days that the person helps |

H35\_3\_18            Number of hours during those days that the person helpe

|   |
|---|
| <b>Receives Help with Chores from Children or Grandchildren</b> |
|---|

| Wave | Variable    | Label  | Type  |
|------|-------------|--|-------|
| 1    | H1RCCHORE   | h1rcchore: w1 R+S receives help with chores from children/gr | Categ |
| 2    | H2RCCHORE   | h2rcchore: w2 R+S receives help with chores from children/gr | Categ |
| 3    | H3RCCHORE   | h3rcchore: w3 R+S receives help with chores from children/gr | Categ |
| 4    | H4RCCHORE   | h4rcchore: w4 R+S receives help with chores from children/gr | Categ |
| 5    | H5RCCHORE   | h5rcchore: w5 R+S receives help with chores from children/gr | Categ |
|      |             |  |       |
| 2    | H2RCCHORENF | h2rcchorenf: w2 R+S receive enough help with chores from chi | Categ |
| 3    | H3RCCHORENF | h3rcchorenf: w3 R+S receive enough help with chores from chi | Categ |
| 4    | H4RCCHORENF | h4rcchorenf: w4 R+S receive enough help with chores from chi | Categ |
| 5    | H5RCCHORENF | h5rcchorenf: w5 R+S receive enough help with chores from chi | Categ |
|      |             |  |       |
| 3    | H3RCCHOREHR | h3rcchorehr: w3 hours/year children/grandchildren help with  | Cont  |
| 4    | H4RCCHOREHR | h4rcchorehr: w4 hours/year children/grandchildren help with  | Cont  |
| 5    | H5RCCHOREHR | h5rcchorehr: w5 hours/year children/grandchildren help with  | Cont  |

### Descriptive Statistics

| Variable    | N     | Mean   | Std Dev | Minimum | Maximum |
|-------------|-------|--------|---------|---------|---------|
| H1RCCHORE   | 14887 | 0.48   | 0.50    | 0.00    | 1.00    |
| H2RCCHORE   | 13442 | 0.45   | 0.50    | 0.00    | 1.00    |
| H3RCCHORE   | 14938 | 0.47   | 0.50    | 0.00    | 1.00    |
| H4RCCHORE   | 14263 | 0.52   | 0.50    | 0.00    | 1.00    |
| H5RCCHORE   | 15584 | 0.52   | 0.50    | 0.00    | 1.00    |
|             |       |        |         |         |         |
| H2RCCHORENF | 11557 | 2.33   | 0.57    | 1.00    | 3.00    |
| H3RCCHORENF | 13441 | 2.22   | 0.61    | 1.00    | 3.00    |
| H4RCCHORENF | 13477 | 2.16   | 0.60    | 1.00    | 3.00    |
| H5RCCHORENF | 14207 | 2.20   | 0.63    | 1.00    | 3.00    |
|             |       |        |         |         |         |
| H3RCCHOREHR | 14853 | 530.64 | 1276.71 | 0.00    | 8760.00 |
| H4RCCHOREHR | 14209 | 453.48 | 983.52  | 0.00    | 8760.00 |
| H5RCCHOREHR | 15418 | 572.80 | 1233.74 | 0.00    | 8760.00 |

### Categorical Variable Codes

| Value-----                    | H1RCCHORE | H2RCCHORE   | H3RCCHORE   | H4RCCHORE   | H5RCCHORE   |
|-------------------------------|-----------|-------------|-------------|-------------|-------------|
| .c:no living children         | 743       | 589         | 744         | 629         | 1473        |
| .d:DK                         | 20        | 6           | 6           | 7           | 17          |
| .m:Missing                    | 32        | 25          | 16          | 34          | 20          |
| .r:Refuse                     | 24        | 2           | 19          | 12          | 20          |
| 0.No                          | 7815      | 7458        | 7886        | 6903        | 7447        |
| 1.Yes                         | 7072      | 5984        | 7052        | 7360        | 8137        |
|                               |           |             |             |             |             |
| Value-----                    |           | H2RCCHORENF | H3RCCHORENF | H4RCCHORENF | H5RCCHORENF |
| .c:no living children         |           | 383         | 744         | 629         | 1473        |
| .d:DK                         |           | 458         | 335         | 108         | 409         |
| .m:Missing                    |           | 121         | 16          | 34          | 20          |
| .p:Proxy interview, not asked |           | 422         | 847         | 533         | 721         |
| .r:Refuse                     |           | 1098        | 340         | 164         | 284         |
| 1.more than enough            |           | 617         | 1299        | 1483        | 1687        |
| 2.enough                      |           | 6499        | 7847        | 8335        | 8025        |
| 3.not enough                  |           | 4441        | 4295        | 3659        | 4495        |

### How Constructed

HwRCCHORE indicates whether the respondent's and spouse's children, children-in-law, and/or grandchildren spent at least one hour a week helping the respondent and their spouse with household chores, errands, transportation, and similar activities in the last two years. HwRCCHORE is assigned a value of 0 if the

respondent and their spouse did not receive at least one hour a week of help from their children, and is assigned a 1 if the respondent and their spouse did receive at least one hour a week of help from their children. HwRCCHORE is assigned special missing value .c if the respondent and their spouse do not have any living children. Don't know, refused, and other missing responses are assigned special missing values .d, .r, .m, respectively. HwRCCHORE is assigned plain missing (.) if the respondent did not participate in the current wave.

HwRCCHORENF indicates how the respondent and their spouse would describe the amount of help with household chores received from their children, children-in-law, and/or grandchildren. This question is asked regardless of whether the respondent and their spouse received at least one hour a week of help with household chores from their children in the past two years. HwRCCHORENF is coded as follows: 1.more than enough, 2.enough, 3.not enough. HwRCCHORENF is assigned special missing value .c if the respondent and their spouse do not have any living children. HwRCCHORENF is assigned special missing value .p if this question is skipped because the section is answered by proxy respondent. Don't know, refused, and other missing responses are assigned special missing values .d, .r, .m, respectively. HwRCCHORENF is assigned plain missing (.) if the respondent did not participate in the current wave.

HwRCCHOREHR indicates how many hours per year the respondent and their spouse received help with household chores from their children, children-in-law, or grandchildren in the last two years. Respondents are able to report the total number of hours in days, weeks, months, or years, the responses to which have been converted to the number of hours in a year. HwRCCHOREHR is assigned a value of 0 if the respondent and their spouse did not receive at least one hour a week of help. HwRCCHOREHR is assigned special missing value .c if the respondent and their spouse do not have any living children. HwRCCHOREHR is assigned special missing value .i if the respondent reports receiving more than 24 hours of help per day. Don't know, refused, and other missing responses are assigned special missing values .d, .r, .m, respectively. HwRCCHOREHR is assigned plain missing (.) if the respondent did not participate in the current wave.

## Cross Wave Differences in MHAS

The respondent is asked whether the respondent and their spouse receive help with household chores from their children at least one hour a week, and how they would describe that amount of help starting in Wave 2.

Starting in Wave 3, the respondent is asked how many hours the respondent and their spouse received help with household chores from their children.

## Differences with the RAND HRS/Harmonized HRS

There is no comparable question in the HRS.

## MHAS Variables Used

|            |   |
|------------|---|
| Wave 1:    |   |
| G2         | alive children  |
| G25        | assistance from children                                |
| Wave 2:    |   |
| G1B        | status of children                                      |
| G24        | (grand)children spent at least one hour helping you     |
| G31        | physical help from others was sufficient                |
| TIPENT_03  | Type of interview 2003                                  |
| Wave 3:    |   |
| G24_12     | Last 2 years:Respondent received >1 hour per week..from |
| G25B1_12   | Last 2 years:Number of hours respondent... from childre |
| G25B2_12   | Last 2 years:Respondent's period to report receiving ho |
| G27_12     | Opinion of non-financial assistance received from child |
| G2_12      | Does respondent/spouse have living children             |
| TIPENTG_12 | Type of interview section G 2012                        |
| Wave 4:    |   |
| G24_15     | Last 2 years:Respondent received >1 hour per week..from |
| G25B1_15   | Last 2 years:Number of hours respondent... from childre |
| G25B2_15   | Last 2 years:Respondent's period to report receiving ho |
| G27_15     | Opinion of non-financial assistance received from child |

|              |   |
|--------------|---|
| G2_15        | Does respondent/spouse have living children             |
| TIPENTG_15   | Type of interview Section G 2015                        |
| Wave 5:      |   |
| G24_18       | Last 2 years:Respondent received 1+ hour per week...fro |
| G25B1_18     | Last 2 years:Number of hours respondent... from childre |
| G25B2_18     | Last 2 years:Respondent's period to report receiving ho |
| G27_18       | Opinion of non-financial assistance received from child |
| G2_18        | Does respondent/spouse have living children             |
| TIPENT_HH_18 | Type of interview Household Sections 2018               |

|                               |
|-------------------------------|
| <b>Provides Informal Care</b> |
|-------------------------------|

| Wave | Variable     | Label  | Type  |
|------|--------------|--|-------|
| 1    | H1GCAANY     | h1gcaany: w1 R+S provide any informal care                   | Categ |
| 2    | H2GCAANY     | h2gcaany: w2 R+S provide any informal care                   | Categ |
| 3    | H3GCAANY     | h3gcaany: w3 R+S provide any informal care                   | Categ |
| 4    | H4GCAANY     | h4gcaany: w4 R+S provide any informal care                   | Categ |
| 5    | H5GCAANY     | h5gcaany: w5 R+S provide any informal care                   | Categ |
|      |              |  |       |
| 1    | H1GCCARE_M   | h1gccare_m: w1 R+S provide informal care to children/grandch | Categ |
| 2    | H2GCCARE_M   | h2gccare_m: w2 R+S provide informal care to children/grandch | Categ |
| 3    | H3GCCARE_M   | h3gccare_m: w3 R+S provide informal care to children/grandch | Categ |
| 4    | H4GCCARE_M   | h4gccare_m: w4 R+S provide informal care to children/grandch | Categ |
| 5    | H5GCCARE_M   | h5gccare_m: w5 R+S provide informal care to children/grandch | Categ |
|      |              |  |       |
| 1    | H1GCCAREHR_M | h1gccarehr_m: w1 hours/year R+S provide informal care to chi | Cont  |
| 2    | H2GCCAREHR_M | h2gccarehr_m: w2 hours/year R+S provide informal care to chi | Cont  |
| 3    | H3GCCAREHR_M | h3gccarehr_m: w3 hours/year R+S provide informal care to chi | Cont  |
| 4    | H4GCCAREHR_M | h4gccarehr_m: w4 hours/year R+S provide informal care to chi | Cont  |
| 5    | H5GCCAREHR_M | h5gccarehr_m: w5 hours/year R+S provide informal care to chi | Cont  |
|      |              |  |       |
| 1    | R1GPCARE     | r1gpcare: w1 R provided informal care to parents             | Categ |
| 2    | R2GPCARE     | r2gpcare: w2 R provided informal care to parents             | Categ |
| 3    | R3GPCARE     | r3gpcare: w3 R provided informal care to parents             | Categ |
| 4    | R4GPCARE     | r4gpcare: w4 R provided informal care to parents             | Categ |
| 5    | R5GPCARE     | r5gpcare: w5 R provided informal care to parents             | Categ |
|      |              |  |       |
| 1    | S1GPCARE     | s1gpcare: w1 S provided informal care to parents             | Categ |
| 2    | S2GPCARE     | s2gpcare: w2 S provided informal care to parents             | Categ |
| 3    | S3GPCARE     | s3gpcare: w3 S provided informal care to parents             | Categ |
| 4    | S4GPCARE     | s4gpcare: w4 S provided informal care to parents             | Categ |
| 5    | S5GPCARE     | s5gpcare: w5 S provided informal care to parents             | Categ |
|      |              |  |       |
| 1    | R1GPCAREHR   | r1gpcarehr: w1 hours/year R provided informal care to parent | Cont  |
| 2    | R2GPCAREHR   | r2gpcarehr: w2 hours/year R provided informal care to parent | Cont  |
| 3    | R3GPCAREHR   | r3gpcarehr: w3 hours/year R provided informal care to parent | Cont  |
| 4    | R4GPCAREHR   | r4gpcarehr: w4 hours/year R provided informal care to parent | Cont  |
|      |              |  |       |
| 1    | S1GPCAREHR   | s1gpcarehr: w1 hours/year S provided informal care to parent | Cont  |
| 2    | S2GPCAREHR   | s2gpcarehr: w2 hours/year S provided informal care to parent | Cont  |
| 3    | S3GPCAREHR   | s3gpcarehr: w3 hours/year S provided informal care to parent | Cont  |
| 4    | S4GPCAREHR   | s4gpcarehr: w4 hours/year S provided informal care to parent | Cont  |

## Descriptive Statistics

| Variable     | N     | Mean   | Std Dev | Minimum | Maximum |
|--------------|-------|--------|---------|---------|---------|
| H1GCAANY     | 15596 | 0.45   | 0.50    | 0.00    | 1.00    |
| H2GCAANY     | 13986 | 0.40   | 0.49    | 0.00    | 1.00    |
| H3GCAANY     | 15672 | 0.44   | 0.50    | 0.00    | 1.00    |
| H4GCAANY     | 14876 | 0.46   | 0.50    | 0.00    | 1.00    |
| H5GCAANY     | 17014 | 0.47   | 0.50    | 0.00    | 1.00    |
|              |       |        |         |         |         |
| H1GCCARE_M   | 14892 | 0.44   | 0.50    | 0.00    | 1.00    |
| H2GCCARE_M   | 13445 | 0.38   | 0.49    | 0.00    | 1.00    |
| H3GCCARE_M   | 14932 | 0.41   | 0.49    | 0.00    | 1.00    |
| H4GCCARE_M   | 14261 | 0.44   | 0.50    | 0.00    | 1.00    |
| H5GCCARE_M   | 15572 | 0.46   | 0.50    | 0.00    | 1.00    |
|              |       |        |         |         |         |
| H1GCCAREHR_M | 14400 | 738.87 | 1454.81 | 0.00    | 8760.00 |
| H2GCCAREHR_M | 13000 | 537.09 | 1166.73 | 0.00    | 8760.00 |

|              |       |        |         |      |         |
|--------------|-------|--------|---------|------|---------|
| H3GCCAREHR_M | 14703 | 569.62 | 1355.70 | 0.00 | 8760.00 |
| H4GCCAREHR_M | 14132 | 497.51 | 1104.17 | 0.00 | 8760.00 |
| H5GCCAREHR_M | 15329 | 596.36 | 1228.70 | 0.00 | 8760.00 |
| R1GPCARE     | 4723  | 0.13   | 0.33    | 0.00 | 1.00    |
| R2GPCARE     | 3790  | 0.14   | 0.35    | 0.00 | 1.00    |
| R3GPCARE     | 4625  | 0.19   | 0.39    | 0.00 | 1.00    |
| R4GPCARE     | 3739  | 0.21   | 0.41    | 0.00 | 1.00    |
| R5GPCARE     | 5172  | 0.27   | 0.44    | 0.00 | 1.00    |
| S1GPCARE     | 3856  | 0.12   | 0.32    | 0.00 | 1.00    |
| S2GPCARE     | 3073  | 0.13   | 0.34    | 0.00 | 1.00    |
| S3GPCARE     | 3495  | 0.18   | 0.39    | 0.00 | 1.00    |
| S4GPCARE     | 2797  | 0.20   | 0.40    | 0.00 | 1.00    |
| S5GPCARE     | 1660  | 0.28   | 0.45    | 0.00 | 1.00    |
| R1GPCAREHR   | 4702  | 177.19 | 825.73  | 0.00 | 8760.00 |
| R2GPCAREHR   | 3754  | 198.00 | 910.68  | 0.00 | 8760.00 |
| R3GPCAREHR   | 4613  | 341.13 | 1283.24 | 0.00 | 8760.00 |
| R4GPCAREHR   | 3740  | 306.29 | 1015.72 | 0.00 | 8760.00 |
| S1GPCAREHR   | 3845  | 153.34 | 774.96  | 0.00 | 8760.00 |
| S2GPCAREHR   | 3046  | 168.78 | 826.23  | 0.00 | 8760.00 |
| S3GPCAREHR   | 3489  | 285.19 | 1163.75 | 0.00 | 8760.00 |
| S4GPCAREHR   | 2798  | 258.80 | 916.46  | 0.00 | 8760.00 |

## Categorical Variable Codes

| Value-----                    | H1GCAANY | H2GCAANY | H3GCAANY | H4GCAANY | H5GCAANY |
|-------------------------------|----------|----------|----------|----------|----------|
| .d:DK                         | 14       | 2        | 4        | 8        | 44       |
| .m:Missing                    | 26       | 22       | 14       | 34       | 14       |
| .p:Proxy interview, not asked | 44       | 43       | 17       | 17       | 34       |
| .r:Refuse                     | 12       | 3        | 16       | 5        | 8        |
| 0.No                          | 8585     | 8383     | 8852     | 8026     | 8968     |
| 1.Yes                         | 7011     | 5603     | 6820     | 6850     | 8046     |

| Value-----            | H1GCCARE_M | H2GCCARE_M | H3GCCARE_M | H4GCCARE_M | H5GCCARE_M |
|-----------------------|------------|------------|------------|------------|------------|
| .c:no living children | 743        | 589        | 744        | 629        | 1473       |
| .d:DK                 | 19         | 2          | 6          | 9          | 39         |
| .m:Missing            | 32         | 25         | 16         | 34         | 20         |
| .r:Refuse             | 20         | 3          | 25         | 12         | 10         |
| 0.No                  | 8338       | 8317       | 8799       | 8012       | 8373       |
| 1.Yes                 | 6554       | 5128       | 6133       | 6249       | 7199       |

| Value-----                    | R1GPCARE | R2GPCARE | R3GPCARE | R4GPCARE | R5GPCARE |
|-------------------------------|----------|----------|----------|----------|----------|
| .d:DK                         | 22       | 10       | 5        | 163      | 175      |
| .f:no living parents          | 9361     | 8703     | 10651    | 10698    | 11460    |
| .m:Missing                    | 33       | 22       | 185      | 36       | 16       |
| .p:Proxy interview, not asked | 1032     | 1178     | 255      | 136      | 267      |
| .r:Refuse                     | 15       | 1        | 2        | 7        | 24       |
| 0.No                          | 4124     | 3252     | 3740     | 2938     | 3775     |
| 1.Yes                         | 599      | 538      | 885      | 801      | 1397     |

| Value-----                    | S1GPCARE | S2GPCARE | S3GPCARE | S4GPCARE | S5GPCARE |
|-------------------------------|----------|----------|----------|----------|----------|
| .d:DK                         | 19       | 8        | 3        | 106      | 51       |
| .f:no living parents          | 6090     | 5655     | 6767     | 6642     | 5639     |
| .m:Missing                    | 12       | 6        | 132      | 8        | 2        |
| .p:Proxy interview, not asked | 660      | 821      | 194      | 95       | 99       |
| .r:Refuse                     | 11       | 1        | 1        | 4        | 10       |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| 0.No                          | 3412     | 2661     | 2861     | 2231     | 1188     |
| 1.Yes                         | 444      | 412      | 634      | 566      | 472      |

## How Constructed

HwGCAANY indicates whether the respondent and their spouse provide any informal care to their children, grandchildren, or parents. HwGCAANY is coded as 0 if they did not provide any informal care or if the respondent and their spouse have no living parents or children, and is coded as 1 if they provided informal care. HwGCAANY is assigned special missing value .p if these questions were skipped because the interview was completed by proxy. Don't know, refused, or other missing responses are assigned special missing values .d, .r, .m, respectively. HwGCAANY is assigned plain missing (.) if the respondent and their spouse did not participate in the current wave.

HwGCCARE\_M indicates whether the respondent and their spouse spent at least one hour a week helping their children, children-in-law, or grandchildren in the last two years. HwGCCARE\_M is coded as 0 if they did not spend at least one hour a week helping their children, and is coded as 1 if they did spend at least one hour a week helping their children. HwGCCARE\_M is assigned special missing value .c if the respondent and their spouse have no living children. Don't know, refused, or other missing responses are assigned special missing values .d, .r, .m, respectively. HwGCCARE\_M is assigned plain missing (.) if the respondent and their spouse did not participate in the current wave.

HwGCCAREHR\_M indicates the number of hours per year the respondent and their spouse spent helping their children, children-in-law, or grandchildren in the last two years. Respondents are able to report the total number of hours in days, weeks, months, or years, the responses to which have been converted to the number of hours in a year. HwGCCAREHR\_M is assigned a value of 0 if the respondent and their spouse did not spend at least one hour a week providing help. HwGCCAREHR\_M is assigned special missing value .i if the respondent reports providing more than 24 hours per day of help. HwGCCAREHR\_M is assigned special missing value .c if the respondent and their spouse have no living children. Don't know, refused, or other missing responses are assigned special missing values .d, .r, .m, respectively. HwGCCAREHR\_M is assigned plain missing (.) if the respondent and their spouse did not participate in the current wave.

RwGPCARE indicates whether the respondent or their spouse spent at least one hour a week helping the respondent's parents with basic personal activities, excluding help with household chores, errands, and transportation. RwGPCARE is coded as 0 if they did not help their parents at all or did so less than one hour a week, and is coded as 1 if they did help their parents at least one hour a week or about 100 hours in the last two years. RwGPCARE is assigned special missing value .f if the respondent has no living parents. RwGPCARE is assigned special missing value .p if this question was skipped because the interview was completed by proxy. Don't know, refused, or other missing responses are assigned special missing values .d, .r, .m, respectively. RwGPCARE is assigned plain missing (.) if the respondent did not participate in the current wave.

RwGPCAREHR indicates the number of hours the respondent or their spouse spent helping the respondent's parents with basic personal activities because of a health problem in the last two years. Respondents are able to report the total number of hours in days, weeks, months, or years, the responses to which have been converted to the number of hours in a year. HwGPCAREHR is assigned a value of 0 if the respondent or their spouse did not spend at least one hour a week providing help. RwGPCAREHR is assigned special missing value .i if the respondent reports providing more than 24 hours per day of help. HwGPCAREHR is assigned special missing value .f if the respondent has no living parents. RwGPCAREHR is assigned special missing value .p if this question was skipped because the interview was completed by proxy. Don't know, refused, or other missing responses are assigned special missing values .d, .r, .m, respectively. HwGPCAREHR is assigned plain missing (.) if the respondent did not participate in the current wave.

SwGPCARE and SwGPCAREHR indicate whether the respondent's current wave's spouse or the respondent spent at least one hour a week helping the respondent's spouse's parents with basic personal activities, and the number of hours provided per year, and their values are taken from RwGPCARE and RwGPCAREHR. In addition to the special missing values employed by RwGPCARE and RwGPCAREHR, SwGPCARE and SwGPCAREHR employ two additional special missing values, .u and .v. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Respondents in Wave 5 are not asked how many hours of help they provided to their parents.

## Differences with the RAND HRS/Harmonized HRS

The HRS asks whether the respondent helps take care of their grandchildren, which is available as HwGKSIT in the Harmonized HRS and through several additional variables in the RAND HRS Family. The MHAS asks whether the respondent cares for their children or grandchildren, which is available in HwGCCARE\_M in the



Harmonized MHAS. In the HRS, family respondents are asked about personal help and help with chores provided to the respondent's and/or their spouse's parents, whereas in the MHAS, individual respondents are asked about personal help provided to their parents. As such, HwGPCARE in the Harmonized HRS includes personal help and chore help given to parents from the respondent and/or their spouse, while RwgPCARE in the Harmonized MHAS includes personal help given to parents from the respondent. There are additional variables related to care given to parents available in the RAND HRS Family.

## MHAS Variables Used

### Wave 1:

|       |                              |
|-------|------------------------------|
| F33   | parents alive                |
| F37   | assisted parents             |
| F38   | assisted parents 100 hours   |
| F40_1 | times assistance to parents  |
| F40_2 | period assistance to parents |
| G11   | assistance to children       |
| G13_1 | hours assisting children     |
| G13_2 | period assisting children    |
| G2    | alive children               |

### Wave 2:

|       |   |
|-------|---|
| F39   | interviewer: how many parents are alive                 |
| F43   | help to parents with to perform basics                  |
| F44   | help was at least an hour a week                        |
| F46_1 | hours spent helping them - number of hours              |
| F46_2 | hours spent helping them - period                       |
| G10   | spent 1 hr a week helping (grand)children               |
| G12_1 | how many hours spent helping per period - number of hou |
| G12_2 | how many hours spent helping per period - per period    |
| G1B   | status of children                                      |

### Wave 3:

|          |  |
|----------|--|
| F10A_12  | Last interview:Was respondent's father living            |
| F12_12   | Currently:Is respondent's father living                  |
| F1A_12   | Last interview:Was respondent's mother living            |
| F3_12    | Currently:Is respondent's mother living                  |
| F43_12   | Last 2 years:Did respondent/spouse provide...assistance  |
| F44_12   | Last 2 years:Did respondent assist parent(s) for >1 hou  |
| F46_1_12 | Number of hours respondent spent helping his/her parent  |
| F46_2_12 | Period to report spending time helping his/her parent(s) |
| G10_12   | Last 2 years:Respondent/spouse spent at least 1 hour...  |
| G12_1_12 | Respondent's total hours spent...children/grandchildren  |
| G12_2_12 | Period respondent reported assisting children/grandchil  |
| G2_12    | Does respondent/spouse have living children              |

### Wave 4:

|          |  |
|----------|--|
| F12_15   | Is respondent's father alive                             |
| F3_15    | Is respondent's mother alive                             |
| F43_15   | In the last 2 years:Did respondent/spouse provide...ass  |
| F44_15   | Last 2 years:Did respondent assist parent(s) for >1 hou  |
| F46_1_15 | Number of hours respondent spent helping his/her parent  |
| F46_2_15 | Period to report spending time helping his/her parent(s) |
| G10_15   | Last 2 years:Respondent/spouse spent at least 1 hour...  |
| G12_1_15 | Respondent's total hours spent...children/grandchildren  |
| G12_2_15 | Period respondent reported assisting children/grandchil  |
| G2_15    | Does respondent/spouse have living children              |

### Wave 5:

|          |   |
|----------|---|
| F12_18   | Is R's father alive                                     |
| F3_18    | Is R's mother alive                                     |
| F43_18   | In the last 2 years:Did R/spouse provide...assistance f |
| F44_18   | Last 2 years:Did R assist parent(s) for 1+ hours/week o |
| G10_18   | Last 2 years:Respondent/spouse spent at least 1 hour... |
| G12_1_18 | Respondent's total hours spent...children/grandchildren |
| G12_2_18 | Period respondent reported assisting children/grandchil |
| G2_18    | Does respondent/spouse have living children             |

|   |
|---|
| <b>Provides Informal Care for Sick or Disabled Adults</b> |
|---|

| Wave | Variable     | Label  | Type  |
|------|--------------|--|-------|
| 3    | R3GCARESCK   | r3gcaresck: w3 R cares for sick or disabled adult            | Categ |
| 4    | R4GCARESCK   | r4gcaresck: w4 R cares for sick or disabled adult            | Categ |
| 5    | R5GCARESCK   | r5gcaresck: w5 R cares for sick or disabled adult            | Categ |
| 3    | S3GCARESCK   | s3gcaresck: w3 S cares for sick of disabled adult            | Categ |
| 4    | S4GCARESCK   | s4gcaresck: w4 S cares for sick of disabled adult            | Categ |
| 5    | S5GCARESCK   | s5gcaresck: w5 S cares for sick of disabled adult            | Categ |
| 3    | R3GCARESKD_M | r3gcaresckd_m: w3 R frequency cares for sick or disabled adu | Categ |
| 4    | R4GCARESKD_M | r4gcaresckd_m: w4 R frequency cares for sick or disabled adu | Categ |
| 5    | R5GCARESKD_M | r5gcaresckd_m: w5 R frequency cares for sick or disabled adu | Categ |
| 3    | S3GCARESKD_M | s3gcaresckd_m: w3 S frequency cares for sick or disabled adu | Categ |
| 4    | S4GCARESKD_M | s4gcaresckd_m: w4 S frequency cares for sick or disabled adu | Categ |
| 5    | S5GCARESKD_M | s5gcaresckd_m: w5 S frequency cares for sick or disabled adu | Categ |

### Descriptive Statistics

| Variable     | N     | Mean | Std Dev | Minimum | Maximum |
|--------------|-------|------|---------|---------|---------|
| R3GCARESCK   | 14439 | 0.18 | 0.38    | 0.00    | 1.00    |
| R4GCARESCK   | 13825 | 0.19 | 0.39    | 0.00    | 1.00    |
| R5GCARESCK   | 15777 | 0.18 | 0.39    | 0.00    | 1.00    |
| S3GCARESCK   | 9858  | 0.18 | 0.39    | 0.00    | 1.00    |
| S4GCARESCK   | 9175  | 0.20 | 0.40    | 0.00    | 1.00    |
| S5GCARESCK   | 6898  | 0.18 | 0.38    | 0.00    | 1.00    |
| R3GCARESKD_M | 14413 | 7.88 | 2.60    | 1.00    | 9.00    |
| R4GCARESKD_M | 13813 | 7.73 | 2.73    | 1.00    | 9.00    |
| R5GCARESKD_M | 15764 | 7.77 | 2.72    | 1.00    | 9.00    |
| S3GCARESKD_M | 9841  | 7.87 | 2.61    | 1.00    | 9.00    |
| S4GCARESKD_M | 9167  | 7.72 | 2.73    | 1.00    | 9.00    |
| S5GCARESKD_M | 6893  | 7.78 | 2.72    | 1.00    | 9.00    |

### Categorical Variable Codes

| Value-----                    | R3GCARESCK   | R4GCARESCK   | R5GCARESCK   |
|-------------------------------|--------------|--------------|--------------|
| .d:DK                         | 2            | 1            | 2            |
| .m:Missing                    |              | 23           |              |
| .p:Proxy interview, not asked | 1275         | 929          | 1328         |
| .r:Refuse                     | 7            | 1            | 7            |
| 0.No                          | 11832        | 11166        | 12881        |
| 1.Yes                         | 2607         | 2659         | 2896         |
| Value-----                    | S3GCARESCK   | S4GCARESCK   | S5GCARESCK   |
| .d:DK                         | 2            | 1            | 1            |
| .m:Missing                    |              | 5            |              |
| .p:Proxy interview, not asked | 726          | 470          | 560          |
| .r:Refuse                     | 6            | 1            | 2            |
| .u:Unmar                      | 4782         | 4847         | 5227         |
| .v:SP NR                      | 349          | 280          | 501          |
| 0.No                          | 8050         | 7367         | 5651         |
| 1.Yes                         | 1808         | 1808         | 1247         |
| Value-----                    | R3GCARESKD_M | R4GCARESKD_M | R5GCARESKD_M |
| .d:DK                         | 3            | 1            | 2            |
| .i:Invalid                    | 25           | 12           | 13           |
| .m:Missing                    |              | 23           |              |

|                               |              |              |              |
|-------------------------------|--------------|--------------|--------------|
| .p:Proxy interview, not asked | 1275         | 929          | 1328         |
| .r:Refuse                     | 7            | 1            | 7            |
| 1.Almost every day            | 1435         | 1504         | 1702         |
| 2.4 or more times a week      | 98           | 135          | 170          |
| 3.2 or 3 times a week         | 302          | 354          | 375          |
| 4.Once a week                 | 166          | 202          | 229          |
| 5.4 or more times a month     | 141          | 182          | 130          |
| 6.2 or 3 times a month        | 96           | 131          | 125          |
| 7.Once a month                | 78           | 139          | 152          |
| 8.Almost Never, sporadic      | 265          |              |              |
| 9.Never                       | 11832        | 11166        | 12881        |
| Value-----                    | S3GCARESKD_M | S4GCARESKD_M | S5GCARESKD_M |
| .d:DK                         | 2            | 1            | 1            |
| .i:Invalid                    | 17           | 8            | 5            |
| .m:Missing                    |              | 5            |              |
| .p:Proxy interview, not asked | 726          | 470          | 560          |
| .r:Refuse                     | 6            | 1            | 2            |
| .u:Unmar                      | 4782         | 4847         | 5227         |
| .v:SP NR                      | 349          | 280          | 501          |
| 1.Almost every day            | 986          | 984          | 764          |
| 2.4 or more times a week      | 62           | 86           | 69           |
| 3.2 or 3 times a week         | 227          | 259          | 142          |
| 4.Once a week                 | 115          | 150          | 91           |
| 5.4 or more times a month     | 100          | 124          | 59           |
| 6.2 or 3 times a month        | 68           | 99           | 56           |
| 7.Once a month                | 55           | 98           | 61           |
| 8.Almost Never, sporadic      | 178          |              |              |
| 9.Never                       | 8050         | 7367         | 5651         |

## How Constructed

RwGCARESK indicates whether the respondent has cared for a sick or disabled adult in the past year. RwGCARESK is coded as 1 if the respondent did provide care for a sick or disabled adult in the past year, while a 0 indicates they did not. RwGCARESK is assigned special missing value .p if this question is not asked because this section was answered by proxy. Don't know, refused, or other missing responses are assigned special missing values .d, .r, and .m, respectively. RwGCARESK is set to plain missing (.) for respondents who did not participate in the current wave.

RwGCARESKD\_M indicates the frequency with which the respondent cared for a sick or disabled adult in the past year. If the respondent reports caring for a sick or disabled adult, then they are asked to provide the number of times they did so either per week or per month. RwGCARESK is coded as follows: 1.Almost every day, 2.4 or more times a week, 3.2 or 3 times a week, 4.Once a week, 5.4 or more times a month, 6.2 or 3 times a month, 7.Once a month, 8.Almost Never, sporadic, 9.Never. RwGCARESKD\_M is assigned special missing value .p if this question is not asked because this section was answered by proxy. RwGCARESKD\_M is assigned special missing value .i to indicate inconsistent frequency, if the respondent reports caring for a sick or disabled adult more than 21 times per week or more than 81 times per month (that is more than 3 times per day). Don't know, refused, or other missing responses are assigned special missing values .d, .r, and .m, respectively. RwGCARESKD\_M is set to plain missing (.) for respondents who did not participate in the current wave.

SwGCARESK and SwGCARESKD\_M indicate whether and how frequently the respondent's current wave's spouse cared for a sick or disabled adult, and their values are taken from RwGCARESK and RwGCARESKD\_M. In addition to the special missing codes employed by RwGCARESK and RwGCARESKD\_M, SwGCARESK and SwGCARESKD\_M employ two additional special missing codes. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

This question is asked starting in Wave 3. In Wave 3, there is a code to indicate that the respondent cared for a sick or disabled adult sporadically in the past year. Starting in Wave 4, this code is no longer present.

## Differences with the RAND HRS/Harmonized HRS

In the HRS, this question is asked in the self-completion questionnaire and references the past month, so

RwGCARESK in the Harmonized HRS uses a special missing code to indicate whether the respondent did not return their self-completion questionnaire. In the MHAS, this question is asked in the core interview but not to proxy respondents and references the past year, so RwGCARESK in the Harmonized MHAS uses a special missing code to indicate whether the interview was by proxy. Please keep in mind the differences in time frame when comparing these variables.

The frequency of care provided to sick or disabled adults is different between the two surveys. As such, the Harmonized HRS uses the variable name RwGCARESKD\_H to indicate the frequency of: 1.daily, 2.several times a week, 3.once a week, 4.several times a month, 5.at least once a month, 6.not in the last month/never. The Harmonized MHAS, on the other hand, uses the variable name RwGCARESKD\_M to indicate the frequency of: 1.Almost every day, 2.4 or more times a week, 3.2 or 3 times a week, 4.Once a week, 5.4 or more times a month, 6.2 or 3 times a month, 7.Once a month, 8.Almost Never, sporadic, 9.Never.

MHAS Variables Used

Wave 3:

|          |   |
|----------|---|
| D34A1_12 | Does respondent care for a sick/disabled adult            |
| D34A2_12 | Respondent's frequency caring for a sick/disabled adult   |
| D34A3_12 | Respondent's time period caring for a sick/disabled adult |

Wave 4:

|          |  |
|----------|--|
| D34A1_15 | Does respondent care for a sick or disabled adult            |
| D34A2_15 | Respondent's frequency caring for a sick or disabled adult   |
| D34A3_15 | Respondent's time period caring for a sick or disabled adult |

Wave 5:

|          |   |
|----------|---|
| D34A1_18 | Does R care for a sick or disabled adult            |
| D34A2_18 | R's frequency caring for a sick or disabled adult   |
| D34A3_18 | R's time period caring for a sick or disabled adult |

**Section M: Stress**

|                               |
|-------------------------------|
| <b>Social Support: Spouse</b> |
|-------------------------------|

| Wave | Variable       | Label  | Type  |
|------|----------------|--|-------|
| 2    | R2SUSTDFE_M    | r2sustdfe_m: w2 R Thinks spouse understands the way they fee | Categ |
| 3    | R3SUSTDFE_M    | r3sustdfe_m: w3 R Thinks spouse understands the way they fee | Categ |
| 2    | S2SUSTDFE_M    | s2sustdfe_m: w2 S Thinks spouse understands the way they fee | Categ |
| 3    | S3SUSTDFE_M    | s3sustdfe_m: w3 S Thinks spouse understands the way they fee | Categ |
| 2    | R2SRELY_M      | r2srely_m: w2 R Can rely on spouse for a serious problem     | Categ |
| 3    | R3SRELY_M      | r3srely_m: w3 R Can rely on spouse for a serious problem     | Categ |
| 2    | S2SRELY_M      | s2srely_m: w2 S can rely on spouse for a serious problem     | Categ |
| 3    | S3SRELY_M      | s3srely_m: w3 S Can rely on spouse for a serious problem     | Categ |
| 2    | R2SOPENUP_M    | r2sopenup_m: w2 R can open up their worries to spouse        | Categ |
| 3    | R3SOPENUP_M    | r3sopenup_m: w3 R Can open up their worries to spouse        | Categ |
| 2    | S2SOPENUP_M    | s2sopenup_m: w2 S can open up their worries to spouse        | Categ |
| 3    | S3SOPENUP_M    | s3sopenup_m: w3 S Can open up their worries to spouse        | Categ |
| 2    | R2SLETDOWN_M   | r2sletdow_m: w2 Spouse let R down when counting on them      | Categ |
| 3    | R3SLETDOWN_M   | r3sletdow_m: w3 Spouse let R down when counting on them      | Categ |
| 2    | S2SLETDOWN_M   | s2sletdow_m: w2 Spouse let S down when counting on them      | Categ |
| 3    | S3SLETDOWN_M   | s3sletdow_m: w3 Spouse let S down when counting on them      | Categ |
| 2    | R2SSUPPORT4_M  | r2ssupport4_m: w2 R's spouse support summary mean score      | Cont  |
| 3    | R3SSUPPORT4_M  | r3ssupport4_m: w3 R's spouse support summary mean score      | Cont  |
| 2    | S2SSUPPORT4_M  | s2ssupport4_m: w2 S's spouse support summary mean score      | Cont  |
| 3    | S3SSUPPORT4_M  | s3ssupport4_m: w3 S's spouse support summary mean score      | Cont  |
| 2    | R2SSUPPORT4M_M | r2ssupport4m_m: w2 Missings in R's spouse support summary me | Cont  |
| 3    | R3SSUPPORT4M_M | r3ssupport4m_m: w3 Missings in R's spouse support summary me | Cont  |
| 2    | S2SSUPPORT4M_M | s2ssupport4m_m: w2 Missings in S's spouse support summary me | Cont  |
| 3    | S3SSUPPORT4M_M | s3ssupport4m_m: w3 Missings in S's spouse support summary me | Cont  |

### Descriptive Statistics

| Variable    | N     | Mean | Std Dev | Minimum | Maximum |
|-------------|-------|------|---------|---------|---------|
| R2SUSTDFE_M | 8813  | 1.35 | 0.58    | 1.00    | 3.00    |
| R3SUSTDFE_M | 10150 | 1.35 | 0.58    | 1.00    | 3.00    |
| S2SUSTDFE_M | 8691  | 1.35 | 0.58    | 1.00    | 3.00    |
| S3SUSTDFE_M | 9813  | 1.34 | 0.58    | 1.00    | 3.00    |
| R2SRELY_M   | 8820  | 1.25 | 0.54    | 1.00    | 3.00    |
| R3SRELY_M   | 10162 | 1.24 | 0.52    | 1.00    | 3.00    |
| S2SRELY_M   | 8698  | 1.25 | 0.54    | 1.00    | 3.00    |
| S3SRELY_M   | 9824  | 1.23 | 0.52    | 1.00    | 3.00    |
| R2SOPENUP_M | 8823  | 1.32 | 0.59    | 1.00    | 3.00    |
| R3SOPENUP_M | 10158 | 1.32 | 0.58    | 1.00    | 3.00    |
| S2SOPENUP_M | 8700  | 1.31 | 0.59    | 1.00    | 3.00    |
| S3SOPENUP_M | 9821  | 1.31 | 0.58    | 1.00    | 3.00    |

|                |       |      |      |      |      |
|----------------|-------|------|------|------|------|
| R2SLETDOW_M    | 8731  | 2.49 | 0.72 | 1.00 | 3.00 |
| R3SLETDOW_M    | 10095 | 2.31 | 0.81 | 1.00 | 3.00 |
| S2SLETDOW_M    | 8609  | 2.49 | 0.72 | 1.00 | 3.00 |
| S3SLETDOW_M    | 9761  | 2.31 | 0.81 | 1.00 | 3.00 |
| R2SSUPPORT4_M  | 8839  | 1.36 | 0.50 | 1.00 | 3.00 |
| R3SSUPPORT4_M  | 10168 | 1.40 | 0.47 | 1.00 | 3.00 |
| S2SSUPPORT4_M  | 8715  | 1.36 | 0.50 | 1.00 | 3.00 |
| S3SSUPPORT4_M  | 9830  | 1.39 | 0.47 | 1.00 | 3.00 |
| R2SSUPPORT4M_M | 13704 | 1.43 | 1.91 | 0.00 | 4.00 |
| R3SSUPPORT4M_M | 15723 | 1.42 | 1.91 | 0.00 | 4.00 |
| S2SSUPPORT4M_M | 9564  | 0.37 | 1.14 | 0.00 | 4.00 |
| S3SSUPPORT4M_M | 10592 | 0.30 | 1.04 | 0.00 | 4.00 |

### Categorical Variable Codes

| Value-----                    | R2SUSTDFE_M | R3SUSTDFE_M |
|-------------------------------|-------------|-------------|
| .d:DK                         | 30          | 22          |
| .m:Missing                    | 3           |             |
| .n:Not married/coupled        | 3659        | 4813        |
| .p:Proxy interview, not asked | 1178        | 727         |
| .r:Refuse                     | 21          | 11          |
| 1.A lot                       | 6208        | 7146        |
| 2.Little                      | 2110        | 2452        |
| 3.Not at all                  | 495         | 552         |

| Value-----                    | S2SUSTDFE_M | S3SUSTDFE_M |
|-------------------------------|-------------|-------------|
| .d:DK                         | 29          | 21          |
| .m:Missing                    | 2           |             |
| .n:Not married/coupled        | 2           | 31          |
| .p:Proxy interview, not asked | 821         | 721         |
| .r:Refuse                     | 19          | 6           |
| .u:Unmar                      | 4009        | 4782        |
| .v:SP NR                      | 131         | 349         |
| 1.A lot                       | 6138        | 6947        |
| 2.Little                      | 2067        | 2347        |
| 3.Not at all                  | 486         | 519         |

| Value-----                    | R2SRELY_M | R3SRELY_M |
|-------------------------------|-----------|-----------|
| .d:DK                         | 26        | 9         |
| .m:Missing                    | 3         |           |
| .n:Not married/coupled        | 3659      | 4813      |
| .p:Proxy interview, not asked | 1178      | 727       |
| .r:Refuse                     | 18        | 12        |
| 1.A lot                       | 7041      | 8206      |
| 2.Little                      | 1312      | 1483      |
| 3.Not at all                  | 467       | 473       |

| Value-----                    | S2SRELY_M | S3SRELY_M |
|-------------------------------|-----------|-----------|
| .d:DK                         | 26        | 8         |
| .m:Missing                    | 2         |           |
| .n:Not married/coupled        | 2         | 31        |
| .p:Proxy interview, not asked | 821       | 721       |
| .r:Refuse                     | 15        | 8         |
| .u:Unmar                      | 4009      | 4782      |
| .v:SP NR                      | 131       | 349       |
| 1.A lot                       | 6951      | 7962      |
| 2.Little                      | 1291      | 1420      |
| 3.Not at all                  | 456       | 442       |

| Value-----                    | R2SOPENUP_M | R3SOPENUP_M |
|-------------------------------|-------------|-------------|
| .d:DK                         | 23          | 11          |
| .m:Missing                    | 3           |             |
| .n:Not married/coupled        | 3659        | 4813        |
| .p:Proxy interview, not asked | 1178        | 727         |

|                               |  |             |             |
|-------------------------------|--|-------------|-------------|
| .r:Refuse                     |  | 18          | 14          |
| 1.A lot                       |  | 6600        | 7541        |
| 2.Little                      |  | 1655        | 2001        |
| 3.Not at all                  |  | 568         | 616         |
| Value-----                    |  | S2SOPENUP_M | S3SOPENUP_M |
| .d:DK                         |  | 23          | 10          |
| .m:Missing                    |  | 2           |             |
| .n:Not married/coupled        |  | 2           | 31          |
| .p:Proxy interview, not asked |  | 821         | 721         |
| .r:Refuse                     |  | 16          | 9           |
| .u:Unmar                      |  | 4009        | 4782        |
| .v:SP NR                      |  | 131         | 349         |
| 1.A lot                       |  | 6523        | 7325        |
| 2.Little                      |  | 1621        | 1918        |
| 3.Not at all                  |  | 556         | 578         |
| Value-----                    |  | R2SLETDOW_M | R3SLETDOW_M |
| .d:DK                         |  | 92          | 63          |
| .m:Missing                    |  | 3           |             |
| .n:Not married/coupled        |  | 3659        | 4813        |
| .p:Proxy interview, not asked |  | 1178        | 727         |
| .r:Refuse                     |  | 41          | 25          |
| 1.A lot                       |  | 1200        | 2232        |
| 2.Little                      |  | 2051        | 2457        |
| 3.Not at all                  |  | 5480        | 5406        |
| Value-----                    |  | S2SLETDOW_M | S3SLETDOW_M |
| .d:DK                         |  | 91          | 60          |
| .m:Missing                    |  | 2           |             |
| .n:Not married/coupled        |  | 2           | 31          |
| .p:Proxy interview, not asked |  | 821         | 721         |
| .r:Refuse                     |  | 39          | 19          |
| .u:Unmar                      |  | 4009        | 4782        |
| .v:SP NR                      |  | 131         | 349         |
| 1.A lot                       |  | 1178        | 2163        |
| 2.Little                      |  | 2015        | 2375        |
| 3.Not at all                  |  | 5416        | 5223        |

## How Constructed

MHAS Waves 2 and 3 include four questions about spouse social support which are only asked if the respondent was presently married or in a consensual union and the interview was not by proxy.

RwSUSTDFE\_M indicates how much the respondent feels their spouse really understands the way they feel about things.

RwSRELY\_M indicates how much the respondent feels they can confide in their spouse if they have a serious problem.

RwSOPENUP\_M indicates how much the respondent feels their spouse would listen if they need to talk about their worries.

RwSLETDOW\_M indicates how much the respondent feels they would be disappointed when they are counting on their spouse.

RwSUSTDFE\_M, RwsRELY\_M, RwsOPENUP\_M and RwsLETDOW\_M are coded as follow: 1. a lot, 2. little and 3. not at all. Special missing .n is assigned if the respondent indicates they were not presently married or in a consensual union and are hence not asked these questions. Special missing .p is assigned if the interview is by proxy in which case these questions are not asked. Don't know, refused, or missing responses are assigned special missing values .d, .r, .m, respectively. Plain missing (.) is assigned for respondents who did not respond to the current wave.

SwsSUSTDFE\_M, SwsRELY\_M, SwsOPENUP\_M and SwsLETDOW\_M indicate how much the current wave's spouse agrees with statements about their spouse and are taken from the spouse's values to RwSUSTDFE\_M, RwsRELY\_M, RwsOPENUP\_M and RwsLETDOW\_M. In addition to the special missing codes used in RwsSUSTDFE\_M, RwsRELY\_M, RwsOPENUP\_M and RwsLETDOW\_M, SwsSUSTDFE\_M, SwsRELY\_M, SwsOPENUP\_M and SwsLETDOW\_M employ two other missing codes, .u and .v. A special missing value .u is used when the respondent does not report being coupled in



the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

RwSSUPPORT4\_M indicates the mean of the answers to four different spouse questions (RwSUSTDFE\_M, RwsRELY\_M, RwsOPENUP\_M and RwsLETDOW\_M) and can be used as a summary score. RwSSUPPORT4\_M is calculated for any respondent with at least one non-missing value for its four components. Since RwSSUPPORT4\_M indicates how much the respondents feel lack of support by their spouse, we reverse coded the values of RwsLETDOW\_M to make sure that higher scores indicate less support the respondent feels by their spouse. The coding of RwsSUSTDFE\_M, RwsRELY\_M and RwsOPENUP\_M did not change. RwSSUPPORT4M\_M counts the number of components with missing values in RwSSUPPORT4\_M, which could be between no missing components (0) and four missing components (4). Special missing .n is assigned if the respondent indicates they were not presently married or in a consensual union and are hence not asked these questions. Special missing .p is assigned if the interview is by proxy in which case these questions are not asked. Special missing value .d, .r, or .m is assigned if all four components of the summary score are don't know, refused or otherwise missing, respectively. Plain missing (.) is assigned for respondents who did not respond to the current wave.

SwSSUPPORT4 and SwSSUPPORT4M\_M indicate the mean summary score of the answer to four different spouse support questions and the count of any missing components for the current wave's spouse and are taken from the spouse's values to RwSSUPPORT4 and RwSSUPPORT4M\_M. In addition to the special missing codes used in RwSSUPPORT4\_M and RwSSUPPORT4M\_M, SwSSUPPORT4\_M and SwSSUPPORT4M\_M employs two other missing codes, .u and .v. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Questions about spouse's social support are only asked in MHAS Waves 2 and 3.

## Differences with the RAND HRS/Harmonized HRS

Unlike HRS, MHAS did not ask the following of the respondent:

1. how often they feel their spouse makes too many demands on them;
2. how much the respondent feels their spouse criticizes them;
3. how much the respondent feels their spouse gets on their nerves.

HRS uses a four-point response scale from "a lot" to "not at all", while MHAS uses a three-point response scale from "a lot" to "not at all."

Also, the following questions wording is slightly different between HRS and MHAS:

1. HRS asks "How much can you rely on them if you have a serious problem?" whereas MHAS asks "How much can you confide in him/her if you have a serious problem?"
2. HRS asks "How much can you open up to them if you need to talk about your worries?" whereas MHAS asks "How much does your spouse listen if you need to talk about your worries?"
3. HRS asks "How much do they let you down when you are counting on them?" whereas MHAS asks "How much does he/she disappoint you when you are you are counting on him/her?"

## MHAS Variables Used

Wave 2:

|     |                                  |
|-----|----------------------------------|
| D2  | marital status                   |
| D3A | spouse understands your feelings |
| D3B | confide in spouse                |
| D3C | spouse listens                   |
| D3D | spouse disappoints               |

Wave 3:

|       |                        |
|-------|------------------------|
| A3_12 | Current marital status |
|-------|------------------------|

---

|         |   |
|---------|---|
| AA10_12 | Respondent's current marital status                     |
| D20A_12 | Rate your spouse's understanding about your feelings    |
| D20B_12 | Rate your confidence level in your spouse regarding a s |
| D20C_12 | Rate your spouse's attention level when speaking to him |
| D20D_12 | Rate your level of disappointment in your spouse        |

|                                 |
|---------------------------------|
| <b>Social Support: Children</b> |
|---------------------------------|

| Wave | Variable       | Label  | Type  |
|------|----------------|--|-------|
| 2    | R2KUSTDFE_M    | r2kustdfe_m: w2 R Thinks children understand the way they fe | Categ |
| 3    | R3KUSTDFE_M    | r3kustdfe_m: w3 R Thinks children understand the way they fe | Categ |
| 2    | S2KUSTDFE_M    | s2kustdfe_m: w2 S Thinks children understand the way they fe | Categ |
| 3    | S3KUSTDFE_M    | s3kustdfe_m: w3 S Thinks children understand the way they fe | Categ |
| 2    | R2KRELY_M      | r2krely_m: w2 R Can rely on children for a serious problem   | Categ |
| 3    | R3KRELY_M      | r3krely_m: w3 R Can rely on children for a serious problem   | Categ |
| 2    | S2KRELY_M      | s2krely_m: w2 S Can rely on children for a serious problem   | Categ |
| 3    | S3KRELY_M      | s3krely_m: w3 S Can rely on children for a serious problem   | Categ |
| 2    | R2KOPENUP_M    | r2kopenup_m: w2 R Can open up their worries to children      | Categ |
| 3    | R3KOPENUP_M    | r3kopenup_m: w3 R Can open up their worries to children      | Categ |
| 2    | S2KOPENUP_M    | s2kopenup_m: w2 S Can open up their worries to children      | Categ |
| 3    | S3KOPENUP_M    | s3kopenup_m: w3 S Can open up their worries to children      | Categ |
| 2    | R2KLETDOW_M    | r2kletdow_m: w2 Children let R down when counting on them    | Categ |
| 3    | R3KLETDOW_M    | r3kletdow_m: w3 Children let R down when counting on them    | Categ |
| 2    | S2KLETDOW_M    | s2kletdow_m: w2 Children let S down when counting on them    | Categ |
| 3    | S3KLETDOW_M    | s3kletdow_m: w3 Children let S down when counting on them    | Categ |
| 2    | R2KSUPPORT4_M  | r2ksupport4_m: w2 R's Children support summary mean score    | Cont  |
| 3    | R3KSUPPORT4_M  | r3ksupport4_m: w3 R's children support summary mean score    | Cont  |
| 2    | S2KSUPPORT4_M  | s2ksupport4_m: w2 S's Children support summary mean score    | Cont  |
| 3    | S3KSUPPORT4_M  | s3ksupport4_m: w3 S's children support summary mean score    | Cont  |
| 2    | R2KSUPPORT4M_M | r2ksupport4m_m: w2 Missings in R's children support summary  | Cont  |
| 3    | R3KSUPPORT4M_M | r3ksupport4m_m: w3 Missings in R's children support summary  | Cont  |
| 2    | S2KSUPPORT4M_M | s2ksupport4m_m: w2 Missings in S's children support summary  | Cont  |
| 3    | S3KSUPPORT4M_M | s3ksupport4m_m: w3 Missings in S's children support summary  | Cont  |

### Descriptive Statistics

| Variable    | N     | Mean | Std Dev | Minimum | Maximum |
|-------------|-------|------|---------|---------|---------|
| R2KUSTDFE_M | 11865 | 1.31 | 0.54    | 1.00    | 3.00    |
| R3KUSTDFE_M | 13543 | 1.31 | 0.54    | 1.00    | 3.00    |
| S2KUSTDFE_M | 8507  | 1.27 | 0.51    | 1.00    | 3.00    |
| S3KUSTDFE_M | 9470  | 1.28 | 0.52    | 1.00    | 3.00    |
| R2KRELY_M   | 11867 | 1.24 | 0.51    | 1.00    | 3.00    |
| R3KRELY_M   | 13561 | 1.23 | 0.50    | 1.00    | 3.00    |
| S2KRELY_M   | 8510  | 1.21 | 0.48    | 1.00    | 3.00    |
| S3KRELY_M   | 9480  | 1.21 | 0.47    | 1.00    | 3.00    |
| R2KOPENUP_M | 11871 | 1.29 | 0.55    | 1.00    | 3.00    |
| R3KOPENUP_M | 13556 | 1.28 | 0.54    | 1.00    | 3.00    |
| S2KOPENUP_M | 8513  | 1.26 | 0.52    | 1.00    | 3.00    |
| S3KOPENUP_M | 9473  | 1.25 | 0.51    | 1.00    | 3.00    |

|                |       |      |      |      |      |
|----------------|-------|------|------|------|------|
| R2KLETDOW_M    | 11747 | 2.51 | 0.70 | 1.00 | 3.00 |
| R3KLETDOW_M    | 13489 | 2.33 | 0.80 | 1.00 | 3.00 |
| S2KLETDOW_M    | 8424  | 2.54 | 0.69 | 1.00 | 3.00 |
| S3KLETDOW_M    | 9433  | 2.35 | 0.80 | 1.00 | 3.00 |
| R2KSUPPORT4_M  | 11894 | 1.33 | 0.46 | 1.00 | 3.00 |
| R3KSUPPORT4_M  | 13580 | 1.37 | 0.45 | 1.00 | 3.00 |
| S2KSUPPORT4_M  | 8524  | 1.30 | 0.43 | 1.00 | 3.00 |
| S3KSUPPORT4_M  | 9489  | 1.35 | 0.42 | 1.00 | 3.00 |
| R2KSUPPORT4M_M | 13704 | 0.54 | 1.36 | 0.00 | 4.00 |
| R3KSUPPORT4M_M | 15723 | 0.56 | 1.37 | 0.00 | 4.00 |
| S2KSUPPORT4M_M | 9564  | 0.45 | 1.25 | 0.00 | 4.00 |
| S3KSUPPORT4M_M | 10592 | 0.43 | 1.22 | 0.00 | 4.00 |

### Categorical Variable Codes

| Value-----                    | R2KUSTDFE_M | R3KUSTDFE_M |
|-------------------------------|-------------|-------------|
| .d:DK                         | 58          | 57          |
| .m:Missing                    | 3           |             |
| .n:No children                | 584         | 920         |
| .p:Proxy interview, not asked | 1178        | 1169        |
| .r:Refuse                     | 16          | 34          |
| 1.A lot                       | 8688        | 9954        |
| 2.Little                      | 2721        | 3026        |
| 3.Not at all                  | 456         | 563         |

| Value-----                    | S2KUSTDFE_M | S3KUSTDFE_M |
|-------------------------------|-------------|-------------|
| .d:DK                         | 28          | 32          |
| .m:Missing                    | 2           |             |
| .n:No children                | 195         | 389         |
| .p:Proxy interview, not asked | 821         | 689         |
| .r:Refuse                     | 11          | 12          |
| .u:Unmar                      | 4009        | 4782        |
| .v:SP NR                      | 131         | 349         |
| 1.A lot                       | 6422        | 7159        |
| 2.Little                      | 1831        | 1992        |
| 3.Not at all                  | 254         | 319         |

| Value-----                    | R2KRELY_M | R3KRELY_M |
|-------------------------------|-----------|-----------|
| .d:DK                         | 55        | 41        |
| .m:Missing                    | 3         |           |
| .n:No children                | 584       | 920       |
| .p:Proxy interview, not asked | 1178      | 1169      |
| .r:Refuse                     | 17        | 32        |
| 1.A lot                       | 9471      | 10900     |
| 2.Little                      | 1925      | 2162      |
| 3.Not at all                  | 471       | 499       |

| Value-----                    | S2KRELY_M | S3KRELY_M |
|-------------------------------|-----------|-----------|
| .d:DK                         | 23        | 22        |
| .m:Missing                    | 2         |           |
| .n:No children                | 195       | 389       |
| .p:Proxy interview, not asked | 821       | 689       |
| .r:Refuse                     | 13        | 12        |
| .u:Unmar                      | 4009      | 4782      |
| .v:SP NR                      | 131       | 349       |
| 1.A lot                       | 6969      | 7760      |
| 2.Little                      | 1280      | 1441      |
| 3.Not at all                  | 261       | 279       |

| Value-----                    | R2KOPENUP_M | R3KOPENUP_M |
|-------------------------------|-------------|-------------|
| .d:DK                         | 52          | 40          |
| .m:Missing                    | 3           |             |
| .n:No children                | 584         | 920         |
| .p:Proxy interview, not asked | 1178        | 1169        |

|                               |  |             |             |
|-------------------------------|--|-------------|-------------|
| .r:Refuse                     |  | 16          | 38          |
| 1.A lot                       |  | 9010        | 10354       |
| 2.Little                      |  | 2286        | 2581        |
| 3.Not at all                  |  | 575         | 621         |
| Value-----                    |  | S2KOPENUP_M | S3KOPENUP_M |
| .d:DK                         |  | 21          | 22          |
| .m:Missing                    |  | 2           |             |
| .n:No children                |  | 195         | 389         |
| .p:Proxy interview, not asked |  | 821         | 689         |
| .r:Refuse                     |  | 12          | 19          |
| .u:Unmar                      |  | 4009        | 4782        |
| .v:SP NR                      |  | 131         | 349         |
| 1.A lot                       |  | 6621        | 7426        |
| 2.Little                      |  | 1579        | 1690        |
| 3.Not at all                  |  | 313         | 357         |
| Value-----                    |  | R2KLETDOW_M | R3KLETDOW_M |
| .d:DK                         |  | 94          | 103         |
| .m:Missing                    |  | 199         |             |
| .n:No children                |  | 458         | 920         |
| .p:Proxy interview, not asked |  | 1178        | 1169        |
| .r:Refuse                     |  | 28          | 42          |
| 1.A lot                       |  | 1449        | 2876        |
| 2.Little                      |  | 2900        | 3308        |
| 3.Not at all                  |  | 7398        | 7305        |
| Value-----                    |  | S2KLETDOW_M | S3KLETDOW_M |
| .d:DK                         |  | 94          | 60          |
| .m:Missing                    |  | 197         |             |
| .n:No children                |  |             | 389         |
| .p:Proxy interview, not asked |  | 821         | 689         |
| .r:Refuse                     |  | 28          | 21          |
| .u:Unmar                      |  | 4009        | 4782        |
| .v:SP NR                      |  | 131         | 349         |
| 1.A lot                       |  | 934         | 1941        |
| 2.Little                      |  | 2011        | 2261        |
| 3.Not at all                  |  | 5479        | 5231        |

## How Constructed

MHAS Waves 2 and 3 include four questions about children's social support which are only asked if the respondent has living children and the interview was not by proxy.

RwKUSTDFE\_M indicates how much the respondent feels their children really understand the way they feel about things.

RwKRELY\_M indicates how much the respondent feels they can confide in their children if they have a serious problem.

RwKOPENUP\_M indicates how much the respondent feels their children would listen if they need to talk about their worries.

RwKLETDOW\_M indicates how much the respondent feels they would be disappointed when they are counting on their children.

RwKUSTDFE\_M, RwKRELY\_M, RwKOPENUP\_M and RwKLETDOW\_M are coded as follow: 1. a lot, 2. little and 3. not at all. Special missing .n is assigned if the respondent indicates they did not have any children, hence the questions are not asked. Special missing .p is assigned if the interview is by proxy in which case these questions are not asked. Don't know, refused, or missing responses are assigned special missing values .d, .r, .m, respectively. Plain missing (.) is assigned for respondents who did not respond to the current wave.

SwKUSTDFE\_M, SwKRELY\_M, SwKOPENUP\_M and SwKLETDOW\_M indicate how much the current wave's spouse agrees with statements about their children and are taken from the spouse's values to RwKUSTDFE\_M, RwKRELY\_M, RwKOPENUP\_M and RwKLETDOW\_M. In addition to the special missing codes used in RwKUSTDFE\_M, RwKRELY\_M, RwKOPENUP\_M and RwKLETDOW\_M, SwKUSTDFE\_M, SwKRELY\_M, SwKOPENUP\_M and SwKLETDOW\_M employ two other missing codes, .u and .v. A special missing value .u is used when the respondent does not report being coupled in

the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

RwKSUPPORT4\_M indicates the mean of the answers to four different children questions (RwKUSTDFE\_M, RwKRELY\_M, RwKOPENUP\_M and RwKLETDOW\_M) and can be used as a summary score. RwKSUPPORT4\_M is calculated for any respondent with at least one non-missing value for its four components. Since RwKSUPPORT4\_M indicates how much the respondents feel lack of support by their children, we reverse coded the values of RwKLETDOW\_M to make sure that higher scores indicate less support the respondent feels by their children. The coding of RwKUSTDFE\_M, RwKRELY\_M and RwKOPENUP\_M did not change. RwKSUPPORT4M\_M counts the number of components with missing values in RwKSUPPORT4\_M, which could be between no missing components (0) and four missing components (4). Special missing .n is assigned if the respondent indicates they do not have living children, hence the questions are not asked. Special missing .p is assigned if the interview is by proxy in which case these questions are not asked. Special missing value .d, .r, or .m is assigned if all four components of the summary score are don't know, refused, or otherwise missing, respectively. Plain missing (.) is assigned for respondents who did not respond to the current wave.

SwKSUPPORT4\_M and SwKSUPPORT4M\_M indicate the mean summary score of the answers to four different children support questions and the count of any missing components for the current wave's spouse and are taken from the spouse's values to RwKSUPPORT4\_M and RwKSUPPORT4M\_M. In addition to the special missing codes used in RwKSUPPORT4\_M and RwKSUPPORT4M\_M, SwKSUPPORT4\_M and SwKSUPPORT4M\_M employs two other missing codes, .u and .v. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Questions about children's social support are only asked in MHAS Waves 2 and 3.

## Differences with the RAND HRS/Harmonized HRS

Unlike HRS, MHAS did not ask the following of the respondent:

1. how often they feel their children make too many demands on them;
2. how much the respondent feels their children criticize them;
3. how much the respondent feels their children get on their nerves.

HRS uses a four-point response scale from "a lot" to "not at all", MHAS uses a 3 point response scale from "a lot" to "not at all."

Also, the following questions wording is slightly different between HRS and MHAS:

1. HRS asks "How much can you rely on them if you have a serious problem?" whereas MHAS asks "How much can you confide in them if you have a serious problem?"
2. HRS asks "How much can you open up to them if you need to talk about your worries?" whereas MHAS asks "How much do they listen if you need to talk about your worries?"
3. HRS asks "How much do they let you down when you are counting on them?" whereas MHAS asks "How much do they disappoint you when you are talking to them?"

## MHAS Variables Used

Wave 2:

|     |                                   |
|-----|-----------------------------------|
| D4  | person has living children        |
| D5A | children understand your feelings |
| D5B | confide in children               |
| D5C | children listen                   |
| D5D | children disappoint               |

Wave 3:

|         |                                       |
|---------|---------------------------------------|
| A7_2_12 | Correct number of children born alive |
| A8_12   | Number of children currently living   |

|         |   |
|---------|---|
| AA19_12 | Respondent's number of children born alive              |
| AA20_12 | Of children born alive how many children currently livi |
| D22A_12 | Rate your children's understanding about your feelings  |
| D22B_12 | Rate your confidence level in your children regarding a |
| D22C_12 | Rate your children's attention level when speaking to t |
| D22D_12 | Rate your level of disappointment in your children      |

|                                |
|--------------------------------|
| <b>Social Support: Friends</b> |
|--------------------------------|

| Wave | Variable       | Label  | Type  |
|------|----------------|--|-------|
| 2    | R2FUSTDFE_M    | r2fustdfe_m: w2 R Thinks friends understand the way they fee | Categ |
| 3    | R3FUSTDFE_M    | r3fustdfe_m: w3 R Thinks friends understand the way they fee | Categ |
| 2    | S2FUSTDFE_M    | s2fustdfe_m: w2 S Thinks friends understand the way they fee | Categ |
| 3    | S3FUSTDFE_M    | s3fustdfe_m: w3 S Thinks friends understand the way they fee | Categ |
| 2    | R2FRELY_M      | r2frely_m: w2 R Can rely on friends for a serious problem    | Categ |
| 3    | R3FRELY_M      | r3frely_m: w3 R Can rely on friends for a serious problem    | Categ |
| 2    | S2FRELY_M      | s2frely_m: w2 S Can rely on friends for a serious problem    | Categ |
| 3    | S3FRELY_M      | s3frely_m: w3 S Can rely on friends for a serious problem    | Categ |
| 2    | R2FOPENUP_M    | r2fopenup_m: w2 R Can open up their worries to friends       | Categ |
| 3    | R3FOPENUP_M    | r3fopenup_m: w3 R Can open up their worries to friends       | Categ |
| 2    | S2FOPENUP_M    | s2fopenup_m: w2 S Can open up their worries to friends       | Categ |
| 3    | S3FOPENUP_M    | s3fopenup_m: w3 S Can open up their worries to friends       | Categ |
| 2    | R2FLETDOWN_M   | r2fletdow_m: w2 Friends let R down when counting on them     | Categ |
| 3    | R3FLETDOWN_M   | r3fletdow_m: w3 Friends let R down when counting on them     | Categ |
| 2    | S2FLETDOWN_M   | s2fletdow_m: w2 Friends let S down when counting on them     | Categ |
| 3    | S3FLETDOWN_M   | s3fletdow_m: w3 Friends let S down when counting on them     | Categ |
| 2    | R2FSUPPORT4_M  | r2fsupport4_m: w2 R's Friends support summary mean score     | Cont  |
| 3    | R3FSUPPORT4_M  | r3fsupport4_m: w3 R's Friends support summary mean score     | Cont  |
| 2    | S2FSUPPORT4_M  | s2fsupport4_m: w2 S's Friends support summary mean score     | Cont  |
| 3    | S3FSUPPORT4_M  | s3fsupport4_m: w3 S's Friends support summary mean score     | Cont  |
| 2    | R2FSUPPORT4M_M | r2fsupport4m_m: w2 Missings in R's friends support summary m | Cont  |
| 3    | R3FSUPPORT4M_M | r3fsupport4m_m: w3 Missings in R's friends support summary m | Cont  |
| 2    | S2FSUPPORT4M_M | s2fsupport4m_m: w2 Missings in S's friends support summary m | Cont  |
| 3    | S3FSUPPORT4M_M | s3fsupport4m_m: w3 Missings in S's friends support summary m | Cont  |

### Descriptive Statistics

| Variable    | N    | Mean | Std Dev | Minimum | Maximum |
|-------------|------|------|---------|---------|---------|
| R2FUSTDFE_M | 8869 | 1.56 | 0.65    | 1.00    | 3.00    |
| R3FUSTDFE_M | 8769 | 1.54 | 0.66    | 1.00    | 3.00    |
| S2FUSTDFE_M | 6241 | 1.59 | 0.65    | 1.00    | 3.00    |
| S3FUSTDFE_M | 6106 | 1.56 | 0.66    | 1.00    | 3.00    |
| R2FRELY_M   | 8887 | 1.64 | 0.70    | 1.00    | 3.00    |
| R3FRELY_M   | 8805 | 1.62 | 0.69    | 1.00    | 3.00    |
| S2FRELY_M   | 6257 | 1.66 | 0.70    | 1.00    | 3.00    |
| S3FRELY_M   | 6131 | 1.63 | 0.69    | 1.00    | 3.00    |
| R2FOPENUP_M | 8887 | 1.58 | 0.68    | 1.00    | 3.00    |
| R3FOPENUP_M | 8813 | 1.57 | 0.68    | 1.00    | 3.00    |
| S2FOPENUP_M | 6259 | 1.60 | 0.68    | 1.00    | 3.00    |
| S3FOPENUP_M | 6136 | 1.59 | 0.68    | 1.00    | 3.00    |



|                |       |      |      |      |      |
|----------------|-------|------|------|------|------|
| R2FLETDOW_M    | 8689  | 2.43 | 0.68 | 1.00 | 3.00 |
| R3FLETDOW_M    | 8760  | 2.36 | 0.72 | 1.00 | 3.00 |
| S2FLETDOW_M    | 6108  | 2.42 | 0.68 | 1.00 | 3.00 |
| S3FLETDOW_M    | 6103  | 2.36 | 0.72 | 1.00 | 3.00 |
| R2FSUPPORT4_M  | 8932  | 1.59 | 0.54 | 1.00 | 3.00 |
| R3FSUPPORT4_M  | 8836  | 1.59 | 0.50 | 1.00 | 3.00 |
| S2FSUPPORT4_M  | 6285  | 1.61 | 0.54 | 1.00 | 3.00 |
| S3FSUPPORT4_M  | 6151  | 1.61 | 0.50 | 1.00 | 3.00 |
| R2FSUPPORT4M_M | 13704 | 1.42 | 1.90 | 0.00 | 4.00 |
| R3FSUPPORT4M_M | 15723 | 1.76 | 1.98 | 0.00 | 4.00 |
| S2FSUPPORT4M_M | 9564  | 1.40 | 1.89 | 0.00 | 4.00 |
| S3FSUPPORT4M_M | 10592 | 1.69 | 1.97 | 0.00 | 4.00 |

### Categorical Variable Codes

| Value-----                    | R2FUSTDFE_M | R3FUSTDFE_M |
|-------------------------------|-------------|-------------|
| .d:DK                         | 119         | 106         |
| .m:Missing                    | 3           |             |
| .n:No friends                 | 3519        | 5554        |
| .p:Proxy interview, not asked | 1178        | 1275        |
| .r:Refuse                     | 16          | 19          |
| 1.A lot                       | 4700        | 4795        |
| 2.Little                      | 3366        | 3176        |
| 3.Not at all                  | 803         | 798         |

| Value-----                    | S2FUSTDFE_M | S3FUSTDFE_M |
|-------------------------------|-------------|-------------|
| .d:DK                         | 80          | 69          |
| .m:Missing                    | 2           |             |
| .n:No friends                 | 2408        | 3679        |
| .p:Proxy interview, not asked | 821         | 726         |
| .r:Refuse                     | 12          | 12          |
| .u:Unmar                      | 4009        | 4782        |
| .v:SP NR                      | 131         | 349         |
| 1.A lot                       | 3158        | 3251        |
| 2.Little                      | 2511        | 2291        |
| 3.Not at all                  | 572         | 564         |

| Value-----                    | R2FRELY_M | R3FRELY_M |
|-------------------------------|-----------|-----------|
| .d:DK                         | 100       | 71        |
| .m:Missing                    | 3         |           |
| .n:No friends                 | 3519      | 5554      |
| .p:Proxy interview, not asked | 1178      | 1275      |
| .r:Refuse                     | 17        | 18        |
| 1.A lot                       | 4374      | 4420      |
| 2.Little                      | 3360      | 3307      |
| 3.Not at all                  | 1153      | 1078      |

| Value-----                    | S2FRELY_M | S3FRELY_M |
|-------------------------------|-----------|-----------|
| .d:DK                         | 64        | 45        |
| .m:Missing                    | 2         |           |
| .n:No friends                 | 2408      | 3679      |
| .p:Proxy interview, not asked | 821       | 726       |
| .r:Refuse                     | 12        | 11        |
| .u:Unmar                      | 4009      | 4782      |
| .v:SP NR                      | 131       | 349       |
| 1.A lot                       | 2951      | 3002      |
| 2.Little                      | 2491      | 2379      |
| 3.Not at all                  | 815       | 750       |

| Value-----                    | R2FOPENUP_M | R3FOPENUP_M |
|-------------------------------|-------------|-------------|
| .d:DK                         | 101         | 65          |
| .m:Missing                    | 3           |             |
| .n:No friends                 | 3519        | 5554        |
| .p:Proxy interview, not asked | 1178        | 1275        |

|                               |  |             |             |
|-------------------------------|--|-------------|-------------|
| .r:Refuse                     |  | 16          | 16          |
| 1.A lot                       |  | 4714        | 4756        |
| 2.Little                      |  | 3207        | 3091        |
| 3.Not at all                  |  | 966         | 966         |
| Value-----                    |  | S2FOPENUP_M | S3FOPENUP_M |
| .d:DK                         |  | 62          | 41          |
| .m:Missing                    |  | 2           |             |
| .n:No friends                 |  | 2408        | 3679        |
| .p:Proxy interview, not asked |  | 821         | 726         |
| .r:Refuse                     |  | 12          | 10          |
| .u:Unmar                      |  | 4009        | 4782        |
| .v:SP NR                      |  | 131         | 349         |
| 1.A lot                       |  | 3190        | 3219        |
| 2.Little                      |  | 2381        | 2236        |
| 3.Not at all                  |  | 688         | 681         |
| Value-----                    |  | R2FLETDOW_M | R3FLETDOW_M |
| .d:DK                         |  | 283         | 105         |
| .m:Missing                    |  | 3           |             |
| .n:No friends                 |  | 3519        | 5554        |
| .p:Proxy interview, not asked |  | 1178        | 1275        |
| .r:Refuse                     |  | 32          | 29          |
| 1.A lot                       |  | 947         | 1271        |
| 2.Little                      |  | 3033        | 3029        |
| 3.Not at all                  |  | 4709        | 4460        |
| Value-----                    |  | S2FLETDOW_M | S3FLETDOW_M |
| .d:DK                         |  | 201         | 65          |
| .m:Missing                    |  | 2           |             |
| .n:No friends                 |  | 2408        | 3679        |
| .p:Proxy interview, not asked |  | 821         | 726         |
| .r:Refuse                     |  | 24          | 19          |
| .u:Unmar                      |  | 4009        | 4782        |
| .v:SP NR                      |  | 131         | 349         |
| 1.A lot                       |  | 675         | 885         |
| 2.Little                      |  | 2222        | 2128        |
| 3.Not at all                  |  | 3211        | 3090        |

## How Constructed

MHAS Waves 2 and 3 include four questions about friend's, acquaintance's, or work colleague's social support which are only asked if the respondent reports that they have friends, acquaintances, or work colleagues and the interview was not by proxy.

RwFUSTDFE\_M indicates how much the respondent feels their friends/acquaintances/work colleagues really understand the way they feel about things.

RwFRELY\_M indicates how much the respondent feels they can confide in their friends/acquaintances/work colleagues if they have a serious problem.

RwFOPENUP\_M indicates how much the respondent feels friends/acquaintances/work colleagues would listen if they need to talk about their worries.

RwFLETDOW\_M indicates how much the respondent feels they would be disappointed when they are counting on their friends/acquaintances/work colleagues.

RwFUSTDFE\_M, RwFRELY\_M, RwFOPENUP\_M and RwFLETDOW\_M are coded as follow: 1. a lot, 2. little and 3. not at all. Special missing .n is assigned if the respondent indicates they did not have any friends, hence the questions are not asked. Special missing .p is assigned if the interview is by proxy in which case these questions are not asked. Don't know, refused, or missing responses are assigned special missing values .d, .r, .m, respectively. Plain missing (.) is assigned for respondents who did not respond to the current wave.

SwFUSTDFE\_M, SwFRELY\_M, SwFOPENUP\_M and SwFLETDOW\_M indicate how much the current wave's spouse agrees with statements about their friends and are taken from the spouse's values to RwFUSTDFE\_M, RwFRELY\_M, RwFOPENUP\_M and RwFLETDOW\_M. In addition to the special missing codes used in RwFUSTDFE\_M, RwFRELY\_M, RwFOPENUP\_M and RwFLETDOW\_M, SwFUSTDFE\_M, SwFRELY\_M, SwFOPENUP\_M and SwFLETDOW\_M employ two other missing

codes, .u and .v. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

RwFSUPPORT4\_M indicates the mean of the answers to four different friend support questions (RwFUSTDFE\_M, RwFRELY\_M, RwFOPENUP\_M and RwFLETDOWN\_M) and can be used as a summary score. RwFSUPPORT4\_M is calculated for any respondent with at least one non-missing value for its four components. Since RwFSUPPORT4\_M is the variable that indicates how much the respondents feel lack of support from their friends/acquaintances/work colleagues, we reverse coded the values of RwFLETDOWN\_M to make sure that higher scores indicate less support the respondent feels by their friends. The coding of RwFUSTDFE\_M, RwFRELY\_M and RwFOPENUP\_M did not change. RwFSUPPORT4M\_M counts the number of components with missing values in RwFSUPPORT4\_M, which could be between no missing components (0) and four missing components (4). RwFSUPPORT4\_M is assigned special missing values .d, .r, or .m if the answers to all components are don't know, refused, or otherwise missing. RwFSUPPORT4\_M is assigned special missing value .p or .n if the interview was completed by proxy or if the respondent reported having no friends, respectively. RwFSUPPORT4\_M and RwFSUPPORT4M\_M are assigned plain missing (.) if the respondent did not respond to the current wave.

SwFSUPPORT4\_M and SwFSUPPORT4M\_M indicate the mean summary score of the answers to four different friends support questions and the count of any missing components for the current wave's spouse and are taken from the spouse's values to RwFSUPPORT4\_M and RwFSUPPORT4M\_M. In addition to the special missing codes used in RwFSUPPORT4\_M and RwFSUPPORT4M\_M, SwFSUPPORT4\_M and SwFSUPPORT4M\_M employs two other missing codes, .u and .v. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Questions about friend's, acquaintance's, or work colleague's social support are only asked in MHAS Waves 2 and 3.

## Differences with the RAND HRS/Harmonized HRS

Unlike HRS, MHAS did not ask the following of the respondent:

1. how often they feel their friends make too many demands on them;
2. how much the respondent feels their friends criticize them;
3. how much the respondent feels their friends get on their nerves.

HRS uses a four-point response scale from "a lot" to "not at all", MHAS uses a three-point response scale from "a lot" to "not at all."

Also, the following questions wording is slightly different between HRS and MHAS:

1. HRS asks "How much can you rely on them if you have a serious problem?" whereas MHAS asks "How much can you confide in them if you have a serious problem?"
2. HRS asks "How much can you open up to them if you need to talk about your worries?" whereas MHAS asks "How much do they listen if you need to talk about your worries?"
3. HRS asks "How much do they let you down when you are counting on them?" whereas MHAS asks "How much do they disappoint you when you are talking to them?"

HRS also just asks about "friends", whereas MHAS extends the questions to "friends/acquaintances/work colleagues."

## MHAS Variables Used

Wave 2:

|     |                             |
|-----|-----------------------------|
| D6  | have friends and companions |
| D7A | friends understand          |

|         |   |
|---------|---|
| D7B     | confide in friends                                      |
| D7C     | friends listen  |
| D7D     | friends disappoint                                      |
| Wave 3: |   |
| D23_12  | Does respondent have friends,acquaintances or work coll |
| D24A_12 | Rate your friends understanding about your feelings     |
| D24B_12 | Rate your confidence level in your friends regarding a  |
| D24C_12 | Rate your friends attention level when speaking to them |
| D24D_12 | Rate your level of disappointment in your friends       |

## Experienced Death of a Child

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 1    | H1CHDEATHE | h1chdeathe: w1 R+S Ever experienced death of own child | Categ |
| 2    | H2CHDEATHE | h2chdeathe: w2 R+S Ever experienced death of own child | Categ |
| 3    | H3CHDEATHE | h3chdeathe: w3 R+S Ever experienced death of own child | Categ |
| 4    | H4CHDEATHE | h4chdeathe: w4 R+S Ever experienced death of own child | Categ |
| 5    | H5CHDEATHE | h5chdeathe: w5 R+S Ever experienced death of own child | Categ |

### Descriptive Statistics

| Variable   | N     | Mean | Std Dev | Minimum | Maximum |
|------------|-------|------|---------|---------|---------|
| H1CHDEATHE | 15186 | 0.37 | 0.48    | 0.00    | 1.00    |
| H2CHDEATHE | 13704 | 0.38 | 0.49    | 0.00    | 1.00    |
| H3CHDEATHE | 15723 | 0.32 | 0.46    | 0.00    | 1.00    |
| H4CHDEATHE | 14779 | 0.32 | 0.47    | 0.00    | 1.00    |
| H5CHDEATHE | 17114 | 0.27 | 0.44    | 0.00    | 1.00    |

### Categorical Variable Codes

| Value----- | H1CHDEATHE | H2CHDEATHE | H3CHDEATHE | H4CHDEATHE | H5CHDEATHE |
|------------|------------|------------|------------|------------|------------|
| 0.No       | 9513       | 8510       | 10764      | 10057      | 12548      |
| 1.Yes      | 5673       | 5194       | 4959       | 4722       | 4566       |

### How Constructed

HwCHDEATHE indicates whether the respondent and/or their spouse has ever experienced the death of their own child. This variable is based on the count of deceased children that the respondent and their spouse provide during their interviews (HwDCHILD), including children who died prior to the respondent joining MHAS, children who were household residents and passed away, and children who lived separately and passed away. HwCHDEATHE is given a code of 0 if the respondent reported no deceased children. HwCHDEATHE is given a code of 1 if the respondent reported at least one deceased child. Don't know, refused, or missing responses are assigned special missing values .d, .r, .m, respectively. HwCHDEATHE is assigned plaining missing (.) for respondents who did not participate in the current wave.

### Cross Wave Differences in MHAS

Please see Section G: Number of Deceased Children for any differences across waves.

### Differences with the RAND HRS/Harmonized HRS

Unlike HRS, most of the childhood and lifetime stressful events questions were not asked in the MHAS. In addition, the HRS asks whether the respondent has experienced the death of their own child while in the MHAS the variable is created using the count of deceased children that the respondent and their spouse have ever had. It is a respondent-level variable in the Harmonized HRS and a couple-level variable in the Harmonized MHAS.

### MHAS Variables Used

|         |  |
|---------|--|
| Wave 1: |  |
| B25     | registration number of deceased children |
| Wave 2: |  |
| B1      | code of respondent                       |
| TRH10   | relationship with spouse                 |
| TRH3    | registration number                      |
| TRH5    | current situation                        |
| TRH9    | relationship                             |
| Wave 3: |  |

|          |  |
|----------|--|
| B21B_12  | Deceased CHILD: registration number            |
| B3_12    | Follow-up respondent's registration number     |
| B7_12    | Residency status of non-resident child         |
| NB25_12  | New respondent's registration number           |
| TRH10_12 | Resident's relationship to respondent's spouse |
| TRH3_12  | Household Resident registration number         |
| TRH5_12  | Former Resident's current residential status   |
| TRH9_12  | Resident's relationship to respondent          |

## Wave 4:

|          |   |
|----------|---|
| B21B_15  | Deceased Child: Registration number                     |
| B3_15    | Non-resident Child: Registration number                 |
| B7_15    | Non-resident Child: Residency status of non-resident ch |
| NB25_15  | Deceased Child: Registration number                     |
| TRH10_15 | Resident's relationship to respondent's spouse          |
| TRH3_15  | Household resident registration number                  |
| TRH5_15  | Former resident's current residential status            |
| TRH9_15  | Resident's relationship to respondent                   |

## Wave 5:

|          |   |
|----------|---|
| B21B_18  |   |
| B3_18    | Non-resident Child: Registration number                 |
| B7_18    | Non-resident Child: Residency status of non-resident ch |
| NB25_18  | Deceased Child: Registration number                     |
| TRH10_18 | Resident's relationship to respondent's spouse          |
| TRH3_18  | Household resident registration number                  |
| TRH5_18  | Former resident's current residential status            |
| TRH9_18  | Resident's relationship to respondent                   |

**Section O: End of Life Planning**

|                                 |
|---------------------------------|
| <b>Will: Whether Has a Will</b> |
|---------------------------------|

| Wave | Variable    | Label                                      | Type  |
|------|-------------|--|-------|
| 1    | H1WITWILL_M | h1witwill_m: w1 R+S have made arrangements | Categ |
| 2    | H2WITWILL_M | h2witwill_m: w2 R+S have made arrangements | Categ |
| 3    | H3WITWILL_M | h3witwill_m: w3 R+S have made arrangements | Categ |
| 4    | H4WITWILL_M | h4witwill_m: w4 R+S have made arrangements | Categ |
| 5    | H5WITWILL_M | h5witwill_m: w5 R+S have made arrangements | Categ |
| 3    | H3WITWILL   | h3witwill: w3 R+S have witnessed will      | Categ |
| 4    | H4WITWILL   | h4witwill: w4 R+S have witnessed will      | Categ |
| 5    | H5WITWILL   | h5witwill: w5 R+S have witnessed will      | Categ |

### Descriptive Statistics

| Variable    | N     | Mean | Std Dev | Minimum | Maximum |
|-------------|-------|------|---------|---------|---------|
| H1WITWILL_M | 13648 | 0.14 | 0.34    | 0.00    | 1.00    |
| H2WITWILL_M | 12307 | 0.12 | 0.33    | 0.00    | 1.00    |
| H3WITWILL_M | 13363 | 0.17 | 0.37    | 0.00    | 1.00    |
| H4WITWILL_M | 12963 | 0.19 | 0.39    | 0.00    | 1.00    |
| H5WITWILL_M | 14437 | 0.16 | 0.37    | 0.00    | 1.00    |
| H3WITWILL   | 13357 | 0.13 | 0.33    | 0.00    | 1.00    |
| H4WITWILL   | 12954 | 0.14 | 0.35    | 0.00    | 1.00    |
| H5WITWILL   | 14431 | 0.12 | 0.33    | 0.00    | 1.00    |

### Categorical Variable Codes

| Value-----                    | H1WITWILL_M | H2WITWILL_M | H3WITWILL_M | H4WITWILL_M | H5WITWILL_M |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|
| .a:owns no assets             | 1331        | 1127        | 1368        | 1296        | 1783        |
| .d:DK                         | 62          | 7           | 33          | 12          | 42          |
| .m:Missing                    | 59          | 31          |             | 50          | 20          |
| .p:Proxy interview, not asked | 502         | 554         | 911         | 588         | 803         |
| .r:Refuse                     | 69          | 13          | 48          | 23          | 29          |
| 0.no                          | 11803       | 10774       | 11152       | 10488       | 12055       |
| 1.yes                         | 1845        | 1533        | 2211        | 2475        | 2382        |

| Value-----                    | H3WITWILL | H4WITWILL | H5WITWILL |
|-------------------------------|-----------|-----------|-----------|
| .a:owns no assets             | 1368      | 1296      | 1783      |
| .d:DK                         | 36        | 18        | 45        |
| .m:Missing                    |           | 50        | 20        |
| .p:Proxy interview, not asked | 911       | 588       | 803       |
| .r:Refuse                     | 51        | 26        | 32        |
| 0.no                          | 11668     | 11120     | 12643     |
| 1.yes                         | 1689      | 1834      | 1788      |

### How Constructed

HwWITWILL\_M is an MHAS specific variable that indicates whether the respondent and their spouse have made arrangements to transfer their assets in case of death. HwWITWILL\_M is assigned a 0 if no arrangements have been made, and is assigned a 1 if arrangements have been made to transfer their assets in case of death. HwWITWILL\_M is assigned special missing .p if this question was skipped because the interview was by proxy. HwWITWILL\_M is assigned special missing .a if the respondent voluntarily reports that they do not own assets. Don't know, refused or otherwise missing responses are assigned special missing .d, .r, and .m, respectively. HwWITWILL\_M is set to plain missing (.) for respondents who did not participate in the current wave.

HwWITWILL indicates whether the respondent and their spouse have made arrangements to transfer their assets in case of death which have been written in a formal will by a notary. Starting in Wave 3, the respondent is first asked whether they have made any arrangements to transfer their assets in case of death, and if so, is then asked if these arrangements are written in a formal will by a notary. HwWITWILL



is assigned a 0 if no arrangements have been made or if arrangements have been made but they have not been written in a formal will by a notary. HwWITWILL is assigned a 1 if arrangements have been made and they have been written in a formal will by a notary. HwWITWILL is assigned special missing .p if these questions were skipped because the interview was by proxy. HwWITWILL is assigned special missing .a if the respondent voluntarily reports that they do not own assets. Don't know, refused or otherwise missing responses are assigned special missing .d, .r, and .m, respectively. HwWITWILL is set to plain missing (.) for respondents who did not participate in the current wave.

Cross Wave Differences in MHAS

In all waves, the respondent is asked "Have you made any arrangements to transfer your assets in case of death?" Starting in Wave 3, if the answer is yes, then the respondent is asked "Are these arrangements written in a formal will by a notary?"

Differences with the RAND HRS/Harmonized HRS

The HRS asks both the respondent and the spouse whether they have a will that is written and witnessed, the answers to which are presented in RwWITWILL and SwWITWILL in the Harmonized HRS. The MHAS asks at the couple-level whether arrangements have been made to transfer their assets in case of death, which could indicate a formal or informal arrangement, which is presented in HwWITWILL\_M in the Harmonized MHAS. Starting in Wave 3 of the MHAS, the respondent is asked whether the arrangements have been written in a formal will by a notary, making the question more comparable to the one asked in the HRS, and the answers to which are presented in HwWITWILL in the Harmonized MHAS.

MHAS Variables Used

|              |  |
|--------------|--|
| Wave 1:      |  |
| ENT_TIP      | type of individual interview                       |
| K88          | transfers plans                                    |
| Wave 2:      |  |
| K93          | transfers plans                                    |
| TIPENT       | type of individual interview                       |
| Wave 3:      |  |
| K93A_12      | Arrangements to transfer asset(s) at time of death |
| K93B_12      | Formal arrangements written by a notary            |
| TIPENTK_12   | Type of interview section K 2012                   |
| Wave 4:      |  |
| K93A_15      | Arrangements to transfer asset(s) at time of death |
| K93B_15      | Formal arrangements written by a notary            |
| TIPENTK_15   | Type of interview section K 2015                   |
| Wave 5:      |  |
| K93A_18      | Arrangements to transfer asset(s) at time of death |
| K93B_18      | Formal arrangements written by a notary            |
| TIPENT_HH_18 | Type of interview Household Sections 2018          |

|                                    |
|------------------------------------|
| <b>Will: Beneficiaries of Will</b> |
|------------------------------------|

| Wave | Variable | Label   | Type  |
|------|----------|---|-------|
| 1    | H1WILLSP | h1willsp: w1 R+S will has provisions for spouse           | Categ |
| 2    | H2WILLSP | h2willsp: w2 R+S will has provisions for spouse           | Categ |
| 3    | H3WILLSP | h3willsp: w3 R+S will has provisions for spouse           | Categ |
| 4    | H4WILLSP | h4willsp: w4 R+S will has provisions for spouse           | Categ |
| 5    | H5WILLSP | h5willsp: w5 R+S will has provisions for spouse           | Categ |
|      |          |   |       |
| 1    | H1WILLCG | h1willcg: w1 R+S will has provisions for child/grandchild | Categ |
| 2    | H2WILLCG | h2willcg: w2 R+S will has provisions for child/grandchild | Categ |
| 3    | H3WILLCG | h3willcg: w3 R+S will has provisions for child/grandchild | Categ |
| 4    | H4WILLCG | h4willcg: w4 R+S will has provisions for child/grandchild | Categ |
| 5    | H5WILLCG | h5willcg: w5 R+S will has provisions for child/grandchild | Categ |
|      |          |   |       |
| 1    | H1WILLOT | h1willot: w1 R+S will has provisions for other            | Categ |
| 2    | H2WILLOT | h2willot: w2 R+S will has provisions for other            | Categ |
| 3    | H3WILLOT | h3willot: w3 R+S will has provisions for other            | Categ |
| 4    | H4WILLOT | h4willot: w4 R+S will has provisions for other            | Categ |
| 5    | H5WILLOT | h5willot: w5 R+S will has provisions for other            | Categ |

### Descriptive Statistics

| Variable | N    | Mean | Std Dev | Minimum | Maximum |
|----------|------|------|---------|---------|---------|
| H1WILLSP | 1742 | 0.66 | 0.47    | 0.00    | 1.00    |
| H2WILLSP | 1489 | 0.63 | 0.48    | 0.00    | 1.00    |
| H3WILLSP | 2211 | 0.62 | 0.48    | 0.00    | 1.00    |
| H4WILLSP | 2452 | 0.61 | 0.49    | 0.00    | 1.00    |
| H5WILLSP | 2382 | 0.61 | 0.49    | 0.00    | 1.00    |
|          |      |      |         |         |         |
| H1WILLCG | 1822 | 0.92 | 0.27    | 0.00    | 1.00    |
| H2WILLCG | 1502 | 0.90 | 0.29    | 0.00    | 1.00    |
| H3WILLCG | 1653 | 0.94 | 0.23    | 0.00    | 1.00    |
| H4WILLCG | 1796 | 0.94 | 0.23    | 0.00    | 1.00    |
| H5WILLCG | 1763 | 0.94 | 0.23    | 0.00    | 1.00    |
|          |      |      |         |         |         |
| H1WILLOT | 1822 | 0.06 | 0.24    | 0.00    | 1.00    |
| H2WILLOT | 1502 | 0.08 | 0.28    | 0.00    | 1.00    |
| H3WILLOT | 1653 | 0.05 | 0.22    | 0.00    | 1.00    |
| H4WILLOT | 1796 | 0.04 | 0.20    | 0.00    | 1.00    |
| H5WILLOT | 1763 | 0.06 | 0.24    | 0.00    | 1.00    |

### Categorical Variable Codes

| Value-----                    | H1WILLSP | H2WILLSP | H3WILLSP | H4WILLSP | H5WILLSP |
|-------------------------------|----------|----------|----------|----------|----------|
| .a:owns no assets             | 1331     | 1127     | 1368     | 1296     | 1783     |
| .d:DK                         | 62       | 7        | 33       | 12       | 42       |
| .m:Missing                    | 107      | 31       |          | 50       | 20       |
| .p:Proxy interview, not asked | 502      | 554      | 911      | 588      | 803      |
| .r:Refuse                     | 69       | 13       | 48       | 23       | 29       |
| .w:no will                    | 11803    | 10774    | 11152    | 10488    | 12055    |
| 0.no                          | 592      | 545      | 831      | 968      | 934      |
| 1.yes                         | 1150     | 944      | 1380     | 1484     | 1448     |
|                               |          |          |          |          |          |
| Value-----                    | H1WILLCG | H2WILLCG | H3WILLCG | H4WILLCG | H5WILLCG |
| .a:owns no assets             | 1331     | 1127     | 1368     | 1296     | 1783     |
| .d:DK                         | 73       | 9        | 36       | 27       | 62       |
| .m:Missing                    | 59       | 31       |          | 50       | 20       |
| .p:Proxy interview, not asked | 502      | 554      | 911      | 588      | 803      |
| .r:Refuse                     | 81       | 42       | 87       | 55       | 40       |
| .w:no will                    | 11803    | 10774    | 11668    | 11120    | 12643    |

|                               |  |          |          |          |          |          |
|-------------------------------|--|----------|----------|----------|----------|----------|
| 0.no                          |  | 146      | 144      | 91       | 99       | 98       |
| 1.yes                         |  | 1676     | 1358     | 1562     | 1697     | 1665     |
| Value-----                    |  | H1WILLOT | H2WILLOT | H3WILLOT | H4WILLOT | H5WILLOT |
| .a:owns no assets             |  | 1331     | 1127     | 1368     | 1296     | 1783     |
| .d:DK                         |  | 73       | 9        | 36       | 27       | 62       |
| .m:Missing                    |  | 59       | 31       | 516      | 50       | 20       |
| .p:Proxy interview, not asked |  | 502      | 554      | 911      | 588      | 803      |
| .r:Refuse                     |  | 81       | 42       | 87       | 55       | 40       |
| .w:no will                    |  | 11803    | 10774    | 11152    | 11120    | 12643    |
| 0.no                          |  | 1707     | 1377     | 1568     | 1722     | 1654     |
| 1.yes                         |  | 115      | 125      | 85       | 74       | 109      |

## How Constructed

HwWILLSP indicates whether the respondent's spouse would be a beneficiary of their assets in case of death. HwWILLCG indicates whether the respondent's children and/or grandchildren would be a beneficiary of their assets in case of death. HwWILLOT indicates whether someone other than the respondent's spouse, children and/or grandchildren would be a beneficiary of their assets in case of death. In Waves 1 and 2 if the respondent reports having made arrangements to transfer assets in case of death, and starting in Wave 3 if the respondent reports having a written will, then the respondent is asked "Excluding your spouse, who would be the beneficiary of your assets in case of death?" HwWILLSP is assigned a value of 0 if the respondent reports having a will and being partnered, separated, divorced, widowed, or never married, and is assigned a value of 1 if the respondent reports having a will and being married. Even though the question explicitly excludes the spouse, due to institutional arrangements in Mexico, a spouse will automatically be a beneficiary of their spouse's will. HwWILLCG is assigned a value of 0 if the respondent reports that another person or no one else would be the beneficiary, and is assigned a value of 1 if the respondent reports that children and/or grandchildren would be a beneficiary of their assets. HwWILLOT is assigned a value of 0 if the respondent reports that the children and/or grandchildren or no one else would be the beneficiary, and is assigned a value of 1 if the respondent reports that another person would be a beneficiary of their assets. HwWILLSP, HwWILLCG, and HwWILLOT are assigned special missing .p if these questions were skipped because the interview was by proxy. HwWILLSP, HwWILLCG, HwWILLOT are assigned special missing .a if the respondent voluntarily reports that they do not own assets. HwWILLSP, HwWILLCG, and HwWILLOT are assigned special missing .w if the respondent has not made arrangements to transfer assets in case of death in Waves 1 and 2, and if the respondent does not have a written will starting in Wave 3. Don't know, refused or otherwise missing responses are assigned special missing .d, .r, and .m, respectively. HwWILLSP, HwWILLCG, and HwWILLOT are set to plain missing (.) for respondents who did not participate in the current wave.

## Cross Wave Differences in MHAS

In Waves 1 and 2, respondents are asked who, excluding their spouse, would be a beneficiary of their assets if they report having made arrangements to transfer their assets in case of death. Starting in Wave 3, respondents are asked this question only if they report having a formal will written by a notary.

## Differences with the RAND HRS/Harmonized HRS

The HRS asks both the respondent and their spouse whether they have a will that is written and witnessed. The MHAS asks at the couple-level whether arrangements have been made to transfer their assets in case of death, which could indicate a formal or informal arrangement. Starting in Wave 3 of the MHAS, the respondent is asked whether the arrangements have been written in a formal will by a notary, making the question more comparable to the one asked in the HRS.

In the HRS, if the respondent reports having a will, the respondent is asked separately whether the will has provisions for family other than their spouse, children, grandchildren, and charity. In the MHAS, if the respondent reports having made arrangements in Waves 1 and 2, or if the respondent reports having a formal will starting in Wave 3, then the respondent is asked who would be the beneficiary of their assets in case of death, excluding their spouse, and are given the following options: 1.children and/or grandchildren, 2.other, 3.child and/or grandchild and other, 4.no one else. Due to institutional arrangements in Mexico, a spouse will automatically be a beneficiary of their spouse's will and so is not explicitly asked in the MHAS. Because of these differences in categories, the variables RwWILLSP, RwWILLFM, RwWILLCH, RwWILLGK, and RwWILLAR are primarily used in the Harmonized HRS, and HwWILLSP, HwWILLCG, and HwWILLOT are used in the Harmonized MHAS.

**MHAS Variables Used**

## Wave 1:

|         |                              |
|---------|------------------------------|
| ENT_TIP | type of individual interview |
| K88     | transfers plans              |
| K89     | beneficiary of will          |

## Wave 2:

|        |                              |
|--------|------------------------------|
| K93    | transfers plans              |
| K94    | beneficiary of will          |
| TIPENT | type of individual interview |

## Wave 3:

|            |  |
|------------|--|
| K93A_12    | Arrangements to transfer asset(s) at time of death   |
| K93B_12    | Formal arrangements written by a notary              |
| K94_12     | At death, excluding spouse, who would receive assets |
| TIPENTK_12 | Type of interview section K 2012                     |

## Wave 4:

|            |   |
|------------|---|
| K93A_15    | Arrangements to transfer asset(s) at time of death      |
| K93B_15    | Formal arrangements written by a notary                 |
| K94_15     | At death, excluding spouse, who would be beneficiary of |
| TIPENTK_15 | Type of interview section K 2015                        |

## Wave 5:

|              |   |
|--------------|---|
| K93A_18      | Arrangements to transfer asset(s) at time of death      |
| K93B_18      | Formal arrangements written by a notary                 |
| K94_18       | At death, excluding spouse, who would be beneficiary of |
| TIPENT_HH_18 | Type of interview Household Sections 2018               |

Covered by Life Insurance

| Wave | Variable   | Label                                      | Type  |
|------|------------|--|-------|
| 1    | R1LIFEIN_M | r1lifein_m: w1 R Covered by life insurance | Categ |
| 2    | R2LIFEIN_M | r2lifein_m: w2 R Covered by life insurance | Categ |
| 3    | R3LIFEIN_M | r3lifein_m: w3 R Covered by life insurance | Categ |
| 4    | R4LIFEIN_M | r4lifein_m: w4 R Covered by life insurance | Categ |
| 5    | R5LIFEIN_M | r5lifein_m: w5 R Covered by life insurance | Categ |
| 1    | S1LIFEIN_M | s1lifein_m: w1 S Covered by life insurance | Categ |
| 2    | S2LIFEIN_M | s2lifein_m: w2 S Covered by life insurance | Categ |
| 3    | S3LIFEIN_M | s3lifein_m: w3 S Covered by life insurance | Categ |
| 4    | S4LIFEIN_M | s4lifein_m: w4 S Covered by life insurance | Categ |
| 5    | S5LIFEIN_M | s5lifein_m: w5 S Covered by life insurance | Categ |

Descriptive Statistics

| Variable   | N    | Mean | Std Dev | Minimum | Maximum |
|------------|------|------|---------|---------|---------|
| R1LIFEIN_M | 6579 | 0.16 | 0.37    | 0.00    | 1.00    |
| R2LIFEIN_M | 5749 | 0.12 | 0.33    | 0.00    | 1.00    |
| R3LIFEIN_M | 5680 | 0.18 | 0.39    | 0.00    | 1.00    |
| R4LIFEIN_M | 5561 | 0.11 | 0.31    | 0.00    | 1.00    |
| R5LIFEIN_M | 7040 | 0.15 | 0.36    | 0.00    | 1.00    |
| S1LIFEIN_M | 4976 | 0.17 | 0.37    | 0.00    | 1.00    |
| S2LIFEIN_M | 4380 | 0.13 | 0.34    | 0.00    | 1.00    |
| S3LIFEIN_M | 4204 | 0.19 | 0.39    | 0.00    | 1.00    |
| S4LIFEIN_M | 4031 | 0.11 | 0.31    | 0.00    | 1.00    |
| S5LIFEIN_M | 2664 | 0.09 | 0.28    | 0.00    | 1.00    |

Categorical Variable Codes

| Value-----     | R1LIFEIN_M | R2LIFEIN_M | R3LIFEIN_M | R4LIFEIN_M | R5LIFEIN_M |
|----------------|------------|------------|------------|------------|------------|
| .d:DK          | 83         | 30         | 9          | 63         | 17         |
| .m:Missing     | 42         | 42         |            | 40         | 18         |
| .q:not asked   |            | 10         |            |            |            |
| .r:Refuse      | 55         | 3          | 7          | 7          | 23         |
| .w:not working | 8427       | 7870       | 10027      | 9108       | 10016      |
| 0.no           | 5526       | 5031       | 4640       | 4955       | 5990       |
| 1.yes          | 1053       | 718        | 1040       | 606        | 1050       |

| Value-----     | S1LIFEIN_M | S2LIFEIN_M | S3LIFEIN_M | S4LIFEIN_M | S5LIFEIN_M |
|----------------|------------|------------|------------|------------|------------|
| .d:DK          | 63         | 24         | 6          | 50         | 4          |
| .m:Missing     | 14         | 19         |            | 10         | 3          |
| .q:not asked   |            | 8          |            |            |            |
| .r:Refuse      | 45         | 1          | 3          | 6          | 12         |
| .u:Unmar       | 4205       | 4009       | 4782       | 4847       | 5227       |
| .v:SP NR       | 333        | 131        | 349        | 280        | 501        |
| .w:not working | 5550       | 5132       | 6379       | 5555       | 4778       |
| 0.no           | 4149       | 3809       | 3401       | 3584       | 2432       |
| 1.yes          | 827        | 571        | 803        | 447        | 232        |

How Constructed

RwLIFEIN\_M is an MHAS specific variable that indicates whether the respondent has life insurance.

The number of questions and wording changed between waves depending on the type of interview: follow-up or new subject interviews. In Wave 1, respondents are asked "In your main job which of the following benefits do you receive (did you receive)... Life Insurance?". In Wave 2, follow-up respondents were asked "In your primary job which of the following benefits do you receive (did you receive)... Life Insurance?" and new respondents were asked "In your current primary job, which of the following benefits

do you receive?". In Wave 3, both follow-up and new respondents were asked the two questions. Starting in Wave 4, only new respondents were asked "In your primary job throughout your life, which of the following benefits do you receive (did you receive)... Life Insurance?" and both follow-up and new respondents were asked "In your current primary job, which of the following benefits do you receive?".

RwLIFEIN\_M is assigned a value of 0 if the respondent did not report having life insurance, and is assigned a value of 1 if the respondent did report having life insurance. RwLIFEIN\_M is set to .w, if the respondent reports they are currently not working. RwLIFEIN\_M is assigned special missing values .d or .r for don't know or refused responses, respectively. In Wave 2, RwLIFEIN\_M is set to .q to indicate that the life insurance question was not asked for follow-up respondents that are currently working. The variables are set to plain missing (.) for respondents who did not respond to the current wave.

SwLIFEIN\_M are taken from the Wave 'w' spouse's value for RwLIFEIN\_M. In addition to the special missing codes used in RwLIFEIN, if the respondent is not designated as coupled in the current wave and assumed to be single, a special missing value of .u is used. Also, if the respondent is not designated as coupled in the current wave but reports being married, a special missing value of .v is used.

## Cross Wave Differences in MHAS

The number of questions and wording changed between waves depending on the type of interview: follow-up or new subject interviews. In Wave 1, respondents are asked "In your main job which of the following benefits do you receive (did you receive)... Life Insurance?". In Wave 2, follow-up respondents were asked "In your primary job which of the following benefits do you receive (did you receive)... Life Insurance?" and new respondents were asked "In your current primary job, which of the following benefits do you receive?". In Wave 3, both follow-up and new respondents were asked the two questions. Starting in Wave 4, only new respondents were asked "In your primary job throughout your life, which of the following benefits do you receive (did you receive)... Life Insurance?" and both follow-up and new respondents were asked "In your current primary job, which of the following benefits do you receive?". Also different to Wave 2, is the dynamics of the Employment Section (determined by the skip patterns) which was modified depending on the type of interview: follow-up or new subject interviews, in particular for the 'Work History' and 'Principal Occupation' questions. The difference in the skip patterns affects the Life Insurance variable.

## Differences with the RAND HRS/Harmonized HRS

Different from the HRS, the MHAS asks respondents whether they have life insurance as a benefit from their main or current job.

## MHAS Variables Used

|          |   |
|----------|---|
| Wave 1:  |   |
| I17G     | benefits for life insurance                             |
| Wave 2:  |   |
| I12_7    | received benefits - life insurance                      |
| I25_6    | benefits from current job - life insurance              |
| Wave 3:  |   |
| I12_7_12 | Received(s) benefits from primary job - life insurance  |
| I25_7_12 | Benefits from current job - life insurance              |
| Wave 4:  |   |
| I12_7_15 | Did respondent received(receives) benefits from his/her |
| I25A7_15 | Does respondent receive benefits from his/her current p |
| Wave 5:  |   |
| I12_7_18 | Did R receive(receives) benefits from his/her primary j |
| I25A7_18 | Does R receive benefits from his/her current primary jo |

**Section Q: Psychosocial**

|                                  |
|----------------------------------|
| <b>Depressive Symptoms: CESD</b> |
|----------------------------------|

| Wave | Variable | Label                                    | Type  |
|------|----------|--|-------|
| 1    | R1DEPRES | r1depres: w1 R CESD-Felt depressed       | Categ |
| 2    | R2DEPRES | r2depres: w2 R CESD-Felt depressed       | Categ |
| 3    | R3DEPRES | r3depres: w3 R CESD-Felt depressed       | Categ |
| 4    | R4DEPRES | r4depres: w4 R CESD-Felt depressed       | Categ |
| 5    | R5DEPRES | r5depres: w5 R CESD-Felt depressed       | Categ |
| 1    | S1DEPRES | s1depres: w1 S CESD-Felt depressed       | Categ |
| 2    | S2DEPRES | s2depres: w2 S CESD-Felt depressed       | Categ |
| 3    | S3DEPRES | s3depres: w3 S CESD-Felt depressed       | Categ |
| 4    | S4DEPRES | s4depres: w4 S CESD-Felt depressed       | Categ |
| 5    | S5DEPRES | s5depres: w5 S CESD-Felt depressed       | Categ |
| 1    | R1EFFORT | r1effort: w1 R CESD-Everything an effort | Categ |
| 2    | R2EFFORT | r2effort: w2 R CESD-Everything an effort | Categ |
| 3    | R3EFFORT | r3effort: w3 R CESD-Everything an effort | Categ |
| 4    | R4EFFORT | r4effort: w4 R CESD-Everything an effort | Categ |
| 5    | R5EFFORT | r5effort: w5 R CESD-Everything an effort | Categ |
| 1    | S1EFFORT | s1effort: w1 S CESD-Everything an effort | Categ |
| 2    | S2EFFORT | s2effort: w2 S CESD-Everything an effort | Categ |
| 3    | S3EFFORT | s3effort: w3 S CESD-Everything an effort | Categ |
| 4    | S4EFFORT | s4effort: w4 S CESD-Everything an effort | Categ |
| 5    | S5EFFORT | s5effort: w5 S CESD-Everything an effort | Categ |
| 1    | R1SLEEP  | r1sleep: w1 R CESD-Sleep was restless    | Categ |
| 2    | R2SLEEP  | r2sleep: w2 R CESD-Sleep was restless    | Categ |
| 3    | R3SLEEP  | r3sleep: w3 R CESD-Sleep was restless    | Categ |
| 4    | R4SLEEP  | r4sleep: w4 R CESD-Sleep was restless    | Categ |
| 5    | R5SLEEP  | r5sleep: w5 R CESD-Sleep was restless    | Categ |
| 1    | S1SLEEP  | s1sleep: w1 S CESD-Sleep was restless    | Categ |
| 2    | S2SLEEP  | s2sleep: w2 S CESD-Sleep was restless    | Categ |
| 3    | S3SLEEP  | s3sleep: w3 S CESD-Sleep was restless    | Categ |
| 4    | S4SLEEP  | s4sleep: w4 S CESD-Sleep was restless    | Categ |
| 5    | S5SLEEP  | s5sleep: w5 S CESD-Sleep was restless    | Categ |
| 1    | R1WHAPPY | r1happy: w1 R CESD-Felt happy            | Categ |
| 2    | R2WHAPPY | r2happy: w2 R CESD-Felt happy            | Categ |
| 3    | R3WHAPPY | r3happy: w3 R CESD-Felt happy            | Categ |
| 4    | R4WHAPPY | r4happy: w4 R CESD-Felt happy            | Categ |
| 5    | R5WHAPPY | r5happy: w5 R CESD-Felt happy            | Categ |
| 1    | S1WHAPPY | s1happy: w1 S CESD-Felt happy            | Categ |
| 2    | S2WHAPPY | s2happy: w2 S CESD-Felt happy            | Categ |
| 3    | S3WHAPPY | s3happy: w3 S CESD-Felt happy            | Categ |
| 4    | S4WHAPPY | s4happy: w4 S CESD-Felt happy            | Categ |
| 5    | S5WHAPPY | s5happy: w5 S CESD-Felt happy            | Categ |
| 1    | R1FLONE  | r1flone: w1 R CESD-Felt lonely           | Categ |
| 2    | R2FLONE  | r2flone: w2 R CESD-Felt lonely           | Categ |
| 3    | R3FLONE  | r3flone: w3 R CESD-Felt lonely           | Categ |
| 4    | R4FLONE  | r4flone: w4 R CESD-Felt lonely           | Categ |
| 5    | R5FLONE  | r5flone: w5 R CESD-Felt lonely           | Categ |
| 1    | S1FLONE  | s1flone: w1 S CESD-Felt lonely           | Categ |
| 2    | S2FLONE  | s2flone: w2 S CESD-Felt lonely           | Categ |
| 3    | S3FLONE  | s3flone: w3 S CESD-Felt lonely           | Categ |
| 4    | S4FLONE  | s4flone: w4 S CESD-Felt lonely           | Categ |
| 5    | S5FLONE  | s5flone: w5 S CESD-Felt lonely           | Categ |



|   |           |   |       |
|---|-----------|---|-------|
| 1 | R1ENLIFE  | r1enlife: w1 R CESD-Enjoyed life                | Categ |
| 2 | R2ENLIFE  | r2enlife: w2 R CESD-Enjoyed life                | Categ |
| 3 | R3ENLIFE  | r3enlife: w3 R CESD-Enjoyed life                | Categ |
| 4 | R4ENLIFE  | r4enlife: w4 R CESD-Enjoyed life                | Categ |
| 5 | R5ENLIFE  | r5enlife: w5 R CESD-Enjoyed life                | Categ |
| 1 | S1ENLIFE  | s1enlife: w1 S CESD-Enjoyed life                | Categ |
| 2 | S2ENLIFE  | s2enlife: w2 S CESD-Enjoyed life                | Categ |
| 3 | S3ENLIFE  | s3enlife: w3 S CESD-Enjoyed life                | Categ |
| 4 | S4ENLIFE  | s4enlife: w4 S CESD-Enjoyed life                | Categ |
| 5 | S5ENLIFE  | s5enlife: w5 S CESD-Enjoyed life                | Categ |
| 1 | R1FSAD    | r1fsad: w1 R CESD-Felt sad                      | Categ |
| 2 | R2FSAD    | r2fsad: w2 R CESD-Felt sad                      | Categ |
| 3 | R3FSAD    | r3fsad: w3 R CESD-Felt sad                      | Categ |
| 4 | R4FSAD    | r4fsad: w4 R CESD-Felt sad                      | Categ |
| 5 | R5FSAD    | r5fsad: w5 R CESD-Felt sad                      | Categ |
| 1 | S1FSAD    | s1fsad: w1 S CESD-Felt sad                      | Categ |
| 2 | S2FSAD    | s2fsad: w2 S CESD-Felt sad                      | Categ |
| 3 | S3FSAD    | s3fsad: w3 S CESD-Felt sad                      | Categ |
| 4 | S4FSAD    | s4fsad: w4 S CESD-Felt sad                      | Categ |
| 5 | S5FSAD    | s5fsad: w5 S CESD-Felt sad                      | Categ |
| 1 | R1FTIRED  | r1ftired: w1 R CESD-Felt tired                  | Categ |
| 2 | R2FTIRED  | r2ftired: w2 R CESD-Felt tired                  | Categ |
| 3 | R3FTIRED  | r3ftired: w3 R CESD-Felt tired                  | Categ |
| 4 | R4FTIRED  | r4ftired: w4 R CESD-Felt tired                  | Categ |
| 5 | R5FTIRED  | r5ftired: w5 R CESD-Felt tired                  | Categ |
| 1 | S1FTIRED  | s1ftired: w1 S CESD-Felt tired                  | Categ |
| 2 | S2FTIRED  | s2ftired: w2 S CESD-Felt tired                  | Categ |
| 3 | S3FTIRED  | s3ftired: w3 S CESD-Felt tired                  | Categ |
| 4 | S4FTIRED  | s4ftired: w4 S CESD-Felt tired                  | Categ |
| 5 | S5FTIRED  | s5ftired: w5 S CESD-Felt tired                  | Categ |
| 1 | R1ENERG   | r1energ: w1 R CESD-Had a lot of energy          | Categ |
| 2 | R2ENERG   | r2energ: w2 R CESD-Had a lot of energy          | Categ |
| 3 | R3ENERG   | r3energ: w3 R CESD-Had a lot of energy          | Categ |
| 4 | R4ENERG   | r4energ: w4 R CESD-Had a lot of energy          | Categ |
| 5 | R5ENERG   | r5energ: w5 R CESD-Had a lot of energy          | Categ |
| 1 | S1ENERG   | s1energ: w1 S CESD-Had a lot of energy          | Categ |
| 2 | S2ENERG   | s2energ: w2 S CESD-Had a lot of energy          | Categ |
| 3 | S3ENERG   | s3energ: w3 S CESD-Had a lot of energy          | Categ |
| 4 | S4ENERG   | s4energ: w4 S CESD-Had a lot of energy          | Categ |
| 5 | S5ENERG   | s5energ: w5 S CESD-Had a lot of energy          | Categ |
| 1 | R1CESD_M  | r1cesd_m: w1 R CESD Modified Score              | Cont  |
| 2 | R2CESD_M  | r2cesd_m: w2 R CESD Modified Score              | Cont  |
| 3 | R3CESD_M  | r3cesd_m: w3 R CESD Modified Score              | Cont  |
| 4 | R4CESD_M  | r4cesd_m: w4 R CESD Modified Score              | Cont  |
| 5 | R5CESD_M  | r5cesd_m: w5 R CESD Modified Score              | Cont  |
| 1 | S1CESD_M  | s1cesd_m: w1 S CESD Modified Score              | Cont  |
| 2 | S2CESD_M  | s2cesd_m: w2 S CESD Modified Score              | Cont  |
| 3 | S3CESD_M  | s3cesd_m: w3 S CESD Modified Score              | Cont  |
| 4 | S4CESD_M  | s4cesd_m: w4 S CESD Modified Score              | Cont  |
| 5 | S5CESD_M  | s5cesd_m: w5 S CESD Modified Score              | Cont  |
| 1 | R1CESDM_M | r1cesdm_m: w1 R CESD-Missings in Modified Score | Cont  |
| 2 | R2CESDM_M | r2cesdm_m: w2 R CESD-Missings in Modified Score | Cont  |
| 3 | R3CESDM_M | r3cesdm_m: w3 R CESD-Missings in modified Score | Cont  |

|   |           |                 |                                 |      |
|---|-----------|-----------------|---------------------------------|------|
| 4 | R4CESDM_M | r4cesdm_m: w4 R | CESD-Missings in modified Score | Cont |
| 5 | R5CESDM_M | r5cesdm_m: w5 R | CESD-Missings in modified Score | Cont |
| 1 | S1CESDM_M | s1cesdm_m: w1 S | CESD-Missings in Modified Score | Cont |
| 2 | S2CESDM_M | s2cesdm_m: w2 S | CESD-Missings in Modified Score | Cont |
| 3 | S3CESDM_M | s3cesdm_m: w3 S | CESD-Missings in modified Score | Cont |
| 4 | S4CESDM_M | s4cesdm_m: w4 S | CESD-Missings in modified Score | Cont |
| 5 | S5CESDM_M | s5cesdm_m: w5 S | CESD-Missings in modified Score | Cont |

## Descriptive Statistics

| Variable  | N     | Mean | Std Dev | Minimum | Maximum |
|-----------|-------|------|---------|---------|---------|
| R1DEPRES  | 14007 | 0.38 | 0.48    | 0.00    | 1.00    |
| R2DEPRES  | 12503 | 0.39 | 0.49    | 0.00    | 1.00    |
| R3DEPRES  | 14427 | 0.35 | 0.48    | 0.00    | 1.00    |
| R4DEPRES  | 13830 | 0.33 | 0.47    | 0.00    | 1.00    |
| R5DEPRES  | 15770 | 0.32 | 0.47    | 0.00    | 1.00    |
| S1DEPRES  | 9886  | 0.34 | 0.47    | 0.00    | 1.00    |
| S2DEPRES  | 8727  | 0.36 | 0.48    | 0.00    | 1.00    |
| S3DEPRES  | 9850  | 0.32 | 0.47    | 0.00    | 1.00    |
| S4DEPRES  | 9174  | 0.30 | 0.46    | 0.00    | 1.00    |
| S5DEPRES  | 7068  | 0.30 | 0.46    | 0.00    | 1.00    |
| R1EFFORT  | 13984 | 0.36 | 0.48    | 0.00    | 1.00    |
| R2EFFORT  | 12510 | 0.37 | 0.48    | 0.00    | 1.00    |
| R3EFFORT  | 14426 | 0.36 | 0.48    | 0.00    | 1.00    |
| R4EFFORT  | 13833 | 0.36 | 0.48    | 0.00    | 1.00    |
| R5EFFORT  | 15761 | 0.33 | 0.47    | 0.00    | 1.00    |
| S1EFFORT  | 9869  | 0.34 | 0.47    | 0.00    | 1.00    |
| S2EFFORT  | 8731  | 0.35 | 0.48    | 0.00    | 1.00    |
| S3EFFORT  | 9853  | 0.34 | 0.47    | 0.00    | 1.00    |
| S4EFFORT  | 9173  | 0.34 | 0.47    | 0.00    | 1.00    |
| S5EFFORT  | 7065  | 0.32 | 0.47    | 0.00    | 1.00    |
| R1SLEEPER | 14034 | 0.37 | 0.48    | 0.00    | 1.00    |
| R2SLEEPER | 12513 | 0.39 | 0.49    | 0.00    | 1.00    |
| R3SLEEPER | 14433 | 0.42 | 0.49    | 0.00    | 1.00    |
| R4SLEEPER | 13843 | 0.42 | 0.49    | 0.00    | 1.00    |
| R5SLEEPER | 15769 | 0.42 | 0.49    | 0.00    | 1.00    |
| S1SLEEPER | 9903  | 0.35 | 0.48    | 0.00    | 1.00    |
| S2SLEEPER | 8736  | 0.37 | 0.48    | 0.00    | 1.00    |
| S3SLEEPER | 9855  | 0.40 | 0.49    | 0.00    | 1.00    |
| S4SLEEPER | 9178  | 0.41 | 0.49    | 0.00    | 1.00    |
| S5SLEEPER | 7068  | 0.41 | 0.49    | 0.00    | 1.00    |
| R1WHAPPY  | 13996 | 0.75 | 0.43    | 0.00    | 1.00    |
| R2WHAPPY  | 12477 | 0.73 | 0.44    | 0.00    | 1.00    |
| R3WHAPPY  | 14415 | 0.80 | 0.40    | 0.00    | 1.00    |
| R4WHAPPY  | 13814 | 0.81 | 0.39    | 0.00    | 1.00    |
| R5WHAPPY  | 15742 | 0.81 | 0.40    | 0.00    | 1.00    |
| S1WHAPPY  | 9876  | 0.78 | 0.42    | 0.00    | 1.00    |
| S2WHAPPY  | 8708  | 0.75 | 0.43    | 0.00    | 1.00    |
| S3WHAPPY  | 9849  | 0.82 | 0.38    | 0.00    | 1.00    |
| S4WHAPPY  | 9161  | 0.83 | 0.37    | 0.00    | 1.00    |
| S5WHAPPY  | 7058  | 0.82 | 0.38    | 0.00    | 1.00    |
| R1FLONE   | 14012 | 0.33 | 0.47    | 0.00    | 1.00    |
| R2FLONE   | 12505 | 0.33 | 0.47    | 0.00    | 1.00    |
| R3FLONE   | 14437 | 0.30 | 0.46    | 0.00    | 1.00    |

|          |       |      |      |      |      |
|----------|-------|------|------|------|------|
| R4FLONE  | 13839 | 0.30 | 0.46 | 0.00 | 1.00 |
| R5FLONE  | 15759 | 0.29 | 0.45 | 0.00 | 1.00 |
| S1FLONE  | 9885  | 0.26 | 0.44 | 0.00 | 1.00 |
| S2FLONE  | 8728  | 0.27 | 0.44 | 0.00 | 1.00 |
| S3FLONE  | 9859  | 0.24 | 0.43 | 0.00 | 1.00 |
| S4FLONE  | 9177  | 0.24 | 0.43 | 0.00 | 1.00 |
| S5FLONE  | 7063  | 0.24 | 0.43 | 0.00 | 1.00 |
| R1ENLIFE | 13918 | 0.71 | 0.45 | 0.00 | 1.00 |
| R2ENLIFE | 12464 | 0.68 | 0.47 | 0.00 | 1.00 |
| R3ENLIFE | 14413 | 0.77 | 0.42 | 0.00 | 1.00 |
| R4ENLIFE | 13801 | 0.79 | 0.41 | 0.00 | 1.00 |
| R5ENLIFE | 15735 | 0.78 | 0.41 | 0.00 | 1.00 |
| S1ENLIFE | 9818  | 0.74 | 0.44 | 0.00 | 1.00 |
| S2ENLIFE | 8699  | 0.71 | 0.46 | 0.00 | 1.00 |
| S3ENLIFE | 9848  | 0.79 | 0.40 | 0.00 | 1.00 |
| S4ENLIFE | 9155  | 0.81 | 0.39 | 0.00 | 1.00 |
| S5ENLIFE | 7059  | 0.80 | 0.40 | 0.00 | 1.00 |
| R1FSAD   | 14006 | 0.40 | 0.49 | 0.00 | 1.00 |
| R2FSAD   | 12514 | 0.41 | 0.49 | 0.00 | 1.00 |
| R3FSAD   | 14433 | 0.40 | 0.49 | 0.00 | 1.00 |
| R4FSAD   | 13835 | 0.40 | 0.49 | 0.00 | 1.00 |
| R5FSAD   | 15760 | 0.39 | 0.49 | 0.00 | 1.00 |
| S1FSAD   | 9884  | 0.36 | 0.48 | 0.00 | 1.00 |
| S2FSAD   | 8737  | 0.37 | 0.48 | 0.00 | 1.00 |
| S3FSAD   | 9860  | 0.36 | 0.48 | 0.00 | 1.00 |
| S4FSAD   | 9173  | 0.35 | 0.48 | 0.00 | 1.00 |
| S5FSAD   | 7064  | 0.35 | 0.48 | 0.00 | 1.00 |
| R1FTIRED | 14012 | 0.60 | 0.49 | 0.00 | 1.00 |
| R2FTIRED | 12515 | 0.57 | 0.49 | 0.00 | 1.00 |
| R3FTIRED | 14440 | 0.59 | 0.49 | 0.00 | 1.00 |
| R4FTIRED | 13844 | 0.60 | 0.49 | 0.00 | 1.00 |
| R5FTIRED | 15767 | 0.58 | 0.49 | 0.00 | 1.00 |
| S1FTIRED | 9891  | 0.58 | 0.49 | 0.00 | 1.00 |
| S2FTIRED | 8737  | 0.56 | 0.50 | 0.00 | 1.00 |
| S3FTIRED | 9862  | 0.58 | 0.49 | 0.00 | 1.00 |
| S4FTIRED | 9179  | 0.59 | 0.49 | 0.00 | 1.00 |
| S5FTIRED | 7066  | 0.57 | 0.49 | 0.00 | 1.00 |
| R1ENERG  | 13938 | 0.44 | 0.50 | 0.00 | 1.00 |
| R2ENERG  | 12470 | 0.40 | 0.49 | 0.00 | 1.00 |
| R3ENERG  | 14419 | 0.48 | 0.50 | 0.00 | 1.00 |
| R4ENERG  | 13829 | 0.47 | 0.50 | 0.00 | 1.00 |
| R5ENERG  | 15738 | 0.46 | 0.50 | 0.00 | 1.00 |
| S1ENERG  | 9839  | 0.45 | 0.50 | 0.00 | 1.00 |
| S2ENERG  | 8703  | 0.41 | 0.49 | 0.00 | 1.00 |
| S3ENERG  | 9854  | 0.50 | 0.50 | 0.00 | 1.00 |
| S4ENERG  | 9172  | 0.49 | 0.50 | 0.00 | 1.00 |
| S5ENERG  | 7051  | 0.45 | 0.50 | 0.00 | 1.00 |
| R1CESD_M | 14055 | 3.50 | 2.66 | 0.00 | 9.00 |
| R2CESD_M | 12522 | 3.64 | 2.70 | 0.00 | 9.00 |
| R3CESD_M | 14446 | 3.36 | 2.64 | 0.00 | 9.00 |
| R4CESD_M | 13846 | 3.33 | 2.64 | 0.00 | 9.00 |
| R5CESD_M | 15775 | 3.27 | 2.60 | 0.00 | 9.00 |
| S1CESD_M | 9916  | 3.25 | 2.59 | 0.00 | 9.00 |

|           |       |      |      |      |      |
|-----------|-------|------|------|------|------|
| S2CESD_M  | 8740  | 3.41 | 2.63 | 0.00 | 9.00 |
| S3CESD_M  | 9865  | 3.13 | 2.55 | 0.00 | 9.00 |
| S4CESD_M  | 9181  | 3.10 | 2.56 | 0.00 | 9.00 |
| S5CESD_M  | 7070  | 3.11 | 2.54 | 0.00 | 9.00 |
| R1CESDM_M | 15186 | 0.71 | 2.38 | 0.00 | 9.00 |
| R2CESDM_M | 13704 | 0.79 | 2.53 | 0.00 | 9.00 |
| R3CESDM_M | 15723 | 0.74 | 2.46 | 0.00 | 9.00 |
| R4CESDM_M | 14779 | 0.58 | 2.19 | 0.00 | 9.00 |
| R5CESDM_M | 17114 | 0.71 | 2.42 | 0.00 | 9.00 |
| S1CESDM_M | 10648 | 0.66 | 2.29 | 0.00 | 9.00 |
| S2CESDM_M | 9564  | 0.79 | 2.53 | 0.00 | 9.00 |
| S3CESDM_M | 10592 | 0.63 | 2.28 | 0.00 | 9.00 |
| S4CESDM_M | 9652  | 0.45 | 1.94 | 0.00 | 9.00 |
| S5CESDM_M | 7638  | 0.68 | 2.36 | 0.00 | 9.00 |

## Categorical Variable Codes

| Value-----                    | R1DEPRES | R2DEPRES | R3DEPRES | R4DEPRES | R5DEPRES |
|-------------------------------|----------|----------|----------|----------|----------|
| .d:DK                         | 87       | 17       | 13       | 10       | 8        |
| .m:Missing                    | 4        |          |          | 3        |          |
| .p:Proxy interview, not asked | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     | 56       | 6        | 8        | 7        | 8        |
| 0.No                          | 8723     | 7596     | 9416     | 9302     | 10705    |
| 1.Yes                         | 5284     | 4907     | 5011     | 4528     | 5065     |

| Value-----                    | S1DEPRES | S2DEPRES | S3DEPRES | S4DEPRES | S5DEPRES |
|-------------------------------|----------|----------|----------|----------|----------|
| .d:DK                         | 63       | 11       | 10       | 4        | 4        |
| .m:Missing                    | 3        |          |          |          |          |
| .p:Proxy interview, not asked | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     | 36       | 5        | 6        | 4        | 3        |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| 0.No                          | 6519     | 5586     | 6722     | 6466     | 4957     |
| 1.Yes                         | 3367     | 3141     | 3128     | 2708     | 2111     |

| Value-----                    | R1EFFORT | R2EFFORT | R3EFFORT | R4EFFORT | R5EFFORT |
|-------------------------------|----------|----------|----------|----------|----------|
| .d:DK                         | 85       | 11       | 15       | 7        | 13       |
| .m:Missing                    | 4        |          |          | 3        |          |
| .p:Proxy interview, not asked | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     | 81       | 5        | 7        | 7        | 12       |
| 0.No                          | 8896     | 7942     | 9304     | 8886     | 10580    |
| 1.Yes                         | 5088     | 4568     | 5122     | 4947     | 5181     |

| Value-----                    | S1EFFORT | S2EFFORT | S3EFFORT | S4EFFORT | S5EFFORT |
|-------------------------------|----------|----------|----------|----------|----------|
| .d:DK                         | 60       | 8        | 7        | 4        | 5        |
| .m:Missing                    | 3        |          |          |          |          |
| .p:Proxy interview, not asked | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     | 56       | 4        | 6        | 5        | 5        |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| 0.No                          | 6499     | 5695     | 6525     | 6043     | 4828     |
| 1.Yes                         | 3370     | 3036     | 3328     | 3130     | 2237     |

| Value-----                    | R1SLEEP | R2SLEEP | R3SLEEP | R4SLEEP | R5SLEEP |
|-------------------------------|---------|---------|---------|---------|---------|
| .d:DK                         | 60      | 7       | 7       | 3       | 5       |
| .m:Missing                    | 4       |         |         | 3       |         |
| .p:Proxy interview, not asked | 1032    | 1178    | 1275    | 929     | 1328    |
| .r:Refuse                     | 56      | 6       | 8       | 1       | 12      |
| 0.No                          | 8898    | 7620    | 8391    | 8002    | 9218    |
| 1.Yes                         | 5136    | 4893    | 6042    | 5841    | 6551    |

| Value-----                    | S1SLEEP | S2SLEEP | S3SLEEP | S4SLEEP | S5SLEEP |
|-------------------------------|---------|---------|---------|---------|---------|
| .d:DK                         | 43      | 5       | 4       | 3       | 2       |
| .m:Missing                    | 3       |         |         |         |         |
| .p:Proxy interview, not asked | 660     | 821     | 726     | 470     | 563     |
| .r:Refuse                     | 39      | 2       | 7       | 1       | 5       |
| .u:Unmar                      | 4205    | 4009    | 4782    | 4847    | 5227    |

|                               |          |          |          |          |          |
|-------------------------------|----------|----------|----------|----------|----------|
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| 0.No                          | 6463     | 5465     | 5874     | 5407     | 4186     |
| 1.Yes                         | 3440     | 3271     | 3981     | 3771     | 2882     |
| Value-----                    | R1WHAPPY | R2WHAPPY | R3WHAPPY | R4WHAPPY | R5WHAPPY |
| .d:DK                         | 80       | 35       | 19       | 18       | 18       |
| .m:Missing                    | 4        |          |          | 3        |          |
| .p:Proxy interview, not asked | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     | 74       | 14       | 14       | 15       | 26       |
| 0.No                          | 3437     | 3382     | 2923     | 2606     | 3064     |
| 1.Yes                         | 10559    | 9095     | 11492    | 11208    | 12678    |
| Value-----                    | S1WHAPPY | S2WHAPPY | S3WHAPPY | S4WHAPPY | S5WHAPPY |
| .d:DK                         | 58       | 26       | 12       | 12       | 8        |
| .m:Missing                    | 3        |          |          |          |          |
| .p:Proxy interview, not asked | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     | 51       | 9        | 5        | 9        | 9        |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| 0.No                          | 2192     | 2150     | 1770     | 1532     | 1272     |
| 1.Yes                         | 7684     | 6558     | 8079     | 7629     | 5786     |
| Value-----                    | R1FLONE  | R2FLONE  | R3FLONE  | R4FLONE  | R5FLONE  |
| .d:DK                         | 68       | 15       | 3        | 4        | 12       |
| .m:Missing                    | 4        |          |          | 3        |          |
| .p:Proxy interview, not asked | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     | 70       | 6        | 8        | 4        | 15       |
| 0.No                          | 9407     | 8409     | 10086    | 9648     | 11153    |
| 1.Yes                         | 4605     | 4096     | 4351     | 4191     | 4606     |
| Value-----                    | S1FLONE  | S2FLONE  | S3FLONE  | S4FLONE  | S5FLONE  |
| .d:DK                         | 50       | 11       | 2        | 2        | 4        |
| .m:Missing                    | 3        |          |          |          |          |
| .p:Proxy interview, not asked | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     | 50       | 4        | 5        | 3        | 8        |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| 0.No                          | 7299     | 6368     | 7491     | 6938     | 5379     |
| 1.Yes                         | 2586     | 2360     | 2368     | 2239     | 1684     |
| Value-----                    | R1ENLIFE | R2ENLIFE | R3ENLIFE | R4ENLIFE | R5ENLIFE |
| .d:DK                         | 128      | 44       | 15       | 31       | 31       |
| .m:Missing                    | 4        |          |          | 3        |          |
| .p:Proxy interview, not asked | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     | 104      | 18       | 20       | 15       | 20       |
| 0.No                          | 3975     | 3954     | 3296     | 2888     | 3429     |
| 1.Yes                         | 9943     | 8510     | 11117    | 10913    | 12306    |
| Value-----                    | S1ENLIFE | S2ENLIFE | S3ENLIFE | S4ENLIFE | S5ENLIFE |
| .d:DK                         | 95       | 31       | 9        | 16       | 9        |
| .m:Missing                    | 3        |          |          |          |          |
| .p:Proxy interview, not asked | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     | 72       | 13       | 9        | 11       | 7        |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |
| 0.No                          | 2587     | 2548     | 2034     | 1718     | 1437     |
| 1.Yes                         | 7231     | 6151     | 7814     | 7437     | 5622     |
| Value-----                    | R1FSAD   | R2FSAD   | R3FSAD   | R4FSAD   | R5FSAD   |
| .d:DK                         | 75       | 7        | 4        | 9        | 8        |
| .m:Missing                    | 4        |          |          | 4        |          |
| .p:Proxy interview, not asked | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     | 69       | 5        | 11       | 2        | 18       |
| 0.No                          | 8423     | 7423     | 8594     | 8370     | 9691     |
| 1.Yes                         | 5583     | 5091     | 5839     | 5465     | 6069     |
| Value-----                    | S1FSAD   | S2FSAD   | S3FSAD   | S4FSAD   | S5FSAD   |
| .d:DK                         | 53       | 3        | 2        | 6        | 2        |
| .m:Missing                    | 3        |          |          | 1        |          |
| .p:Proxy interview, not asked | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     | 48       | 3        | 4        | 2        | 9        |
| .u:Unmar                      | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      | 333      | 131      | 349      | 280      | 501      |

|                               |  |          |          |          |          |          |
|-------------------------------|--|----------|----------|----------|----------|----------|
| 0.No                          |  | 6347     | 5534     | 6266     | 5923     | 4619     |
| 1.Yes                         |  | 3537     | 3203     | 3594     | 3250     | 2445     |
| Value-----                    |  | R1FTIRED | R2FTIRED | R3FTIRED | R4FTIRED | R5FTIRED |
| .d:DK                         |  | 72       | 7        | 5        | 1        | 7        |
| .m:Missing                    |  | 4        |          |          | 4        |          |
| .p:Proxy interview, not asked |  | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 66       | 4        | 3        | 1        | 12       |
| 0.No                          |  | 5665     | 5331     | 5906     | 5536     | 6602     |
| 1.Yes                         |  | 8347     | 7184     | 8534     | 8308     | 9165     |
| Value-----                    |  | S1FTIRED | S2FTIRED | S3FTIRED | S4FTIRED | S5FTIRED |
| .d:DK                         |  | 51       | 4        | 3        | 1        | 4        |
| .m:Missing                    |  | 3        |          |          | 1        |          |
| .p:Proxy interview, not asked |  | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     |  | 43       | 2        | 1        | 1        | 5        |
| .u:Unmar                      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |
| 0.No                          |  | 4127     | 3849     | 4124     | 3748     | 3032     |
| 1.Yes                         |  | 5764     | 4888     | 5738     | 5431     | 4034     |
| Value-----                    |  | R1ENERG  | R2ENERG  | R3ENERG  | R4ENERG  | R5ENERG  |
| .d:DK                         |  | 122      | 42       | 11       | 9        | 27       |
| .m:Missing                    |  | 4        |          |          | 4        |          |
| .p:Proxy interview, not asked |  | 1032     | 1178     | 1275     | 929      | 1328     |
| .r:Refuse                     |  | 90       | 14       | 18       | 8        | 21       |
| 0.No                          |  | 7770     | 7512     | 7479     | 7298     | 8433     |
| 1.Yes                         |  | 6168     | 4958     | 6940     | 6531     | 7305     |
| Value-----                    |  | S1ENERG  | S2ENERG  | S3ENERG  | S4ENERG  | S5ENERG  |
| .d:DK                         |  | 85       | 33       | 6        | 5        | 12       |
| .m:Missing                    |  | 3        |          |          | 1        |          |
| .p:Proxy interview, not asked |  | 660      | 821      | 726      | 470      | 563      |
| .r:Refuse                     |  | 61       | 7        | 6        | 4        | 12       |
| .u:Unmar                      |  | 4205     | 4009     | 4782     | 4847     | 5227     |
| .v:SP NR                      |  | 333      | 131      | 349      | 280      | 501      |
| 0.No                          |  | 5406     | 5175     | 4972     | 4718     | 3879     |
| 1.Yes                         |  | 4433     | 3528     | 4882     | 4454     | 3172     |

## How Constructed

RwDEPRES, RweFFORT, RwsLEEPR, RwwHAPPY, RwFLONE, RwenLIFE, RwfSAD, RwfTIRED and RweNERG are yes/no indicators for whether the respondent experienced certain feelings the majority of the time during the week prior to the interview. A code of 0 indicates that the respondent did not experience a particular feeling. A code of 1 indicates that the respondent experienced a particular feeling.

RwDEPRES indicates whether the respondent felt depressed. RweFFORT indicates whether the respondent felt that everything was an effort. RwsLEEPR indicates whether their sleep was restless. RwwHAPPY indicates whether the respondent was happy. RwFLONE indicates whether the respondent felt lonely. RwenLIFE indicates whether the respondent enjoyed life. RwfSAD indicates whether the respondent felt sad. RwfTIRED indicates whether the respondent felt tired. RweNERG indicates whether the respondent had a lot energy.

When respondents "don't know" or refuse to answer, the variables are assigned special missing values .d or .r, respectively. Variables are set to special missing value .p for proxy interviews, to special missing value .m for other missing responses, and to plain missing (.) for respondents who did not respond to the current wave.

SwDEPRES, SwEFFORT, SwSLEEPR, SwWHAPPY, SwFLONE, SwENLIFE, SwFSAD, SwFTIRED and SwENERG indicate whether the respondent's spouse reported certain feelings and are taken directly from the spouse's RwDEPRES, RweFFORT, RwsLEEPR, RwwHAPPY, RwFLONE, RwenLIFE, RwfSAD, RwfTIRED and RweNERG variables, respectively. SwDEPRES, SwEFFORT, SwSLEEPR, SwWHAPPY, SwFLONE, SwENLIFE, SwFSAD, SwFTIRED and SwENERG employ the special missing value .u, when the respondent does not report being coupled in the current wave, and the special missing value .v, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

RwCESD\_M is an MHAS specific variable that indicates the sum of RwDEPRES, RweFFORT, RwsLEEPR, (1-RwwHAPPY), RwFLONE, (1-RwenLIFE), RwfSAD, RwfTIRED and (1-RweNERG). Thus the higher the score, the more negative the respondent's feelings were during the past week. RwCESDM\_M is the number of CESD questions

with missing values, ranging from 0 to 9. `RwCESD_M` is calculated for all respondents who answered at least one of the CESD component questions, that is respondents with `RwCESDM_M` value of less than 9. `RwCESD_M` is assigned special missing `.d`, `.r`, or `.m`, for don't know, refused, or other missing answers. `RwCESD_M` and `RwCESDM_M` are set to plain missing (`.`) for respondents who did not respond to the current wave.

`SwCESD_M` and `SwCESDM_M` are taken directly from the spouse's values of `RwCESD_M` and `RwCESDM_M`, respectively. `SwCESD_M` and `SwCESDM_M` employ the special missing value `.u`, when the respondent does not report being coupled in the current wave, and the special missing value `.v`, when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

No differences known.

## Differences with the RAND HRS/Harmonized HRS

The MHAS includes a modified version of the CESD that includes the same `RwDEPRES`, `RwEFFORT`, `RwSLEEPR`, `RwWHAPPY`, `RwFLONE`, `RwENLIFE`, and `RwFSAD` items included in the version used in the HRS. Two more items, `RwFTIRED` (whether the respondent felt tired) and `RwENERG` (whether the respondent had a lot energy) were also included instead of `RwGOING`, used in the HRS. The difference between the two CESD versions impacts the summary indices. Thus, in the Harmonized MHAS two specific indices were created, `RwCESD_M` and `RwCESDM_M`, with values ranging from 0 to 9.

## MHAS Variables Used

### Wave 1:

|                   |            |
|-------------------|------------|
| <code>C52A</code> | depression |
| <code>C52B</code> | effort     |
| <code>C52D</code> | happiness  |
| <code>C52E</code> | loneliness |
| <code>C52F</code> | enjoy life |
| <code>C52G</code> | sadness    |
| <code>C52H</code> | felt tired |
| <code>C52I</code> | energy     |

### Wave 2:

|                    |  |
|--------------------|--|
| <code>C49_1</code> | last week's majority emotions - depressed                |
| <code>C49_2</code> | last week's majority emotions - everything was an effort |
| <code>C49_3</code> | last week's majority emotions - disturbed sleep          |
| <code>C49_4</code> | last week's majority emotions - happy                    |
| <code>C49_5</code> | last week's majority emotions - alone                    |
| <code>C49_6</code> | last week's majority emotions - enjoying life            |
| <code>C49_7</code> | last week's majority emotions - sad                      |
| <code>C49_8</code> | last week's majority emotions - tired                    |
| <code>C49_9</code> | last week's majority emotions - had a lot of energy      |

### Wave 3:

|                       |   |
|-----------------------|---|
| <code>C49_1_12</code> | Within the past week: Respondent was depressed              |
| <code>C49_2_12</code> | Within the past week: Respondent experienced difficulty     |
| <code>C49_3_12</code> | Within the past week: Respondent experienced restless sleep |
| <code>C49_4_12</code> | Within the past week: Respondent was happy                  |
| <code>C49_5_12</code> | Within the past week: Respondent was lonely                 |
| <code>C49_6_12</code> | Within the past week: Respondent enjoyed life               |
| <code>C49_7_12</code> | Within the past week: Respondent was sad                    |
| <code>C49_8_12</code> | Within the past week: Respondent felt tired                 |
| <code>C49_9_12</code> | Within the past week: Respondent was energetic              |

### Wave 4:

|                       |  |
|-----------------------|--|
| <code>C49_1_15</code> | Last week, the majority of the time: Respondent felt depressed           |
| <code>C49_2_15</code> | Last week, the majority of the time: Respondent felt tired               |
| <code>C49_3_15</code> | Last week, the majority of the time: Respondent had restless sleep       |
| <code>C49_4_15</code> | Last week, the majority of the time: Respondent felt happy               |
| <code>C49_5_15</code> | Last week, the majority of the time: Respondent felt lonely              |
| <code>C49_6_15</code> | Last week, the majority of the time: Respondent felt he/she enjoyed life |
| <code>C49_7_15</code> | Last week, the majority of the time: Respondent felt sad                 |

|          |   |
|----------|---|
| C49_8_15 | Last week, the majority of the time: Respondent felt ti |
| C49_9_15 | Last week, the majority of the time: Respondent felt ve |
| Wave 5:  |   |
| C49_1_18 | Last week, the majority of the time: R felt depressed   |
| C49_2_18 | Last week, the majority of the time: R felt everything  |
| C49_3_18 | Last week, the majority of the time: R had restless sle |
| C49_4_18 | Last week, the majority of the time: R felt happy       |
| C49_5_18 | Last week, the majority of the time: R felt lonely      |
| C49_6_18 | Last week, the majority of the time: R felt he/she enjo |
| C49_7_18 | Last week, the majority of the time: R felt sad         |
| C49_8_18 | Last week, the majority of the time: R felt tired       |
| C49_9_18 | Last week, the majority of the time: R felt very energ  |



|                                     |
|-------------------------------------|
| <b>Satisfaction with Life Scale</b> |
|-------------------------------------|

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 3    | R3LIDEAL3  | r3lideal3: w3 R Life is close to ideal                       | Categ |
| 4    | R4LIDEAL3  | r4lideal3: w4 R Life is close to ideal                       | Categ |
| 5    | R5LIDEAL3  | r5lideal3: w5 R Life is close to ideal                       | Categ |
| 3    | S3LIDEAL3  | s3lideal3: w3 S Life is close to ideal                       | Categ |
| 4    | S4LIDEAL3  | s4lideal3: w4 S Life is close to ideal                       | Categ |
| 5    | S5LIDEAL3  | s5lideal3: w5 S Life is close to ideal                       | Categ |
| 3    | R3LEXCL3   | r3lexcl3: w3 R Life conditions are excellent                 | Categ |
| 4    | R4LEXCL3   | r4lexcl3: w4 R Life conditions are excellent                 | Categ |
| 5    | R5LEXCL3   | r5lexcl3: w5 R Life conditions are excellent                 | Categ |
| 3    | S3LEXCL3   | s3lexcl3: w3 S Life conditions are excellent                 | Categ |
| 4    | S4LEXCL3   | s4lexcl3: w4 S Life conditions are excellent                 | Categ |
| 5    | S5LEXCL3   | s5lexcl3: w5 S Life conditions are excellent                 | Categ |
| 3    | R3LSTSF3   | r3lstsf3: w3 R Satisfied with life                           | Categ |
| 4    | R4LSTSF3   | r4lstsf3: w4 R Satisfied with life                           | Categ |
| 5    | R5LSTSF3   | r5lstsf3: w5 R Satisfied with life                           | Categ |
| 3    | S3LSTSF3   | s3lstsf3: w3 S Satisfied with life                           | Categ |
| 4    | S4LSTSF3   | s4lstsf3: w4 S Satisfied with life                           | Categ |
| 5    | S5LSTSF3   | s5lstsf3: w5 S Satisfied with life                           | Categ |
| 3    | R3LIMPTT3  | r3limptt3: w3 R Gotten important things in life              | Categ |
| 4    | R4LIMPTT3  | r4limptt3: w4 R Gotten important things in life              | Categ |
| 5    | R5LIMPTT3  | r5limptt3: w5 R Gotten important things in life              | Categ |
| 3    | S3LIMPTT3  | s3limptt3: w3 S Gotten important things in life              | Categ |
| 4    | S4LIMPTT3  | s4limptt3: w4 S Gotten important things in life              | Categ |
| 5    | S5LIMPTT3  | s5limptt3: w5 S Gotten important things in life              | Categ |
| 3    | R3LCHNOT3  | r3lchnot3: w3 R Change almost nothing if lived again         | Categ |
| 4    | R4LCHNOT3  | r4lchnot3: w4 R Change almost nothing if lived again         | Categ |
| 5    | R5LCHNOT3  | r5lchnot3: w5 R Change almost nothing if lived again         | Categ |
| 3    | S3LCHNOT3  | s3lchnot3: w3 S Change almost nothing if lived again         | Categ |
| 4    | S4LCHNOT3  | s4lchnot3: w4 S Change almost nothing if lived again         | Categ |
| 5    | S5LCHNOT3  | s5lchnot3: w5 S Change almost nothing if lived again         | Categ |
| 3    | R3LSATSC3  | r3lsatasc3: w3 R Satisfaction with life scale score          | Cont  |
| 4    | R4LSATSC3  | r4lsatasc3: w4 R Satisfaction with life scale score          | Cont  |
| 5    | R5LSATSC3  | r5lsatasc3: w5 R Satisfaction with life scale score          | Cont  |
| 3    | S3LSATSC3  | s3lsatasc3: w3 S Satisfaction with life scale score          | Cont  |
| 4    | S4LSATSC3  | s4lsatasc3: w4 S Satisfaction with life scale score          | Cont  |
| 5    | S5LSATSC3  | s5lsatasc3: w5 S Satisfaction with life scale score          | Cont  |
| 3    | R3LSATSC3M | r3lsatasc3m: w3 R Satisfaction with life scale missing count | Cont  |
| 4    | R4LSATSC3M | r4lsatasc3m: w4 R Satisfaction with life scale missing count | Cont  |
| 5    | R5LSATSC3M | r5lsatasc3m: w5 R Satisfaction with life scale missing count | Cont  |
| 3    | S3LSATSC3M | s3lsatasc3m: w3 S Satisfaction with life scale missing count | Cont  |
| 4    | S4LSATSC3M | s4lsatasc3m: w4 S Satisfaction with life scale missing count | Cont  |
| 5    | S5LSATSC3M | s5lsatasc3m: w5 S Satisfaction with life scale missing count | Cont  |

## Descriptive Statistics

| Variable   | N     | Mean | Std Dev | Minimum | Maximum |
|------------|-------|------|---------|---------|---------|
| R3LIDEAL3  | 14160 | 2.59 | 0.70    | 1.00    | 3.00    |
| R4LIDEAL3  | 13634 | 2.58 | 0.70    | 1.00    | 3.00    |
| R5LIDEAL3  | 15473 | 2.57 | 0.71    | 1.00    | 3.00    |
| S3LIDEAL3  | 9719  | 2.62 | 0.68    | 1.00    | 3.00    |
| S4LIDEAL3  | 9086  | 2.60 | 0.68    | 1.00    | 3.00    |
| S5LIDEAL3  | 6945  | 2.60 | 0.69    | 1.00    | 3.00    |
| R3LEXCL3   | 14325 | 2.48 | 0.71    | 1.00    | 3.00    |
| R4LEXCL3   | 13754 | 2.46 | 0.73    | 1.00    | 3.00    |
| R5LEXCL3   | 15588 | 2.48 | 0.72    | 1.00    | 3.00    |
| S3LEXCL3   | 9808  | 2.51 | 0.70    | 1.00    | 3.00    |
| S4LEXCL3   | 9139  | 2.48 | 0.71    | 1.00    | 3.00    |
| S5LEXCL3   | 6983  | 2.51 | 0.70    | 1.00    | 3.00    |
| R3LSTSF3   | 14370 | 2.79 | 0.52    | 1.00    | 3.00    |
| R4LSTSF3   | 13788 | 2.79 | 0.53    | 1.00    | 3.00    |
| R5LSTSF3   | 15620 | 2.79 | 0.53    | 1.00    | 3.00    |
| S3LSTSF3   | 9833  | 2.81 | 0.51    | 1.00    | 3.00    |
| S4LSTSF3   | 9155  | 2.81 | 0.51    | 1.00    | 3.00    |
| S5LSTSF3   | 6996  | 2.82 | 0.50    | 1.00    | 3.00    |
| R3LIMPTT3  | 14340 | 2.74 | 0.57    | 1.00    | 3.00    |
| R4LIMPTT3  | 13749 | 2.74 | 0.58    | 1.00    | 3.00    |
| R5LIMPTT3  | 15580 | 2.75 | 0.56    | 1.00    | 3.00    |
| S3LIMPTT3  | 9817  | 2.76 | 0.55    | 1.00    | 3.00    |
| S4LIMPTT3  | 9140  | 2.76 | 0.56    | 1.00    | 3.00    |
| S5LIMPTT3  | 6980  | 2.77 | 0.54    | 1.00    | 3.00    |
| R3LCHNOT3  | 14241 | 2.46 | 0.79    | 1.00    | 3.00    |
| R4LCHNOT3  | 13669 | 2.46 | 0.80    | 1.00    | 3.00    |
| R5LCHNOT3  | 15523 | 2.52 | 0.76    | 1.00    | 3.00    |
| S3LCHNOT3  | 9769  | 2.48 | 0.78    | 1.00    | 3.00    |
| S4LCHNOT3  | 9102  | 2.47 | 0.80    | 1.00    | 3.00    |
| S5LCHNOT3  | 6960  | 2.55 | 0.75    | 1.00    | 3.00    |
| R3LSATSC3  | 14356 | 2.61 | 0.46    | 1.00    | 3.00    |
| R4LSATSC3  | 13774 | 2.61 | 0.46    | 1.00    | 3.00    |
| R5LSATSC3  | 15607 | 2.62 | 0.46    | 1.00    | 3.00    |
| S3LSATSC3  | 9828  | 2.63 | 0.45    | 1.00    | 3.00    |
| S4LSATSC3  | 9152  | 2.62 | 0.45    | 1.00    | 3.00    |
| S5LSATSC3  | 6992  | 2.65 | 0.45    | 1.00    | 3.00    |
| R3LSATSC3M | 26839 | 2.34 | 2.48    | 0.00    | 5.00    |
| R4LSATSC3M | 26839 | 2.44 | 2.49    | 0.00    | 5.00    |
| R5LSATSC3M | 26839 | 2.10 | 2.46    | 0.00    | 5.00    |
| S3LSATSC3M | 10592 | 0.38 | 1.29    | 0.00    | 5.00    |
| S4LSATSC3M | 9863  | 0.37 | 1.29    | 0.00    | 5.00    |
| S5LSATSC3M | 8687  | 0.99 | 1.98    | 0.00    | 5.00    |

Categorical Variable Codes

|                               |           |           |           |
|-------------------------------|-----------|-----------|-----------|
| Value-----                    | R3LIDEAL3 | R4LIDEAL3 | R5LIDEAL3 |
| .d:DK                         | 214       | 146       | 171       |
| .m:Missing                    |           | 23        |           |
| .p:Proxy interview, not asked | 1275      | 929       | 1328      |

|                               |  |           |           |           |
|-------------------------------|--|-----------|-----------|-----------|
| .r:Refuse                     |  | 74        | 47        | 142       |
| 1.Disagree                    |  | 1734      | 1724      | 1996      |
| 2.Neutral                     |  | 2280      | 2316      | 2693      |
| 3.Agree                       |  | 10146     | 9594      | 10784     |
| Value-----                    |  | S3LIDEAL3 | S4LIDEAL3 | S5LIDEAL3 |
| .d:DK                         |  | 108       | 69        | 68        |
| .m:Missing                    |  |           | 5         |           |
| .p:Proxy interview, not asked |  | 726       | 470       | 563       |
| .r:Refuse                     |  | 39        | 22        | 62        |
| .u:Unmar                      |  | 4782      | 4847      | 5227      |
| .v:SP NR                      |  | 349       | 280       | 501       |
| 1.Disagree                    |  | 1116      | 1041      | 815       |
| 2.Neutral                     |  | 1480      | 1516      | 1140      |
| 3.Agree                       |  | 7123      | 6529      | 4990      |
| Value-----                    |  | R3LEXCL3  | R4LEXCL3  | R5LEXCL3  |
| .d:DK                         |  | 76        | 50        | 77        |
| .m:Missing                    |  |           | 23        |           |
| .p:Proxy interview, not asked |  | 1275      | 929       | 1328      |
| .r:Refuse                     |  | 47        | 23        | 121       |
| 1.Disagree                    |  | 1873      | 1911      | 2081      |
| 2.Neutral                     |  | 3747      | 3641      | 3992      |
| 3.Agree                       |  | 8705      | 8202      | 9515      |
| Value-----                    |  | S3LEXCL3  | S4LEXCL3  | S5LEXCL3  |
| .d:DK                         |  | 33        | 22        | 32        |
| .m:Missing                    |  |           | 5         |           |
| .p:Proxy interview, not asked |  | 726       | 470       | 563       |
| .r:Refuse                     |  | 25        | 16        | 60        |
| .u:Unmar                      |  | 4782      | 4847      | 5227      |
| .v:SP NR                      |  | 349       | 280       | 501       |
| 1.Disagree                    |  | 1156      | 1170      | 826       |
| 2.Neutral                     |  | 2521      | 2436      | 1737      |
| 3.Agree                       |  | 6131      | 5533      | 4420      |
| Value-----                    |  | R3LSTSF3  | R4LSTSF3  | R5LSTSF3  |
| .d:DK                         |  | 51        | 27        | 59        |
| .m:Missing                    |  |           | 23        |           |
| .p:Proxy interview, not asked |  | 1275      | 929       | 1328      |
| .r:Refuse                     |  | 27        | 12        | 107       |
| 1.Disagree                    |  | 789       | 811       | 922       |
| 2.Neutral                     |  | 1414      | 1205      | 1429      |
| 3.Agree                       |  | 12167     | 11772     | 13269     |
| Value-----                    |  | S3LSTSF3  | S4LSTSF3  | S5LSTSF3  |
| .d:DK                         |  | 18        | 14        | 28        |
| .m:Missing                    |  |           | 5         |           |
| .p:Proxy interview, not asked |  | 726       | 470       | 563       |
| .r:Refuse                     |  | 15        | 8         | 51        |
| .u:Unmar                      |  | 4782      | 4847      | 5227      |
| .v:SP NR                      |  | 349       | 280       | 501       |
| 1.Disagree                    |  | 508       | 500       | 351       |
| 2.Neutral                     |  | 880       | 761       | 567       |
| 3.Agree                       |  | 8445      | 7894      | 6078      |
| Value-----                    |  | R3LIMPTT3 | R4LIMPTT3 | R5LIMPTT3 |
| .d:DK                         |  | 69        | 53        | 92        |
| .m:Missing                    |  |           | 23        |           |
| .p:Proxy interview, not asked |  | 1275      | 929       | 1328      |
| .r:Refuse                     |  | 39        | 25        | 114       |
| 1.Disagree                    |  | 959       | 983       | 1018      |
| 2.Neutral                     |  | 1813      | 1623      | 1825      |
| 3.Agree                       |  | 11568     | 11143     | 12737     |
| Value-----                    |  | S3LIMPTT3 | S4LIMPTT3 | S5LIMPTT3 |
| .d:DK                         |  | 28        | 22        | 41        |
| .m:Missing                    |  |           | 5         |           |
| .p:Proxy interview, not asked |  | 726       | 470       | 563       |
| .r:Refuse                     |  | 21        | 15        | 54        |
| .u:Unmar                      |  | 4782      | 4847      | 5227      |
| .v:SP NR                      |  | 349       | 280       | 501       |
| 1.Disagree                    |  | 607       | 601       | 409       |

|                               |  |           |           |           |
|-------------------------------|--|-----------|-----------|-----------|
| 2.Neutral                     |  | 1172      | 1037      | 768       |
| 3.Agree                       |  | 8038      | 7502      | 5803      |
| Value-----                    |  | R3LCHNOT3 | R4LCHNOT3 | R5LCHNOT3 |
| .d:DK                         |  | 151       | 128       | 129       |
| .m:Missing                    |  |           | 23        |           |
| .p:Proxy interview, not asked |  | 1275      | 929       | 1328      |
| .r:Refuse                     |  | 56        | 30        | 134       |
| 1.Disagree                    |  | 2714      | 2717      | 2602      |
| 2.Neutral                     |  | 2253      | 1978      | 2313      |
| 3.Agree                       |  | 9274      | 8974      | 10608     |
| Value-----                    |  | S3LCHNOT3 | S4LCHNOT3 | S5LCHNOT3 |
| .d:DK                         |  | 65        | 57        | 55        |
| .m:Missing                    |  |           | 5         |           |
| .p:Proxy interview, not asked |  | 726       | 470       | 563       |
| .r:Refuse                     |  | 32        | 18        | 60        |
| .u:Unmar                      |  | 4782      | 4847      | 5227      |
| .v:SP NR                      |  | 349       | 280       | 501       |
| 1.Disagree                    |  | 1778      | 1777      | 1093      |
| 2.Neutral                     |  | 1514      | 1253      | 977       |
| 3.Agree                       |  | 6477      | 6072      | 4890      |

## How Constructed

RwLIDEAL3, RwLEXCL3, RwLSTSF3, RwLIMPTT3, and RwLCHNOT3 indicate how much the respondent agrees with specific statements about their satisfaction with life. RwLIDEAL3 indicates how much the respondent agrees with the statement, in most things my life is close to my ideal. RwLEXCL3 indicates how much the respondent agrees with the statement, the conditions of my life are excellent. RwLSTSF3 indicates how much the respondent agrees with the statement, I am satisfied with my life. RwLIMPTT3 indicates how much the respondent agrees with the statement, so far I have got the important things that are important to me in life. RwLCHNOT3 indicates how much the respondent agrees with the statement, if I were to be born again I would change almost nothing in my life. RwLIDEAL3, RwLEXCL3, RwLSTSF3, RwLIMPTT3, and RwLCHNOT3 are coded as follows: 1.disagree, 2.neutral, 3.agree. Please note that the answer scale in the original questions goes from 1.agree to 3.disagree, which have been reverse-coded for these variables to 1.disagree to 3.agree. These questions are not asked during interviews completed by a proxy on behalf of the respondent and special missing .p is assigned in these cases. Don't know, refused, or other missing values are assigned special missing codes .d, .r, .m, respectively. RwLIDEAL3, RwLEXCL3, RwLSTSF3, RwLIMPTT3, and RwLCHNOT3 are set to plain missing (.) for respondents who did not respond to the current wave.

SwLIDEAL3, SwLEXCL3, SwLSTSF3, SwLIMPTT3, and SwLCHNOT3 indicate how much the respondent's spouse agrees with specific statements about their satisfaction with life and are taken directly from the spouse's responses to RwLIDEAL3, RwLEXCL3, RwLSTSF3, RwLIMPTT3, and RwLCHNOT3, respectively. In addition to the special missing codes used in RwLIDEAL3, RwLEXCL3, RwLSTSF3, RwLIMPTT3, and RwLCHNOT3, SwLIDEAL3, SwLEXCL3, SwLSTSF3, SwLIMPTT3, and SwLCHNOT3 employ two other missing codes, .u and .v. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

RwLSATSC3 is the mean of RwLIDEAL3, RwLEXCL3, RwLSTSF3, RwLIMPTT3, and RwLCHNOT3 using a 3-item scale ranging from 1.disagree to 3.agree. Thus the higher the score, the more the respondent is satisfied with their life. RwLSATSC3 is not computed for respondents with 3 or more missing values for RwLIDEAL3, RwLEXCL3, RwLSTSF3, RwLIMPTT3, and RwLCHNOT3. Respondents whose survey was completed by a proxy on their behalf who are not asked these questions are assigned special missing .p. Don't know, refused, or other missing responses to the components of RwLSATSC3 are assigned special missing .d, .r, .m, respectively. RwLSATSCM3 indicates how many individual measures used to derive RwLSATSC3 are missing. RwLSATSC3 and RwLSATSCM3 are assigned plain missing (.) if the respondent did not participate in the current wave.

SwLSATSC3 is the respondent's spouse's mean satisfaction with life using a 3-item scale, and its values are taken from RwLSATSC3. SwLSATSCM3 indicates the number of missing components for the respondent's spouse's mean satisfaction with life, and its values are taken from RwLSATSCM3. In addition to the special missing codes used in RwLSATSC3 and RwLSATSCM3, SwLSATSC3 and SwLSATSCM3 employ two other missing codes, .u and .v. Special missing value .u is used when the respondent does not report being coupled in the current wave. Special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

## Cross Wave Differences in MHAS

Satisfaction with life scale questions were added to the MHAS starting in Wave 3.

## Differences with the RAND HRS/Harmonized HRS

In the HRS, satisfaction with life scale questions are asked using finer response scales than the MHAS. In Wave 7, HRS uses a 6-point response scale as follows: 1.strongly agree, 2.agree, 3.slightly agree, 4.neither agree nor disagree, 5.slight disagree, 6.disagree, 7.strongly disagree. In Wave 8, HRS uses a 6-point response scale as follows: 1.strongly disagree, 2.somewhat disagree, 3.slightly disagree, 4.slightly agree, 5.somewhat agree, 6.strongly agree. Starting in Wave 9, the HRS uses a 7-point response scale as follows: 1.strongly disagree, 2.somewhat disagree, 3.slightly disagree, 4.neither agree nor disagree, 5.slightly agree, 6.somewhat agree, 7.strongly agree. Unlike the HRS, the MHAS uses a 3-point response scale of 1.agree, 2.neutral, 3.disagree. To provide variables which are comparable between the MHAS and the HRS at Wave 7 and the HRS at Wave 9 and later, the response scale has been reverse-coded in these Harmonized MHAS variables and in the Harmonized HRS a 3-point scale version of the satisfaction with life scale score is provided, which is also reverse-coded for HRS Wave 7.

## MHAS Variables Used

### Wave 3:

|         |   |
|---------|---|
| D33A_12 | Respondent believes his/her life is close to ideal                    |
| D33B_12 | Respondent believes his/her life conditions are excellent             |
| D33C_12 | Respondent is satisfied with his/her life                             |
| D33D_12 | Respondent has received the most important things in his/her life     |
| D33E_12 | If born again:respondent would not change anything about his/her life |

### Wave 4:

|         |  |
|---------|--|
| D33A_15 | Respondent believes his/her life is close to ideal                       |
| D33B_15 | Respondent believes his/her life conditions are excellent                |
| D33C_15 | Respondent is satisfied with his/her life                                |
| D33D_15 | Respondent has gained the things that are important to him/her           |
| D33E_15 | If born again, respondent would change almost nothing about his/her life |

### Wave 5:

|         |   |
|---------|---|
| D33A_18 | R believes his/her life is close to ideal                       |
| D33B_18 | R believes his/her life conditions are excellent                |
| D33C_18 | R is satisfied with his/her life                                |
| D33D_18 | R has gained the things that are important to him/her           |
| D33E_18 | If born again, R would change almost nothing about his/her life |

Single Life Satisfaction Question

| Wave | Variable   | Label  | Type  |
|------|------------|--|-------|
| 3    | R3SATLIFE  | r3satlife: w3 R Satisfied with life          | Categ |
| 4    | R4SATLIFE  | r4satlife: w4 R Satisfied with life          | Categ |
| 5    | R5SATLIFE  | r5satlife: w5 R Satisfied with life          | Categ |
| 3    | S3SATLIFE  | s3satlife: w3 S Satisfied with life          | Categ |
| 4    | S4SATLIFE  | s4satlife: w4 S Satisfied with life          | Categ |
| 5    | S5SATLIFE  | s5satlife: w5 S Satisfied with life          | Categ |
| 3    | R3SATLIFEZ | r3satlifez: w3 R Satisfied with life z-score | Cont  |
| 4    | R4SATLIFEZ | r4satlifez: w4 R Satisfied with life z-score | Cont  |
| 5    | R5SATLIFEZ | r5satlifez: w5 R Satisfied with life z-score | Cont  |
| 3    | S3SATLIFEZ | s3satlifez: w3 S Satisfied with life z-score | Cont  |
| 4    | S4SATLIFEZ | s4satlifez: w4 S Satisfied with life z-score | Cont  |
| 5    | S5SATLIFEZ | s5satlifez: w5 S Satisfied with life z-score | Cont  |

Descriptive Statistics

| Variable   | N     | Mean  | Std Dev | Minimum | Maximum |
|------------|-------|-------|---------|---------|---------|
| R3SATLIFE  | 14370 | 1.21  | 0.52    | 1.00    | 3.00    |
| R4SATLIFE  | 13788 | 1.21  | 0.53    | 1.00    | 3.00    |
| R5SATLIFE  | 15620 | 1.21  | 0.53    | 1.00    | 3.00    |
| S3SATLIFE  | 9833  | 1.19  | 0.51    | 1.00    | 3.00    |
| S4SATLIFE  | 9155  | 1.19  | 0.51    | 1.00    | 3.00    |
| S5SATLIFE  | 6996  | 1.18  | 0.50    | 1.00    | 3.00    |
| R3SATLIFEZ | 14370 | 0.00  | 1.00    | -0.40   | 3.42    |
| R4SATLIFEZ | 13788 | -0.00 | 1.00    | -0.39   | 3.39    |
| R5SATLIFEZ | 15620 | -0.00 | 1.00    | -0.39   | 3.36    |
| S3SATLIFEZ | 9833  | -0.03 | 0.97    | -0.40   | 3.42    |
| S4SATLIFEZ | 9155  | -0.02 | 0.97    | -0.39   | 3.39    |
| S5SATLIFEZ | 6996  | -0.05 | 0.94    | -0.39   | 3.36    |

Categorical Variable Codes

| Value-----                    | R3SATLIFE | R4SATLIFE | R5SATLIFE |
|-------------------------------|-----------|-----------|-----------|
| .d:DK                         | 51        | 27        | 59        |
| .m:Missing                    |           | 23        |           |
| .p:Proxy interview, not asked | 1275      | 929       | 1328      |
| .r:Refuse                     | 27        | 12        | 107       |
| 1.Agree                       | 12167     | 11772     | 13269     |
| 2.Neutral                     | 1414      | 1205      | 1429      |
| 3.Disagree                    | 789       | 811       | 922       |
| Value-----                    | S3SATLIFE | S4SATLIFE | S5SATLIFE |
| .d:DK                         | 18        | 14        | 28        |
| .m:Missing                    |           | 5         |           |
| .p:Proxy interview, not asked | 726       | 470       | 563       |
| .r:Refuse                     | 15        | 8         | 51        |
| .u:Unmar                      | 4782      | 4847      | 5227      |
| .v:SP NR                      | 349       | 280       | 501       |
| 1.Agree                       | 8445      | 7894      | 6078      |
| 2.Neutral                     | 880       | 761       | 567       |
| 3.Disagree                    | 508       | 500       | 351       |

How Constructed

RwSATLIFE indicates the respondent's agreement with the statement, I am satisfied with my life. RwSATLIFE is coded as follows: 1.agree, 2.neutral, 3.disagree. RwSATLIFEZ is a z-scored version of the respondent's agreement with the statement, I am satisfied with my life. RwSATLIFEZ z-scores the responses from RwSATLIFE. This question is not asked during interviews completed by a proxy on behalf of the respondent and special missing .p is assigned in these cases. Don't know, refused, or other missing values are assigned special missing codes .d, .r, .m, respectively. RwSATLIFE and RwSATLIFEZ are set to plain missing (.) for respondents who did not respond to the current wave.

SwSATLIFEZ indicates the respondent's spouse's level of agreement with the statement, I am satisfied with my life, while SwSATLIFEZ is a z-scored version, and they are taken directly from the spouse's responses to RwSATLIFE and RwSATLIFEZ. In addition to the special missing codes used in RwSATLIFE and RwSATLIFEZ, SwSATLIFE and SwSATLIFEZ employ two other missing codes, .u and .v. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

Cross Wave Differences in MHAS

A question of satisfaction with life was added to the MHAS starting in Wave 3.

Differences with the RAND HRS/Harmonized HRS

In the HRS, satisfaction with life is asked using a 5-point response scale of 1.completely satisfied, 2.very satisfied, 3.somewhat satisfied, 4.not very satisfied, 5.not at all satisfied. Unlike the HRS, the MHAS uses a 3-point response scale of 1.agree, 2.neutral, 3.disagree. To provide variables which are comparable between the HRS and the MHAS, the response scale of RwSATLIFEZ has been z-scored in the Harmonized MHAS and in the Harmonized HRS a z-scored version of HRS respondent's answer to satisfaction with life is provided.

MHAS Variables Used

|         |   |
|---------|---|
| Wave 3: |   |
| D33C_12 | Respondent is satisfied with his/her life |
| Wave 4: |   |
| D33C_15 | Respondent is satisfied with his/her life |
| Wave 5: |   |
| D33C_18 | R is satisfied with his/her life          |

Cantril Ladder

| Wave | Variable  | Label                                 | Type |
|------|-----------|---------------------------------------|------|
| 2    | R2CANTRIL | r2cantril: w2 R Cantril ladder rating | Cont |
| 2    | S2CANTRIL | s2cantril: w2 S Cantril ladder rating | Cont |

Descriptive Statistics

| Variable  | N     | Mean | Std Dev | Minimum | Maximum |
|-----------|-------|------|---------|---------|---------|
| R2CANTRIL | 10248 | 5.15 | 3.19    | 1.00    | 10.00   |
| S2CANTRIL | 7263  | 5.20 | 3.17    | 1.00    | 10.00   |

How Constructed

RwCANTRIL is the respondent's rating of their present situation in comparison to all other people in Mexico, and is shown an image of a ladder with 10 steps. It is scored with a range of 1 to 10, where a 1 indicates the lowest step on the ladder and a 10 indicates the highest step on the ladder. This question is not asked during interviews completed by a proxy on behalf of the respondent and special missing .p is assigned in these cases. Don't know, refused, or other missing values are assigned special missing codes .d, .r, .m, respectively. RwCANTRIL is set to plain missing (.) for respondents who did not respond to the current wave. This question is only asked in Wave 2.

SwCANTRIL is the respondent's spouse's rating of their present situation in comparison to all other people in Mexico, and is taken directly from the spouse's responses to RwCANTRIL. In addition to the special missing codes used in RwCANTRIL, SwCANTRIL employs two other missing codes, .u and .v. A special missing value .u is used when the respondent does not report being coupled in the current wave. A special missing value .v is used when the respondent reports being coupled in the current wave but their spouse is not interviewed.

Cross Wave Differences in MHAS

The respondent is only asked to rate their present situation in comparison to all other people in Mexico in Wave 2.

Differences with the RAND HRS/Harmonized HRS

A comparable measure will be provided in the next version of the Harmonized HRS, or can be created using HRS data.

MHAS Variables Used

|         |                |
|---------|----------------|
| Wave 2: |                |
| D1C     | mexican ladder |



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