Final report for ADA

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Data set: cross sectional data format from 2008, 2010, 2012, 2014

Load the package and read data

Read Stata data

-Read Stata data:%60rndhrs_mergeall2.dta‘ - This data set include 2008,2010,2012 and 2014 HRS

```
data<-read.csv("D:/Dropbox/@2018 Spring/ADA/Final proposal/Data/rndhrs_merge2.csv",header=TRUE, sep=",")
```

Descriptive statistics

demographic characteristics which include age, gender, race (non-Hispanic White, non-Hispanic Black, Hispanic, and other), education levels, and marital status. Covariates related to health status and health insurance include: activities of daily living (ADLs), and instrumental activities of daily living (IADLs), and number of chronic disease, medical care utilization (hospital stays), medical expenditure (out-of pocket), and health insurance coverage. The main stratification variable of interest is respondents' living arrangements, which is constructed as a four-category variable (living alone , living with spouse only, living with spouse and others, and living with others only) combing household composition and marital status, following the previous studies. 1,18 The detailed descriptions of living arrangement are included in the following sections.

Follow the baby boomers 1946-1964 (who were 44-62 in 2008). Since the HRS only cover who were over 50 years old. I follow cohort who were born durig 1946- 1958 (who were 50-62 years old)

```
data$age[which((data$age>62|data$age<50) &data$year=="2008")]<-NA
describe.by(data$age,data$year)
```

```
## Warning: describe.by is deprecated. Please use the describeBy function
```

```
##
##  Descriptive statistics by group
## group: 2008
##    vars    n  mean   sd median trimmed  mad min max range  skew kurtosis
## X1    1 3961 57.25 3.08     57    57.4 2.97  50  62    12 -0.32    -0.66
##      se
## X1 0.05
## ------------------------------------------------------------
## group: 2010
##    vars    n mean   sd median trimmed  mad min max range  skew kurtosis
## X1    1 4651 60.9 3.95     61   60.97 4.45  51  68    17 -0.11    -0.81
##      se
## X1 0.06
## ------------------------------------------------------------
## group: 2012
##    vars    n  mean   sd median trimmed  mad min max range  skew kurtosis
```

```
## X1    1 4373 62.87 3.93     63   62.95 4.45  53  70    17 -0.12    -0.85
##      se
## X1 0.06
## ------------------------------------------------------------
## group: 2014
##    vars    n  mean   sd median trimmed  mad min max range  skew kurtosis
## X1    1 4087 64.71 3.93     65   64.79 4.45  55  72    17 -0.12    -0.84
##      se
## X1 0.06
```

```
sum(is.na(data$age))
```

```
## [1] 1083
```

```
data<- data[-which(is.na(data$age)), ] # 17072 observations left
```

Dependent variable: serious psychological distress (depression) `r_cesd`

```
# RwCESD is the sum of RwDEPRES, RwEFFORT, RwSLEEPR, RwFLONE, RwFSAD, RwGOING, (1-RwWHAPPY)
#and (1-RwENLIFE). Thus the higher the score, the more negative the Respondent's feelings in the past w
# min=0, max=8
# generate new variable, 0-2, 3-7,8
data$r_cesd<-as.numeric(data$r_cesd)
r_cesd<-as.numeric(data$r_cesd)
data$r_cesd_order<-ifelse(data$r_cesd>=0 & data$r_cesd<3,0,
                          ifelse(data$r_cesd>=3 & data$r_cesd<8,1,
                                 ifelse(data$r_cesd>=8,2,NA)))
data$r_cesd_order<-factor(data$r_cesd_order, levels = c(0,1,2), labels = c("Low CESD","Middle CESD","Hig
r_cesd_order <- ordered(data$r_cesd_order,c("Low CESD","Middle CESD","High CESD"))
summary(r_cesd_order)
```

```
##    Low CESD Middle CESD   High CESD        NA's
##       13275        2845         262         690
```

Independent variables

```
# household ID
ï..hhidpn<-as.factor(data$ï..hhidpn)
length(unique(ï..hhidpn))             # there are 5253 unique cohort
```

```
## [1] 5253
```

```
# Retirement decision
r_retire<-as.factor(data$r_retire)
t.test(r_cesd~r_retire)      # there is difference in CESD among retirement groups
```

```
##
##  Welch Two Sample t-test
##
## data:  r_cesd by r_retire
## t = -12.366, df = 8635.2, p-value < 2.2e-16
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.4993565 -0.3627023
## sample estimates:
## mean in group 0 mean in group 1
##        1.186347        1.617376
```

```r
year<-as.factor(data$year)
summary(year)
```

```
## 2008 2010 2012 2014
## 3961 4651 4373 4087
```

```r
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:plm':
##
##     between, lag, lead
```

```
## The following objects are masked from 'package:Hmisc':
##
##     src, summarize
```

```
## The following objects are masked from 'package:data.table':
##
##     between, first, last
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```r
data %>% group_by(ï..hhidpn) %>% filter(row_number(year) == 4)
```

```
## # A tibble: 2,847 x 59
## # Groups:   ï..hhidpn [2,847]
##    ï..hhidpn  year   age gender  race     rahispan raeduc   r_adla r_iadla
##        <int> <int> <int> <fct>   <fct>    <fct>    <fct>     <int>   <int>
##  1  10013040  2014    66 2.fema~ 1.white~ 0.not h~ 4.some ~      0       0
##  2  10708030  2014    67 2.fema~ 2.black~ 0.not h~ 3.high-~      4       0
##  3  10818040  2014    65 2.fema~ 1.white~ 0.not h~ 4.some ~      0       0
##  4  10822040  2014    67 2.fema~ 1.white~ 0.not h~ 4.some ~      0       0
##  5  11256040  2014    67 2.fema~ 3.other  0.not h~ 1.lt hi~      0       0
##  6  11377040  2014    68 2.fema~ 1.white~ 0.not h~ 3.high-~      0       0
##  7  11466040  2014    61 2.fema~ 2.black~ 0.not h~ 1.lt hi~      0       0
##  8  11626011  2014    65 2.fema~ 3.other  1.hispa~ 1.lt hi~      0       0
##  9  11911040  2014    66 2.fema~ 1.white~ 0.not h~ 3.high-~      0       0
## 10  12481011  2014    68 2.fema~ 3.other  1.hispa~ 4.some ~      0       0
## # ... with 2,837 more rows, and 50 more variables: rabyear <int>,
## #   radyear <int>, r_cesd <dbl>, r_cesdm <int>, r_cholst <fct>,
## #   r_breast <fct>, r_bmi <dbl>, r_height <dbl>, r_weight <dbl>,
## #   r_smokev <fct>, r_smoken <fct>, r_drink <fct>, r_drinkd <fct>,
## #   r_drinkn <fct>, r_diab <fct>, r_cancr <fct>, r_heart <fct>,
## #   r_govmr <fct>, r_govmd <fct>, r_hiothp <fct>, r_psych <fct>,
## #   r_arthr <fct>, r_walkr <fct>, r_adlc <int>, r_hosp <fct>,
## #   r_outpt <fct>, r_drugs <fct>, r_oopmd <dbl>, r_dlrc <int>,
## #   h_itot <dbl>, h_inpova <fct>, h_inpov <fct>, r_work <fct>,
## #   r_work2 <fct>, r_slfemp <fct>, r_demens <fct>, r_alzhef <fct>,
## #   r_alzhes <fct>, r_demenf <fct>, LA_partnered <int>, r_married <int>,
```

```
## #   r_diabetes <int>, r_retire <int>, num_chronic <int>,
## #   r_hypertension <int>, r_mstat <fct>, r_nrstim <int>, r_ipena <dbl>,
## #   r_doctim <int>, r_cesd_order <fct>
```

```
#http://www.matthieugomez.com/statar/group-by.html


# Age
age<-as.numeric(data$age)
summary(age)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   50.00   58.00   61.00   61.47   65.00   72.00
```

```
cor.test(r_cesd,age)
```

```
##
##  Pearson's product-moment correlation
##
## data:  r_cesd and age
## t = -7.0363, df = 16380, p-value = 2.052e-12
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  -0.07014931 -0.03961486
## sample estimates:
##         cor
## -0.05489492
```

```
# Gender
data$gender<-as.factor(data$gender)
gender<-relevel(data$gender, ref="1.male")
summary(gender)
```

```
##   1.male 2.female
##     6938    10134
```

```
t.test(r_cesd~gender)
```

```
##
##  Welch Two Sample t-test
##
## data:  r_cesd by gender
## t = -10.654, df = 15107, p-value < 2.2e-16
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.3829212 -0.2639207
## sample estimates:
##   mean in group 1.male mean in group 2.female
##               1.132006               1.455427
```

```
#*1: non hispanic white, 2: non-hispanic black, 3: Hispanic, 4: other*

data$race<-ifelse(data$race=="1.white/caucasian",0,
             ifelse(data$race=="2.black/african american",1,
                    ifelse(data$race=="3.other",2,NA)))
data$race<-factor(data$race,levels=c(0,1,2),labels=c("White/Caucasian","Black/African American","Other"))
race<-relevel(data$race,ref="White/Caucasian")
```

```r
kruskal.test(r_cesd,race)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  r_cesd and race
## Kruskal-Wallis chi-squared = 275.99, df = 2, p-value < 2.2e-16
```

```r
# Insurance
r_govmr<-as.factor(data$r_govmr)
r_govmd<-as.factor(data$r_govmr)
r_hiothp<-as.factor(data$r_hiothp)
xtabs(~r_govmr+r_govmd+r_hiothp,data)
```

```
## , , r_hiothp = .d
##
##         r_govmd
## r_govmr    .d    .m    .r  0.no 1.yes
##   .d        0     0     0     0     1
##   .m        0     0     0     0     0
##   .r        0     0     0     0     1
##   0.no      1     0     0    28     0
##   1.yes     1     0     0    28     7
##
## , , r_hiothp = .m
##
##         r_govmd
## r_govmr    .d    .m    .r  0.no 1.yes
##   .d        0     0     0     0     0
##   .m        0    18     0     0     0
##   .r        0     0     0     0     0
##   0.no      0     0     0     0     0
##   1.yes     0     0     0     0     0
##
## , , r_hiothp = .r
##
##         r_govmd
## r_govmr    .d    .m    .r  0.no 1.yes
##   .d        0     0     0     0     0
##   .m        0     0     0     0     0
##   .r        0     0    12     0     0
##   0.no      0     0     0    17     0
##   1.yes     0     0     0     4     1
##
## , , r_hiothp = 0.no
##
##         r_govmd
## r_govmr    .d    .m    .r  0.no 1.yes
##   .d        5     0     0    24     6
##   .m        0     0     0     0     0
##   .r        0     0     2     0     0
##   0.no      5     0     0 10139   421
##   1.yes    19     0     1  4010   551
##
```

```
## , , r_hiothp = 1.yes
##
##         r_govmd
## r_govmr    .d    .m    .r  0.no 1.yes
##   .d        1     0     0     3     0
##   .m        0     0     0     0     0
##   .r        0     0     0     0     0
##   0.no      1     0     0   813    14
##   1.yes     3     0     0   918    17
```

Generate `r_insurance` heath insurance variable - 0: without Medicare or Medicaid or other insurnace (n=10695) - 1: only with Medicare or Medicaid; (n=4343+576+441) - 2: Only with other insurance; (n=882) - 3: With Medicare or Medicaid and with other insurance"(n=990+19+14)

-out-of-pocket medical expenditures`r_oopmd`

```
#
r_insurance<-ifelse(data$r_govmr=="0.no" & data$r_govmd=="0.no" & data$r_hiothp=="0.no",0,
              ifelse((data$r_govmr=="1.yes" | data$r_govmd=="1.yes") &        data$r_hiothp=="0.no",1,
              ifelse(data$r_govmr=="0.no" & data$r_govmd=="0.no" & data$r_hiothp=="1.yes",2,
                ifelse((data$r_govmr=="1.yes" | data$r_govmd=="1.yes")& data$r_hiothp=="1.yes",3,NA))))

r_insurance<-as.factor(r_insurance)

r_insurance<-factor(r_insurance, levels = c(0,1,2,3), labels = c("Without Medicare or Medicaid or other
summary(r_insurance)
```

```
##    Without Medicare or Medicaid or other insurnace
##                                              10139
##                     Only with Medicare or Medicaid
##                                               5008
##                          Only with other insurance
##                                                813
## With Medicare or Medicaid and with other insurance
##                                                952
##                                               NA's
##                                                160
```

```
r_insurance<-relevel(r_insurance,ref="Without Medicare or Medicaid or other insurnace")

# our of pocket medical expenditure
r_oopmd<-as.numeric(data$r_oopmd)
t.test(r_oopmd~r_retire)
```

```
##
##  Welch Two Sample t-test
##
## data:  r_oopmd by r_retire
## t = -4.0117, df = 8425.3, p-value = 6.08e-05
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -685.4023 -235.4466
## sample estimates:
## mean in group 0 mean in group 1
##        2978.075        3438.500
```

Independent variables: – years of education (`raeduc`) – total household income (`h_itot`) – Number of chronic

disease(num_chronic) – ADLA and IADLA (r_adla,r_iadla) – DELAYED WORD RECALL (r_dlrc) – whether you retire or notr_retire

```
#Education levels
raeduc<-as.factor(data$raeduc)
summary(aov(r_cesd ~ raeduc))
```

```
##                Df Sum Sq Mean Sq F value Pr(>F)
## raeduc          5   3731   746.2   206.2 <2e-16 ***
## Residuals   16376  59271     3.6
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## 690 observations deleted due to missingness
```

```
# Total household income
h_itot<-as.numeric(data$h_itot)
cor.test(r_cesd,h_itot)
```

```
##
##  Pearson's product-moment correlation
##
## data:  r_cesd and h_itot
## t = -21.608, df = 16380, p-value < 2.2e-16
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  -0.1813277 -0.1515496
## sample estimates:
##        cor
## -0.1664766
```

```
# Measurement of quality of life
r_adla<-as.numeric(data$r_adla)
cor.test(r_cesd,r_adla)
```

```
##
##  Pearson's product-moment correlation
##
## data:  r_cesd and r_adla
## t = 49.554, df = 16379, p-value < 2.2e-16
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  0.3476880 0.3743233
## sample estimates:
##       cor
## 0.3610793
```

```
r_iadla<-as.numeric(data$r_iadla)
cor.test(r_cesd,r_iadla)
```

```
##
##  Pearson's product-moment correlation
##
## data:  r_cesd and r_iadla
## t = 38.068, df = 16378, p-value < 2.2e-16
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  0.2709796 0.2991190
```

```
## sample estimates:
##       cor
## 0.2851107
```

Medical care utilization – hospital stays (`r_hosp`) –difficulty to walk across room (`r_walkr`) – marital status(`r_mstat`) - Medical care utilization: Home Care(`r_homcar`) - # Nurs home stays, prv 2 yrs(`r_nrstim`) - # Doctor vists, prv 2 yrs(`r_doctim`)

```
#hospital stays
data$r_hosp<-as.factor(data$r_hosp)
data$r_hosp[data$r_hosp==".r"|data$r_hosp==".d"|data$r_hosp==".m"]<-NA

r_hosp<-relevel(data$r_hosp,ref="0.no")

t.test(r_cesd~r_hosp)
```

```
##
##  Welch Two Sample t-test
##
## data:  r_cesd by r_hosp
## t = -17.851, df = 4427.1, p-value < 2.2e-16
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.8530374 -0.6842069
## sample estimates:
##  mean in group 0.no mean in group 1.yes
##            1.168802            1.937424
```

```
#difficulty to walk across room
data$r_walkr<-ifelse(data$r_walkr=="0.no","0.no",
               ifelse(data$r_walkr=="1.yes","1.yes",
                  ifelse(data$r_walkr=="2.can't do","2.can't do",
                         ifelse(data$r_walkr=="9.don't do","9.don't do",NA))))
data$r_walkr<-as.factor(data$r_walkr)
r_walkr<-relevel(data$r_walkr,ref="0.no")
summary(aov(r_cesd ~ r_walkr))
```

```
##                Df Sum Sq Mean Sq F value Pr(>F)
## r_walkr         3   4337  1445.6   403.8 <2e-16 ***
## Residuals   16374  58611     3.6
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## 694 observations deleted due to missingness
```

Financial stability - Income:R Pension + Annuity (`r_ipena`) - Whether family income is HwINPOV HwINPOVA below the poverty threshold`h_inpov`

```
# Income:R Pension + Annuity (`r_ipena`)
r_ipena<-as.numeric(data$r_ipena)
cor.test(r_cesd,r_ipena)
```

```
##
##  Pearson's product-moment correlation
##
## data:  r_cesd and r_ipena
## t = -10.246, df = 16380, p-value < 2.2e-16
## alternative hypothesis: true correlation is not equal to 0
```

```
## 95 percent confidence interval:
##  -0.09499670 -0.06456497
## sample estimates:
##         cor
## -0.07979943
```

```
# Whether family income is HwINPOV HwINPOVA below the poverty threshold`h_inpov`
data$h_inpov<-ifelse(data$h_inpov=="0.hh inc above pov thresh",0,
                ifelse(data$h_inpov=="1.hh inc below pov thresh",1,NA))
data$h_inpov<-factor(data$h_inpov, levels = c(0,1), labels = c("HH income above poverty threshold","HH i
h_inpov<-relevel(data$h_inpov,ref="HH income above poverty threshold")
t.test(r_cesd~h_inpov)
```

```
##
##  Welch Two Sample t-test
##
## data:  r_cesd by h_inpov
## t = -18.828, df = 1542.3, p-value < 2.2e-16
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -1.458934 -1.183630
## sample estimates:
## mean in group HH income above poverty threshold
##                                        1.213999
## mean in group HH income below poverty threshold
##                                        2.535282
```

Demographic statistics

```
# interaction between age and retire,nope
model<-lmer(r_cesd~ age*factor(r_retire)+factor(gender)+factor(race)+factor(raeduc)+r_hosp+r_insurance+
```

```
## Warning: Some predictor variables are on very different scales: consider
## rescaling
```

```
summary(model)
```

```
## Linear mixed model fit by maximum likelihood  ['lmerMod']
## Formula:
## r_cesd ~ age * factor(r_retire) + factor(gender) + factor(race) +
##     factor(raeduc) + r_hosp + r_insurance + r_nrstim + r_walkr +
##     r_doctim + r_ipena + h_inpov + r_oopmd + r_adla + r_iadla +
##     (1 | ï..hhidpn) + (1 | year)
##    Data: data
##
##      AIC      BIC   logLik deviance df.resid
##  57757.7  57979.7 -28849.9  57699.7    15554
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -5.1277 -0.4164 -0.1610  0.2743  4.9740
##
## Random effects:
##  Groups    Name        Variance Std.Dev.
```

```
##  ï..hhidpn (Intercept) 1.487876 1.219785
##  year      (Intercept) 0.000034 0.005831
##  Residual              1.534656 1.238812
## Number of obs: 15583, groups:  ï..hhidpn, 5077; year, 4
##
## Fixed effects:
##                                                                 Estimate
## (Intercept)                                                    3.673e+00
## age                                                           -3.739e-02
## factor(r_retire)1                                              9.121e-01
## factor(gender)2.female                                         2.037e-01
## factor(race)Black/African American                             6.176e-02
## factor(race)Other                                              2.474e-01
## factor(raeduc)1.lt high-school                                 4.337e-02
## factor(raeduc)2.ged                                           -2.804e-02
## factor(raeduc)3.high-school graduate                          -5.208e-01
## factor(raeduc)4.some college                                  -6.432e-01
## factor(raeduc)5.college and above                             -9.501e-01
## r_hosp1.yes                                                    1.454e-01
## r_insuranceOnly with Medicare or Medicaid                      2.419e-01
## r_insuranceOnly with other insurance                           3.392e-02
## r_insuranceWith Medicare or Medicaid and with other insurance  2.037e-01
## r_nrstim                                                      -6.276e-02
## r_walkr1.yes                                                   1.509e-01
## r_walkr2.can't do                                             -7.125e-01
## r_walkr9.don't do                                             -2.014e-01
## r_doctim                                                       4.040e-03
## r_ipena                                                       -2.298e-06
## h_inpovHH income below poverty threshold                       2.796e-01
## r_oopmd                                                        1.094e-05
## r_adla                                                         5.081e-01
## r_iadla                                                        5.418e-01
## age:factor(r_retire)1                                         -1.308e-02
##                                                               Std. Error
## (Intercept)                                                    1.043e+00
## age                                                            4.576e-03
## factor(r_retire)1                                              4.485e-01
## factor(gender)2.female                                         4.157e-02
## factor(race)Black/African American                             5.975e-02
## factor(race)Other                                              7.611e-02
## factor(raeduc)1.lt high-school                                 1.002e+00
## factor(raeduc)2.ged                                            1.005e+00
## factor(raeduc)3.high-school graduate                           1.001e+00
## factor(raeduc)4.some college                                   1.001e+00
## factor(raeduc)5.college and above                              1.001e+00
## r_hosp1.yes                                                    3.277e-02
## r_insuranceOnly with Medicare or Medicaid                      3.973e-02
## r_insuranceOnly with other insurance                           6.143e-02
## r_insuranceWith Medicare or Medicaid and with other insurance  6.575e-02
## r_nrstim                                                       2.753e-02
## r_walkr1.yes                                                   9.218e-02
## r_walkr2.can't do                                              4.456e-01
## r_walkr9.don't do                                              6.629e-01
## r_doctim                                                       6.650e-04
```

```
## r_ipena                                                          1.045e-06
## h_inpovHH income below poverty threshold                         5.001e-02
## r_oopmd                                                          2.061e-06
## r_adla                                                           2.893e-02
## r_iadla                                                          4.360e-02
## age:factor(r_retire)1                                            7.101e-03
##                                                                 t value
## (Intercept)                                                       3.523
## age                                                              -8.170
## factor(r_retire)1                                                 2.033
## factor(gender)2.female                                            4.900
## factor(race)Black/African American                                1.034
## factor(race)Other                                                 3.251
## factor(raeduc)1.lt high-school                                    0.043
## factor(raeduc)2.ged                                              -0.028
## factor(raeduc)3.high-school graduate                             -0.520
## factor(raeduc)4.some college                                     -0.642
## factor(raeduc)5.college and above                                -0.949
## r_hosp1.yes                                                       4.439
## r_insuranceOnly with Medicare or Medicaid                         6.088
## r_insuranceOnly with other insurance                              0.552
## r_insuranceWith Medicare or Medicaid and with other insurance     3.098
## r_nrstim                                                         -2.280
## r_walkr1.yes                                                      1.637
## r_walkr2.can't do                                                -1.599
## r_walkr9.don't do                                                -0.304
## r_doctim                                                          6.075
## r_ipena                                                          -2.199
## h_inpovHH income below poverty threshold                          5.590
## r_oopmd                                                           5.309
## r_adla                                                           17.564
## r_iadla                                                          12.427
## age:factor(r_retire)1                                            -1.842
##
## Correlation matrix not shown by default, as p = 26 > 12.
## Use print(x, correlation=TRUE)  or
##   vcov(x)     if you need it
##
## fit warnings:
## Some predictor variables are on very different scales: consider rescaling
```

```
stargazer(model, title="Model Comparison",
          type="text",align=TRUE,single.row=TRUE)
```

```
##
## Model Comparison
## ================================================================================================
##                                                                    Dependent variable:
##                                                                ----------------------------
##                                                                          r_cesd
## ------------------------------------------------------------------------------------------------
## age                                                                  -0.037*** (0.005)
## factor(r_retire)1                                                     0.912** (0.449)
## factor(gender)2.female                                               0.204*** (0.042)
## factor(race)Black/African American                                    0.062 (0.060)
```

```
## factor(race)Other                                                    0.247*** (0.076)
## factor(raeduc)1.lt high-school                                        0.043 (1.002)
## factor(raeduc)2.ged                                                  -0.028 (1.005)
## factor(raeduc)3.high-school graduate                                 -0.521 (1.001)
## factor(raeduc)4.some college                                         -0.643 (1.001)
## factor(raeduc)5.college and above                                    -0.950 (1.001)
## r_hosp1.yes                                                         0.145*** (0.033)
## r_insuranceOnly with Medicare or Medicaid                           0.242*** (0.040)
## r_insuranceOnly with other insurance                                  0.034 (0.061)
## r_insuranceWith Medicare or Medicaid and with other insurance       0.204*** (0.066)
## r_nrstim                                                            -0.063** (0.028)
## r_walkr1.yes                                                          0.151 (0.092)
## r_walkr2.can't do                                                    -0.712 (0.446)
## r_walkr9.don't do                                                    -0.201 (0.663)
## r_doctim                                                            0.004*** (0.001)
## r_ipena                                                          -0.00000** (0.00000)
## h_inpovHH income below poverty threshold                            0.280*** (0.050)
## r_oopmd                                                          0.00001*** (0.00000)
## r_adla                                                              0.508*** (0.029)
## r_iadla                                                             0.542*** (0.044)
## age:factor(r_retire)1                                                -0.013* (0.007)
## Constant                                                            3.673*** (1.043)
## ---------------------------------------------------------------------------------------
## Observations                                                           15,583
## Log Likelihood                                                      -28,849.870
## Akaike Inf. Crit.                                                   57,757.750
## Bayesian Inf. Crit.                                                 57,979.710
## =======================================================================================
## Note:                                                  *p<0.1; **p<0.05; ***p<0.01
```

```
model3<-lmer(r_cesd~ (age+factor(r_insurance)+factor(gender)+factor(race)+factor(raeduc)+r_hosp+r_nrstim
```

```
## Warning: Some predictor variables are on very different scales: consider
## rescaling
```

```
stargazer(model3, title="Model Comparison",
          type="text",align=TRUE,single.row=TRUE)
```

```
##
## Model Comparison
## ================================================================================================
##                                                                                  Dependent
##                                                                                 ------------
##                                                                                       r_
## ------------------------------------------------------------------------------------------------
## age                                                                                  -0.048*
## factor(r_insurance)Only with Medicare or Medicaid                                     0.160*
## factor(r_insurance)Only with other insurance                                          0.014
## factor(r_insurance)With Medicare or Medicaid and with other insurance                -0.035
## factor(gender)2.female                                                               0.258**
## factor(race)Black/African American                                                    0.005
## factor(race)Other                                                                    0.217*
## factor(raeduc)1.lt high-school                                                       -0.164
## factor(raeduc)2.ged                                                                  -0.226
## factor(raeduc)3.high-school graduate                                                 -0.711
```

```
## factor(raeduc)4.some college                                                                  -0.811
## factor(raeduc)5.college and above                                                              -0.960
## r_hosp1.yes                                                                                  0.139**
## r_nrstim                                                                                     -0.078*
## r_walkr1.yes                                                                                  0.038
## r_walkr2.can't do                                                                            -1.932*
## r_walkr9.don't do                                                                             0.932
## r_doctim                                                                                     0.002*
## r_ipena                                                                                     -0.00000
## h_inpovHH income below poverty threshold                                                     0.342**
## r_oopmd                                                                                     0.00001*
## r_adla                                                                                       0.593**
## r_iadla                                                                                      0.584**
## num_chronic                                                                                  0.176**
## r_dlrc                                                                                       -0.056*
## factor(r_retire)1                                                                             1.133
## age:factor(r_retire)1                                                                        -0.028*
## factor(r_insurance)Only with Medicare or Medicaid:factor(r_retire)1                           0.194*
## factor(r_insurance)Only with other insurance:factor(r_retire)1                                0.085
## factor(r_insurance)With Medicare or Medicaid and with other insurance:factor(r_retire)1       0.303*
## factor(gender)2.female:factor(r_retire)1                                                     -0.069
## factor(race)Black/African American:factor(r_retire)1                                         -0.095
## factor(race)Other:factor(r_retire)1                                                          -0.164
## factor(raeduc)1.lt high-school:factor(r_retire)1                                              0.387
## factor(raeduc)2.ged:factor(r_retire)1                                                         0.483
## factor(raeduc)3.high-school graduate:factor(r_retire)1                                        0.411
## factor(raeduc)4.some college:factor(r_retire)1                                                0.494
## factor(raeduc)5.college and above:factor(r_retire)1                                           0.225
## r_hosp1.yes:factor(r_retire)1                                                                -0.103
## r_nrstim:factor(r_retire)1                                                                    0.246
## r_walkr1.yes:factor(r_retire)1                                                                0.025
## r_walkr2.can't do:factor(r_retire)1                                                          -0.054
## r_walkr9.don't do:factor(r_retire)1                                                          -3.056*
## r_doctim:factor(r_retire)1                                                                    0.003*
## r_ipena:factor(r_retire)1                                                                   -0.00000
## h_inpovHH income below poverty threshold:factor(r_retire)1                                   -0.126
## r_oopmd:factor(r_retire)1                                                                   0.00001
## r_adla:factor(r_retire)1                                                                     -0.169*
## r_iadla:factor(r_retire)1                                                                    -0.115
## num_chronic:factor(r_retire)1                                                                0.053*
## r_dlrc:factor(r_retire)1                                                                     0.036*
## Constant                                                                                    4.450**
## ---------------------------------------------------------------------------------------------------
## Observations                                                                                    11
## Log Likelihood                                                                                -22,3
## Akaike Inf. Crit.                                                                             44,74
## Bayesian Inf. Crit.                                                                           45,14
## ===================================================================================================
## Note:                                                                          *p<0.1; **p<0
```

```
model4<-lmer(r_cesd~ factor(gender)+(age+factor(r_insurance)+factor(race)+factor(raeduc)+r_hosp+r_nrstim
```

```
## Warning: Some predictor variables are on very different scales: consider
## rescaling
```

```
stargazer(model4, title="Model Comparison",
          type="text",align=TRUE,single.row=TRUE)
```

```
##
## Model Comparison
## ==========================================================================================================
##                                                                                                Dependen
##                                                                                              ------------
##                                                                                                     r_
## ----------------------------------------------------------------------------------------------------------
## factor(gender)2.female                                                                          0.240**
## age                                                                                            -0.048*
## factor(r_insurance)Only with Medicare or Medicaid                                               0.161*
## factor(r_insurance)Only with other insurance                                                    0.014
## factor(r_insurance)With Medicare or Medicaid and with other insurance                          -0.035
## factor(race)Black/African American                                                              0.007
## factor(race)Other                                                                               0.218*
## factor(raeduc)1.lt high-school                                                                  -0.160
## factor(raeduc)2.ged                                                                             -0.220
## factor(raeduc)3.high-school graduate                                                            -0.706
## factor(raeduc)4.some college                                                                    -0.808
## factor(raeduc)5.college and above                                                               -0.958
## r_hosp1.yes                                                                                     0.139**
## r_nrstim                                                                                        -0.078*
## r_walkr1.yes                                                                                    0.041
## r_walkr2.can't do                                                                               -1.934*
## r_walkr9.don't do                                                                               0.928
## r_doctim                                                                                        0.002*
## r_ipena                                                                                        -0.00000
## h_inpovHH income below poverty threshold                                                        0.342**
## r_oopmd                                                                                        0.00001*
## r_adla                                                                                          0.593**
## r_iadla                                                                                         0.584**
## num_chronic                                                                                     0.177**
## r_dlrc                                                                                          -0.055*
## factor(r_retire)1                                                                               1.089
## age:factor(r_retire)1                                                                           -0.028*
## factor(r_insurance)Only with Medicare or Medicaid:factor(r_retire)1                             0.194*
## factor(r_insurance)Only with other insurance:factor(r_retire)1                                  0.076
## factor(r_insurance)With Medicare or Medicaid and with other insurance:factor(r_retire)1         0.301*
## factor(race)Black/African American:factor(r_retire)1                                            -0.101
## factor(race)Other:factor(r_retire)1                                                             -0.162
## factor(raeduc)1.lt high-school:factor(r_retire)1                                                0.405
## factor(raeduc)2.ged:factor(r_retire)1                                                           0.505
## factor(raeduc)3.high-school graduate:factor(r_retire)1                                          0.430
## factor(raeduc)4.some college:factor(r_retire)1                                                  0.517
## factor(raeduc)5.college and above:factor(r_retire)1                                             0.248
## r_hosp1.yes:factor(r_retire)1                                                                   -0.102
## r_nrstim:factor(r_retire)1                                                                      0.248
## r_walkr1.yes:factor(r_retire)1                                                                  0.018
## r_walkr2.can't do:factor(r_retire)1                                                             -0.059
## r_walkr9.don't do:factor(r_retire)1                                                             -3.067*
## r_doctim:factor(r_retire)1                                                                      0.003*
## r_ipena:factor(r_retire)1                                                                      -0.00000
```

```
## h_inpovHH income below poverty threshold:factor(r_retire)1                                  -0.127
## r_oopmd:factor(r_retire)1                                                                  0.00001
## r_adla:factor(r_retire)1                                                                   -0.168**
## r_iadla:factor(r_retire)1                                                                   -0.116
## num_chronic:factor(r_retire)1                                                               0.054*
## r_dlrc:factor(r_retire)1                                                                    0.034*
## Constant                                                                                   4.463***
## ---------------------------------------------------------------------------------------------------
## Observations                                                                                    11
## Log Likelihood                                                                                -22,3
## Akaike Inf. Crit.                                                                             44,73
## Bayesian Inf. Crit.                                                                           45,13
## ===================================================================================================
## Note:                                                                      *p<0.1; **p<0
```