

Living Conditions, Health and California's Agricultural Workers

Bonnie Bade and Don Villarejo
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Abstract

This paper reports on the living conditions of California's farmworkers and the effects that living conditions have on health. Findings from the California Agricultural Worker Health Survey (CAWHS)¹, indicate an alarming incidence of crowded and overcrowded living conditions among California's farmworkers. Furthermore, other conditions under which workers live, including residence in temporary dwellings, occupant density, and whether or not the worker lives with family members, are associated with specific health conditions, including diarrhea, ear aches and certain ethnoscience illnesses related to mental health including *susto* ("fright"), *depresion* (depression), *coraje* ("anger") and *nervios* ("nerves").

I. Farmworker Living Conditions in California

The five farmworker health researchers spread out on foot through the streets of Mecca with clip boards and census block maps in hand, trying to determine exactly where the farmworkers in town live. On G St. across from the local elementary school a dirt road extends out along the side of a large lot. Lined up along it are makeshift shacks, wheel-less small trailers, lean-tos and suspended nylon tarps where countless farmworkers live and spend their time while not in the fields. Here the postman doesn't even ring once, let alone twice. Small propane stoves are set up near buckets of water where families have made outdoor kitchens. The sun beats down on corrugated tin roofs. Flies buzz near the edge of the property where two large creosote bushes serve to shield those who use the area as a bathroom.

The task of the researchers is to estimate the number of "dwelling units" on the site so that each can be assigned a number and its occupants can be

¹ The California Agricultural Worker Health Survey (CAWHS) interviewed 970 randomly selected hired farm workers during the period March – December 1999. The sample was statewide and cross-sectional in seven representative communities. The survey instrument included lengthy and detailed questions concerning housing conditions, income and family structure, health conditions, health care access and utilization, risk behavior. Overall, an 83% response rate was achieved. A detailed description of survey methods is presented in the publication *Suffering in Silence*, Appendix I, pp. 33-34. The seven communities were: Arbuckle, Calistoga, Colusa, Firebaugh, Gonzales, Mecca and Vista.

A total of 937 dwellings had CAWHS participants. Of these, 32 had two or more CAWHS subjects because the survey protocol allowed for the possibility of randomly selecting more than one subject in a dwelling, when the dwelling had more than 10 occupants. Finally, adequate information was available for a total of 935 dwellings

included in the pool of potential research subjects. To get a feel for the number of people who might be sharing the space, a researcher approaches a woman washing clothes in a large pail near a faucet. The woman replies that she has no idea how many people live there, but that she shares a small trailer on the property with her husband, two teenage sons, and a nephew. "We also had my brother and his wife living with us, but they left last week to live in Indio," she says. Her nephew and sons sleep on pallets out in front of the trailer because it only has one bed.

This section describes the housing conditions of agricultural workers living and working throughout the state of California. Based on data from the California Agricultural Workers Health Survey, findings indicate that California's farmworkers—at least those living in the seven major agricultural production regions of the state—live in crowded, unconventional, and even homeless conditions.



Semi-permanent Farmworker housing in unregistered labor camp "los diablos" in San Diego County. Photograph by Carmelino Cruz

1. Farmworker Housing Types

The CAWHS determined that farmworker's live in dwelling types that can be classified according to one or four major categories:

Permanent structure – dwelling is recognized by the County Assessor for real property tax purposes and has a situs address recognized by the U.S. Postal Service.

Temporary structure – dwelling is neither recognized by the County Assessor for real property tax purposes nor has a situs address recognized by the U.S. Postal Service. This category excludes “labor camps” and “vehicles utilized as dwellings.”

Labor camp structure – dwelling is located within a State- or County-recognized farm labor camp, or residents themselves describe their dwellings as such.

Vehicle – dwelling consists of an automobile, pickup truck with a camper shell, or other vehicle that is primarily used for transport to and from work, for shopping and similar essential transport purposes.

This classification scheme does not reflect dwelling quality. For example, the category “temporary structure” includes garages, sheds and other structures not designed or intended for human habitation, but also includes various types of trailers and mobile homes, some of which were observed to be of good quality, certainly as good or better than some of the permanent structures surveyed.

Dwellings in which hired farm workers were found to be residing were mostly permanent structures (81%). Temporary structures ranked next in importance (10%), followed by labor camps (6%) and vehicles (2%). Table 1 shows, for each category, the total number of dwellings enumerated, contacted, with qualified residents, and in which qualified persons agreed to participate in the CAWHS. For this purpose, the two categories “temporary structure” and “vehicles” have been combined. Appendix I presents detailed data for each of the seven sites.

Table 1. Summary of Dwellings and Participation, CAWHS, 1999

Type of Dwelling	Enumerated	Contacted	Qualified Resident	Participant in CAWHS
Permanent	10,284	2,461	875	762
Labor Camp	554	227	110	60
Temporary & Vehicle	1,042	301	185	113
Totals	11,876	2,989	1,170	935

What Table 1 shows is that, in these seven communities, hired farm workers were least likely to be found residing in permanent structures (36%), more likely to be found in labor camps (48%), and much more likely to be living in temporary structures or vehicles (61%). In other words, the table shows that, despite the fact that permanent structures were the most numerous types of dwellings encountered, we found that farmworkers were more likely to be living in either labor camps, temporary structures, or vehicles. Furthermore, the absence of plumbing or kitchen facilities was strongly associated with the type of dwelling. Just 9 permanent structures lacked such facilities (1% of structures of this type). But 26 temporary or labor camp structures did not have either or both of

these facilities (17% of such structures). All 22 vehicles that served as dwellings lacked both plumbing and kitchen facilities (100%).²

The finding that only one in three permanent structures in these communities served as a residence for a CAWHS-eligible subject was somewhat surprising: five of the seven communities are well-known to be "farm worker towns." But even in these five communities, the same pattern was found. Relatively fewer permanent structures had residents who were hired farm workers as compared with labor camps and temporary structures.



Los Diablos labor camp. San Diego County. Photograph by Carmelino Cruz.

The most extreme case of temporary and non-conventional living conditions occurred in Mecca, where of an estimated 2,572 CAWHS-eligible workers in residence, nearly two-thirds (60%) were living in labor camps, temporary structures or vehicles. Of course, the survey in each community was timed to coincide with the likely peak period of hired farm labor demand. Thus, workers who migrate to the community with the intention of finding farm employment might expect to be living in labor camps within or near the town, or in other temporary quarters.

CAWHS subjects were asked to describe the type of housing in which they reside – single family (detached or attached), multi-apartment structure, mobile home or trailer, recreational vehicle, automobile, etc. – following designations used in the 2000 Census. This classification scheme was independent of that used by the researchers and may more accurately provide a description of farm worker housing in the state.

The main findings of this self-reported classification is that nearly half of CAWHS subjects (47.6%) said they resided in "single family dwellings," and three-quarters of these said they were living in detached single family dwellings.

² In Mecca, many hired farm workers who reside in vehicles choose to park overnight in one or another vacant lot adjacent to a convenience store. Two portable chemical toilets were observed in one of the lots, and potable water is available for bulk purchase at the store. No cooking facilities of any kind were available in the vacant lots or store.

Another one-third (34.6%) reported residing in multi-unit apartment buildings, about one-eighth (12.3%) said they lived in a mobile home or trailer. Roughly one in fifty (2.2%) said they lived in their automobile, and about one in one hundred said they were homeless, living in the open or “under the trees.”

At the end of a dirt road flanked by ornamental flower nurseries in Vista, stands a shady Eucalyptus forest. By day it is vacant, with only the port-a-potty betraying the occupation of the clearing in the trees by dozens of local farmworkers. In the evening workers arrive in carloads and set up camp for the night. Men reach into paper bags and pull out burritos and tacos bought at a local Mexican drive-thru for dinner. Someone lights a small fire that cannot be seen from the road. Some sleep in their cars, others unroll blankets and lie down on the Eucalyptus leaves. All are careful not to make too much noise because the occupants of the million dollar homes on the hillsides overlooking the clearing have complained about their presence in the past.

In the morning, those without steady jobs at the local nurseries make their way to a place called “Strawberry Fields,” a day labor pick-up point on Rancho Santa Fe Road. There, they wait for local residents or business owners to pull up and offer them a day’s labor weeding a garden or picking up debris from construction sites.



Workers gather by the lunch truck in San Diego County. Photograph by Carmelino Cruz.

2. Overcrowded Living Conditions for California Farmworkers

Late afternoon at the local market in Mecca, its 106 degrees outside and the workers flow steadily into the store to buy food and drink. The sweat cuts rivulets through the dust and dirt as it pours down their faces and their hands are calloused and dirty. Although it is only April, the grape harvest in the Imperial Valley is in full swing, testimony to California’s abundant agricultural

operations. Most of the workers are men, however a few women also stand in line to buy sodas, their hair covered by bandanas caked with perspiration and dust. Some of the workers leave the store in cars carrying five or six others and head out to the edge of town to overcrowded trailer parks, where row after row of trailers sit on the dry baked earth. The wind blows constantly across the desert and the dust kicks up and covers everything with a fine coat of grime. Many of the trailer parks are merely a congregation of trailers in a field, and have been condemned by the county. The residents are forced to seek housing elsewhere. In a town of 6,000 whose population swells to over 10,000 during the harvests, housing is rare and coveted. It is indeed ironic that the local Torres-Martinez Indian Reservation, itself impoverished, subsidizes the Valley's abundant agricultural production by renting land to farmworker families who live in trailers and under tarps. On the reservation, the county Health Department has no authority.

Other workers leaving the market walk out to the parking lot, where they live in their cars. There are no sanitary or water facilities available to them, save a port-a potty at the back of the lot, so these workers carry bottles of water with them. They pay the store owner \$25 per week to park and live in the black asphalt parking lot, driving up from Mexicali on Sunday evenings and returning to Mexico on Friday nights after work.

Still other workers make their way into the streets of Mecca, heading for houses they share with several other workers. Many of these houses have trailers and shacks in the backyards in which more workers and their families live. It is common in Mecca to see garages converted to living space, where often entire families live.

The rates of vacancy of dwellings in farmworker communities influence the quality of living conditions for California's agricultural workers. Table 4 summarizes the findings regarding vacancies in permanent structures. It is, of course, far less meaningful to report vacancies in the other dwelling categories.

Table 4. Vacancy Rates in Permanent Structures, CAWHS, 1999

<i>Community (CAWHS Site)</i>	<i>Vacancy Rate</i>
Arbuckle	6.7%
Calistoga	8.6%
Cutler	2.4%
Firebaugh	4.4%
Gonzales	1.3%
Mecca	1.7%
Vista	1.8%

The very low vacancy rates in Cutler, Gonzales, Mecca and Vista is quite striking, and likely accounts for the disproportionate share of workers residing in labor camps, temporary structures and vehicles. On the other hand, Arbuckle and Calistoga were found to have relatively high vacancy rates. In both of these communities, only a very

few hired farm workers were found to be residing in labor camps, temporary structures or vehicles. This latter finding is consistent with the observation that in communities with a housing shortage, hired farm workers live wherever they can find shelter, no matter how tenuous it may be.

CAWHS interviewers reported numerous instances of unusually large numbers of residents in some of the dwellings where eligible subjects had been located, sometimes more than a dozen in a one or two bedroom apartment. This anecdotal finding prompted a careful assessment of the issue of crowding and overcrowding in CAWHS dwellings.

The term "overcrowding" is a subjective assessment applied to determinations of population densities in a dwelling, usually expressed in terms of persons per room (PPR). Data on dwelling densities are reported by the Census of Population and Housing, expressed as PPR. The Census reports refer to room counts that exclude bathrooms. Thus, kitchens are counted along with bedrooms, living rooms and so on.

Unlike fixed standards of housing quality, such as whether or not a dwelling has plumbing or electricity, the measure used for determining if a dwelling is overcrowded has been remarkably altered during the past half-century (Myers et al, *Journal of the American Planning Association*, 1996). Prior to 1950, the conventional standard for overcrowding was 2.0 PPR. It was lowered to 1.50 PPR in 1950, and then again lowered to 1.00 PPR in 1960, half the widely accepted value just two decades earlier.

Importantly, the Bureau of the Census does not define the terms "crowding" or "overcrowding." Rather, the Census of Population and Housing simply reports findings of residential density, allowing other agencies to apply whatever standard seems to make sense. More precisely, the Census 2000 Technical Report states, "Although the Census Bureau has no official definition of crowded units, many users consider units with more than one occupant per room to be crowded" (*Summary File 3. Technical Documentation. 2000 Census of Population and Housing. Appendix 8, p. B-58. August 2002*). Unfortunately, many authors incorrectly assume that the Census Bureau defines overcrowding as corresponding to more than 1.00 PPR and attribute this criterion to the Census.

As described previously, the CAWHS enumerated the number of persons reported to be sleeping in each dwelling where a CAWHS subject resided. In addition, many Census 2000 questions regarding housing were deliberately included in the instrument.

In this paper, overcrowding is measured in two independent ways. First, we apply the generally accepted current standard that more than 1.00 PPR corresponds to overcrowded conditions, and that more than 1.50 PPR corresponds to extreme overcrowding. Second, an independent measure of crowding is presented that is based on the reported *average number of persons per room used for sleeping purposes*. This second criterion was found to be important because it was discovered that a significant number of CAWHS dwellings had residents sleeping in rooms other than bedrooms. For example, in a one-bedroom apartment with eight residents, it was found that roughly half would sleep in the bedroom and the other half would sleep in the living/dining room.

Using the widely adopted standard that overcrowding corresponds to more than 1.0 PPR, the present report finds that 48% of all CAWHS households are overcrowded. If we apply the standard that more than 1.50 PPR corresponds to extreme overcrowding, the present study finds that 25% of CAWHS households are extremely overcrowded.

Even more significant, if we examine the fraction of hired farm workers who live in crowded conditions, we find that 68% of all residents of CAWHS households live in overcrowded conditions. Fully 40% of residents of CAWHS households live in extremely overcrowded conditions. That is, two-thirds of hired farm workers and resident family members are living in overcrowded dwellings, and two-fifths live in extremely overcrowded conditions. The fact that a greater fraction of residents live in overcrowded dwellings than is the fraction of dwellings that are overcrowded reflects the simple observation that each dwelling having a large numbers of persons will contain more people than a dwelling having a small number of persons.

These findings are shown in Figure XX, where they are contrasted with corresponding findings for all California households. While just 15% of California dwellings are overcrowded by this measure, and 9% extremely overcrowded, the share of CAWHS dwellings that are overcrowded, or extremely overcrowded is three times greater (48% and 25%, respectively).

Since the overcrowding standard is arbitrary, the use of different standards leads to different findings. As described previously, a more stringent standard might define overcrowding as corresponding to the number of *persons per room used for sleeping* exceeding the arbitrary threshold of 2.00. This definition seeks to take account of the fact that in some CAWHS households, living and dining rooms as well as bedrooms may be used as sleeping quarters. The present study finds that in CAWHS households, 1,744 persons (45%) sleep in dwellings with more than 2.00 persons per room used for sleeping. Overall, 292 dwellings (31%) had more than 2.00 persons per room used for sleeping.

Summarizing these results, the CAWHS finds that at least one-third, and as many as one-half, of California's hired farm workers reside in dwellings that are overcrowded. And between two-fifths and two-thirds of all residents of dwellings that include at least one hired farm worker live in overcrowded conditions.

In addition to economic factors, overcrowding involves issues of household structure, such as whether a household comprises a nuclear or an extended family, consumer preference, neighborhood diversity, and housing availability. For example, analysis of 1990 Census data shows that the greatest degree of overcrowding (more than 1.00 PPR) and of extreme overcrowding (greater than 1.50 PPR) occurred among recent Asian and Hispanic immigrants (Choi, 1993). But both demographic sub-groups are unusually dominated by young families with larger than average numbers of adults of prime childbearing age. And fertility rates in both groups exceed national averages by a large margin. Thus, these groups are more likely to have larger than average size families as compared with the general population, and would likely be associated with higher values of PPR.

Several multivariate models have been developed to interpret Census data regarding crowding. Surprisingly, economic factors, such as housing supply and affordability were found to be relatively weakly associated with overcrowding as compared with Hispanic ethnicity and immigration status. "The only variable with a comparable effect is the percentage of households that are poor families with children. In fact, the importance of the Hispanic variable is weakened considerably when poor families with children is added to the model." (Myers, op. cit.)

The important conclusion can be drawn from these models that poor families of Hispanic ethnicity, which also have children, and comprised mostly of immigrants, are most likely to be found in overcrowded housing conditions. This profile corresponds rather closely to that of the hired farm worker population of the CAWHS sample. CAWHS subjects were asked to report the number of persons who sleep in the dwelling as well as the number of rooms in the dwelling. The highest number of persons living in a single dwelling was 17, found in five-room structure in Calistoga. Six or more persons were found to be resident in each of 227 dwellings, or one-fourth of the total number of dwellings. At the other size extreme, just 56 of the total of the 3,842 persons enumerated said they lived alone. Overall, the reported average number of residents per dwelling was 4.33.

Table 5. Average Number of Residents per Dwelling, CAWHS, 1999.

Dwelling Category	Persons per Dwelling (mean)
Permanent	4.37
Temporary	4.13
Labor camp	3.43

As shown in Table 5, the reported average varied by the type of dwelling: permanent dwellings had, on average, more residents while labor camps had the least. The vehicle category is not considered here.

The reported number of persons per occupied dwelling varied considerably among the CAWHS sites. Gonzales had the largest number per dwelling (4.85), Mecca the least (3.77). This is shown in Table 6.

Table 6. Average Number of Residents per Occupied Dwelling, CAWHS, 1999

CAWHS Site	Persons per Occupied Dwelling
Arbuckle	4.64
Calistoga	3.91
Cutler	4.50
Firebaugh	4.07
Gonzales	4.85
Mecca	3.77
Vista	4.58

When asked to report the number of rooms in the dwelling (exclusive of kitchens and bathrooms), the number ranged from a low of one to a high of eight. About 56% of the dwellings had just one or two rooms. The actual distribution varied considerably by dwelling category. On average, permanent dwellings were largest, averaging three rooms. Excluding vehicles, labor camps had the smallest average number of rooms. Importantly, a plurality of labor camp dwellings had just one room whereas 46% of permanent dwellings had at least three rooms. Table 7 shows the distribution of the number of rooms by type of dwelling. (Here might want to discuss the results of Table 9, because cost of renting corresponds to the number of people living in the dwelling. For

example the above table shows Gonzales and Vista with highest persons/dwelling, while Table 9 shows these sites also to be the most expensive)

Table 7. Number of Rooms, by Type of Dwelling, CAWHS, 1999.

<i>Category</i>	<i>One</i>	<i>Two</i>	<i>Three</i>	<i>Four</i>	<i>Five</i>	<i>Six or more</i>	<i>Average</i>
Permanent	74	330	210	82	42	13	3.04
Temporary	22	38	14	8	4	1	2.27
Labor camp	25	17	11	3	1	0	1.91

An index of crowding – the average number of persons per room - can be calculated from the figures reported in Tables 5 & 7. The ratio of the average number of persons per dwelling divided by the average number of rooms per dwelling equals the average number of persons per room. Once again, the vehicle category is not considered in this computation. The results, by type of dwelling, are shown in Table 8.

The CAWHS finds that permanent dwellings are, on average, the least crowded whereas temporary dwellings are the most crowded. In fact, temporary dwellings had, on average, 26% more persons per room than did permanent dwellings. Labor camps were only slightly less crowded than temporary dwellings.

CAWHS project staff repeatedly presented anecdotal evidence of “crowding” which they observed in dwellings occupied by CAWHS subjects, although no systematic measure of the extent of such “crowding” was developed independent of the present computation.

Table 8. Average Number of Residents per Room, by Type of Dwelling, CAWHS, 1999

<i>Type of Dwelling</i>	<i>Residents per Room (average)</i>
Permanent	1.44
Temporary	1.82
Labor camp	1.80

The number of hired farm workers per dwelling, as distinct from the total number of residents per dwelling, was also measured in the CAWHS. This was accomplished in the dwelling enumeration phase in which all persons in each dwelling who were eligible to participate in the CAWHS were enumerated, and then a random selection of a potential subject was made from that list.

Temporary dwellings had the largest average number of hired farm workers per eligible dwelling (1.85), as compared with permanent (1.76) or labor camp (1.61) dwellings. (How significant are these differences?) That fact, together with the greater likelihood that hired farm workers reside in temporary or labor camp dwellings, leads to the finding that, overall, approximately 30% of CAWHS subjects were residents of temporary or labor camp structures, or vehicles, at the time of the survey. This finding was highly variable within the seven community sites. In Mecca, for example, 60% of

CAWHS subjects resided in one or another of these three categories of dwellings whereas just 9% were found to live in such dwellings in Calistoga.³

A surprising finding was that 42% of CAWHS dwellings were shared by two or more unrelated households (Here we need a footnote that defines "households" in precisely the same way we did for the study). This figure varied greatly from site to site. In Vista, the community where it was largest, this figure was a striking 87%. Shared dwellings could not be simply characterized. It was found that sharing arrangements in some instances involved groups of unaccompanied men while in other cases it was two or more families, in all spouses and children were present.

There is another conceptual approach to the issue of crowding that actually may be the most important finding of the CAWHS housing survey. Crowding could be measured by whether or not a dwelling is shared by two or more unrelated families. An important finding of the CAWHS is that two-fifths (41%) of all dwellings were share by two or more unrelated individuals. There were an average of 3.6 unrelated persons reported in such dwellings, in addition to the CAWHS subject and family members. Altogether, one-third of the residents of all CAWHS dwellings were unrelated to the hired farm worker subject.

These results contrast sharply with the Census 2000 findings for California. Just 7.6% of the state's households were non-family with at least two residents, i.e., occupied by at least two unrelated persons who shared the dwelling. Thus, hired farm workers are more than five times as likely than all California residents to share their home with unrelated persons. More often than not, the unrelated persons living in the CAWHS dwelling were also determined to be hired farm workers.

Exiting Hwy 101 to enter Gonzales one passes a stand of small one-room shacks surrounded by chain link fence and razor wire. A broken tricycle lies on its side in a dry puddle and children run from door to door within the compound. Some of the buildings have running water, some do not. About 20 families and several single men share the space between the small shacks. After work, adults stand on the front doorsteps discussing the lettuce crop and the upcoming annual journey to Yuma, where they will follow to work the next lettuce harvest. At their feet the children make mud pies in the puddles formed by runoff from the irrigation of the surrounding lettuce fields.

At the other end of town off the same road the AltaVista apartments literally seethe with workers and their families. The high rent and low availability of housing in town combine to cause dense overcrowding of the apartments. With rent at \$825 per month, most families must share one-bedroom apartments with other families. It is common to find as many as 10 individuals living together. One frequently encounters someone in a bedroll out on the cement terrace that lines the courtyard of the building. The children play in the courtyard, a small cement and dead grass clearing between the four wings of the

³ A Calistoga farm labor camp, several miles south of the town, houses approximately fifty to sixty residents during the peak season. This camp was not selected in the random sample of Calistoga dwellings.

apartment building. In the relatively quiet and small agricultural town, the Alta Vista Apartments are known as the ghetto.

3. Composition of Farmworker Households

Each CAWHS subject was asked to complete a family grid in which all members of their household were identified by age, relationship to the subject, other personal characteristics, and whether those persons were residing with the subject at the time of the survey. For these data, it is possible to *infer* whether the subject was married, single, or had a different marital status (widowed, divorced, common-law relationship, etc.), and whether the subject was accompanied by a family member. Thus, six categories are possible: three of marital status (married, single, other) and two of family residence status (accompanied, unaccompanied).

In 309 CAWHS dwellings (33%), the subject was *unaccompanied* by even one member of their immediate family. In nearly all such instances, the other members of the subject's family were residing in Mexico at the time of the survey.

In 626 CAWHS dwellings (67%), the subject was *accompanied* by at least one family member. No effort was made to further analyze the nature of the familial relationships of those residing with the CAWHS subject, although the data is available. This is because of the great variety of types of accompanying family members: spouses, parents, children, siblings, aunts, uncles, cousins and nephews were all mentioned. For example, it was not unusual to find that CAWHS subject was accompanied by his or her spouse, but that some or all of their children remained in Mexico.

Of those CAWHS subjects who were unaccompanied, 82% were male. On the other hand, of those CAWHS subjects who were accompanied, just 56% were male.

Substantial differences were also found regarding the marital status of those who were unaccompanied as compared with those who were accompanied. Of married CAWHS subjects, 82% were accompanied by at least one family member, while 66% of single CAWHS subjects were unaccompanied.

Similarly, regarding gender, 88% of unaccompanied married subjects were male, and 83% of unaccompanied single subjects were male. Only in the categories of 'other marital status - accompanied' and 'single - accompanied' subjects were females predominant (53% and 61%, respectively).

I asked the subjects if they were concerned about the inconsistencies of the following numbers. I received the following answer from all 674 FARMERS interviewed within the state of...

*Table Y-1. Dwelling characteristics of male CAWHS participants, California, 1999,
N=626*

<i>Dwelling characteristic</i>	<i>Number of CAWHS participants</i>	<i>Percent of total male participants</i>
Resides in temporary dwelling	129	20.6%
Unaccompanied by family member	261	41.7%
Occupant density (persons per room used for sleeping, mean)	2.11	n.a.
Resides with unrelated persons	267	42.7%
Number of unrelated residents per dwelling with unrelated residents (mean)	3.6	n.a.
Lives alone	88	14.1%

Table Y-1 describes the dwelling characteristics of male CAWHS participants. Most striking of these findings are that 20.6% of male workers live in temporary dwellings, 41.7% are unaccompanied by a family member, 42.7% reside with unrelated persons, and 14% live alone. Importantly, the corresponding numbers for females are quite small (resides in temporary dwellings=50; unaccompanied by family member=59; lives alone=17).

Significant numbers of both males (267) and females (106) reside in dwellings with unrelated persons. Also, the mean occupant density, and the mean number of unrelated persons residing in dwellings that include unrelated persons are quite comparable for both male and females.

4. Farmworker Living Conditions and Income



Woman working in greenhouse in San Diego County. Photograph by Carmelino Cruz.

Most CAWHS subjects reported very low total annual family or household incomes during the year prior to the survey. The median reported value was in the range \$12,500 - \$14,999 (nominal, 1998 dollars). However, the reported values of median total income varied widely from community to community. The lowest values of median total income that were reported were in Cutler and Vista where it was in the range \$7,500 - \$9,999. The highest reported values were in Arbuckle and Calistoga. In both of these communities, the reported median total income was in the range \$20,000 - \$24,999. Table 10 shows the values of median reported total income for all seven CAWHS sites.

Table 10. Median Total 1998 Family Income, CAWHS, 1999

<i>Community (CAWHS site)</i>	<i>Total 1998 Family Income (nominal)</i>
Arbuckle	\$20,000 - \$24,999
Calistoga	\$20,000 - \$24,999
Cutler	\$7,500 - \$9,999
Firebaugh	\$15,000 - \$17,499
Gonzales	\$15,000 - \$17,499
Mecca	\$10,000 - \$12,499
Vista	\$7,500 - \$9,999

Higher total family income appears to be associated with a higher percentage of home ownership in Arbuckle (where rentals are relatively low), or with a higher monthly rental in Calistoga (where housing purchase prices are relatively high).

In Vista, where total family income is extremely low, the CAWHS finds both higher monthly rentals and an extremely high proportion (87%) of dwellings shared by two or more families.

In Mecca, rents are lower, but so is the value of median total family income, and the proportion of subjects who reside in temporary or labor camp dwellings is very high. Of course, those who reside in vehicles pay no rent.

Finally, Gonzales and Firebaugh are interesting because although the median reported total family income is the same the percentage of home ownership is much lower in Gonzales and rentals are relatively high (reflecting higher housing prices), but in Firebaugh the rentals are relatively lower and home ownership is relatively higher (reflecting lower housing prices).

The self-reported median family income was determined for each category of housing type described by the subjects. This is shown in Table 2, where it is reported that residents of single family detached units or of multi-unit apartment buildings reported the highest median incomes. It must be noted that subjects were asked to report their total family income within a specified range, corresponding precisely to Census categories. Median values correspond only to the range in which it is found.

Table 2. Median Total Family Income (range) by Housing Type, CAWHS, 1999

<i>Type of Housing</i>	<i>Median Total Family Income (range)</i>
Single family detached house	\$12,500 - \$14,999
Single family attached house	\$10,000 - \$12,499
Apartment building (2 or more units)	\$12,500 - \$14,999
Mobile home/trailer	\$10,000 - \$12,499
Rented room in hotel/motel	\$5,000 - \$7,499
Rented room in boarding house or labor camp	\$5,000 - \$7,499
Recreational vehicle/camper	\$5,000 - \$7,499
Personal automobile	\$5,000 - \$7,499

Importantly, persons residing in rented rooms, recreational vehicles, or personal, automobiles reported much lower total family incomes than persons who reside in single family detached houses or conventional apartment buildings.

CAWHS subjects were also asked to report whether they, or a member of their household, owned the dwelling in which they resided. Additional categories of dwelling tenure included: renter, employer-provided housing, or rented land on which hired farm worker had placed a trailer or temporary structure that was owned by the worker.

The main finding was that nearly one-fourth of all dwellings occupied by hired farm workers (23.2%) were reportedly owned by the worker or a member of their household. Most hired farm worker dwellings were found to be rentals (66.6%), of which a small portion were dwelling units obtained from their employer (5% of all dwellings). Significantly, about one worker in fourteen responded to this question by saying they "Didn't know" or otherwise declined to answer. Table 3 provides data on the median total family income range reported for each category of housing tenure.

Table 3. Median Total Family Income (range) by Housing Tenure, CAWHS, 1999

<i>Housing tenure</i>	<i>Median total family income (range)</i>
Home owned by subject HH - mortgage	\$20,000 - \$24,999
Home owned by subject HH – no mortgage	\$12,500 - \$14,999
Renter	\$10,000 - \$12,499
Employer owned housing	\$10,000 - \$12,499
Employer owned land/space only rental	\$5,000 - \$7,499

The most significant finding reported in Table 3 is that the median total family income reported by home owners is higher than that reported by renters. For purposes of comparison, the overall median total family income reported by all CAWHS subjects was in the range \$12,500 - \$14,999.

Approximately two-thirds (68.3%) of CAWHS subjects rent their dwelling. Roughly one in sixteen (6.4%) subjects rent from their employer. Both of these findings were highly variable from site to site.

In Arbuckle, half (51%) of CAWHS subjects said they own their home. But in Vista, just 6% were homeowners. Table 9 shows the percent renters in each of the sites.

Table 9. Percent Renters and Median Monthly Total Rental, CAWHS, 1999

<i>Community (CAWHS site)</i>	<i>Renters (percent)</i>	<i>Total Monthly Rent</i>
Arbuckle	48%	\$344
Calistoga	90%	\$525
Cutler	77%	\$350
Firebaugh	63%	\$350
Gonzales	90%	\$600
Vista	73%	n.a.
Tulare	6.4%	n.a.

Rentals were also found to be variable from community to community. Overall, the median total rent for a rented dwelling was found to be \$420 per month.⁴ But workers who resided in communities in the Coastal areas of the state paid much higher rentals (reported medians between \$525 and \$600 per month). On the other hand, those residing in the three Central Valley 'farm worker towns' paid much lower rentals. Table 9 also shows the reported median total rental for each CAWHS site.

Interestingly, the reported total monthly rentals bear no relationship to the corresponding vacancy rates in each of the communities.

Discussion of Housing

Nearly one-third of CAWHS subjects reside in temporary or labor camp structures, or in vehicles which are primarily used to go to work or other necessary transportation purposes. It is important to realize that structures termed 'temporary dwellings' are not recognized by either the County Assessor for real property tax purposes, nor do they have street addresses that are recognized by the U.S. Postal Service. It is very likely that most of these dwellings are not enumerated nor contacted by the U.S. Census, and are therefore not enumerated in Census 2000 data.

On average, CAWHS dwellings have 4.33 persons who reportedly sleep there, which is much higher than the average of 2.87 persons per dwelling reported in the Census 2000 for California.

The extent of crowding in dwellings occupied by hired farm workers is better measured by the high number of persons per room, 1.82 in the case of temporary structures. It is important to remember that the 'room' count used here refers to the total of bedrooms, living rooms, dining rooms, family rooms, but not kitchens and bath rooms. Thus, a two-bedroom apartment in the 'permanent structure' category occupied by a CAWHS subject, with one living room and one dining or family room, would total four rooms by this measure, and, on average, would have six persons (actually, 5.76 persons, on average) sleeping there. A four room 'temporary' structure has, on average, seven persons sleeping there (actually, 7.28 persons, on average).

A major finding is that one-third of all CAWHS subjects are unaccompanied while working in California. That is, these are persons who are working without any member of their family present with them. Most of these unaccompanied persons are unmarried men.

Finally, total family incomes are very low, in the range of \$12,500 - \$14,999, leading to crowding and the widespread use of temporary quarters. Some 42% of all CAWHS dwellings were found to be shared by two or more unrelated households. In California, Census 2000 reported that just 7.6% of all dwellings were shared by unrelated persons.

In the Coastal areas of the state, where housing prices and rentals are high, relatively few hired farm worker households can afford to purchase a home, and crowding is even greater. In Vista, some 87% of CAWHS dwellings were share by unrelated households.

⁴ Some CAWHS subjects said they paid a weekly or daily rent for their dwelling. In these instances, the figures provided by the subjects were converted to a monthly basis.

These are significant findings regarding suitable housing for hired farm workers. The large share of unaccompanied persons, most of whom are unmarried men, presents a unique challenge to those who wish to address the problem that workers encounter when seeking housing.

All public labor camps in California are exclusively reserved for the use of families, with no provision whatever for the large numbers of unaccompanied workers. Similarly, most private initiatives focus on ‘the dream of home ownership’ for higher income households without addressing the unmet needs of unaccompanied workers.

II. Farmworker Health Conditions



1. Self-Reported Health Conditions

Table XY-2 documents the self-reported health conditions experienced by agricultural workers of the CAWHS study within the last twelve months. Clearly, farmworkers suffer from health conditions that relate directly to the labor they perform in the fields and nurseries, including backpain, irritated eyes, dental problems, respiratory and gastrointestinal health problems. The responses regarding ethnoscience illnesses, particularly those associated with mental health, such as depression (depression), corajes (anger, frustration), nervios (anxiety), and susto (fright), call attention to the impact that the farmworker lifestyle has on worker health. More than half (53%) of all respondents claim to be suffering from some form of ethnoscience health condition, with 43.5 % of these being ethnoscience illnesses specifically associated with mental health. More than

one-third (38.4%) of men and more than one-half (50.8%) of women report suffering one or more of these ethnosppecific and generally psychological conditions.

**TABLE XY-2. Self-reported health conditions that had occurred within the 12-month period prior to the interview, Hired Farm Workers, California, 1999,
CAWHS, N=970 (626 Male; 344 Female)**

<i>Health Condition</i>	<i>Number of Males</i>	<i>Percent of Males</i>	<i>Number of Females</i>	<i>Percent of Females</i>
Dental problems	164	26.2%	126	36.6%
Persistent cough	39	6.2%	21	6.1%
Wheezing	27	4.3%	13	3.8%
Cough up phlegm	16	2.6%	5	1.5%
Back pain	143	22.8%	73	21.2%
Diarrhea	35	5.6%	11	3.2%
Stomach aches	56	8.9%	44	12.8%
Vomiting	13	2.1%	10	2.9%
Painful urination	24	3.8%	21	6.1%
Irritated eyes	134	21.4%	78	22.7%
Ear aches	50	8.0%	27	7.8%
Hearing problems	34	5.4%	13	3.8%
Broken bones	31	5.0%	5	1.5%
Lacerations	35	5.6%	5	1.5%
Depresión	43	6.9%	42	12.2%
Corajes	81	12.9%	47	13.7%
Nervios	87	13.9%	73	21.2%
Susto	35	5.6%	16	4.7%
Empachos	21	3.4%	5	1.5%
Aires	26	4.2%	15	4.4%
Mollera caida	1	0.2%	0	0%
Latido	25	4.0%	21	6.1%
Mal de ojo	3	0.5%	1	0.3%
Embrujiado	7	1.1%	1	0.3%

2. Self-Reported Risk Behavior

Male and female CAWHS participants were asked in private after physical examinations questions concerning risk behaviors including alcohol consumption, sexual practices, and drug consumption. Table XY-5 shows that alcohol consumption, violence, and high-risk sex behaviors, such as sex with a prostitute, and the worker's obligation to use a *raitero* (labor contractor pay-for-ride) system to get to work influence agricultural worker health.

TABLE XY-5. Self-reported risk behavior findings, Hired Farm Workers, California, 1999, CAWHS, N=651 (Male 415 Female 236)

<i>Risk Behavior</i>	<i>Number of Males</i>	<i>Percent of Males</i>	<i>Number of Females</i>	<i>Percent of Females</i>
Consume alcohol	267	64.3%	20	12.7%
Alcohol – Number of drinks per episode - Mean	5.56	n.a.	2.12	n.a.
Monthly alcohol consumption (number of drinks) - Mean	46	n.a.	6	n.a.
Alcohol use while at farm job	30	7.2%	4	1.7%
Smoke 100 cigarettes - lifetime	186	44.8%	23	9.7%
Drug use - ever	95	22.9%	4	1.7%
Victim of violence	20	4.8%	12	5.1%
Victim of domestic violence	4	1.0%	10	4.2%
Threatened with violence at work	9	2.2%	8	3.4%
Doctor says you have STD	48	11.6%	11	4.7%
Sex with prostitute - ever	157	37.8%	n.a.	n.a.
Use <i>raitero</i> to get to work	112	27.0%	113	47.9%

3. Doctor-Reported Health Conditions

CAWHS participants were asked "has a doctor ever told you that you have (health condition)?" and numerous health conditions, including tuberculosis, high blood pressure, asthma, and allergies were named. Table XY3 describes frequencies of doctor-diagnosed health conditions among CAWHS participants. Allergies, arthritis, high blood pressure, diabetes and tuberculosis appear to be the most common of these health conditions.

TABLE XY3. "Has a doctor told you that you have (health condition)?", Hired Farm Workers, California, 1999, CAWHS, N=970 (Males 636, Females 344)

<i>Health Condition</i>	<i>Number of Males</i>	<i>Percent of Males</i>	<i>Number of Females</i>	<i>Percent of Females</i>
Tuberculosis	13	2.1%	16	4.7%
Cancer	0	0%	7	2.0%
Diabetes	18	2.9%	12	3.5%
High blood pressure	37	5.9%	34	9.9%
Heart attack	4	0.6%	4	1.2%
Anemia	6	1.0%	18	5.2%
Arthritis	44	7.0%	23	6.7%
Stroke	0	0%	1	0.3%
Asthma	8	1.3%	7	2.0%
Hepatitis	4	0.6%	0	0%
Allergies	71	11.3%	52	15.1%
Skin condition	21	3.4%	13	3.8%
Mental illness	7	1.1%	2	0.6%
Neurological disorder	7	1.1%	4	1.2%

4. Physical Examination Findings

Agricultural workers participating in the CAWHS state-wide health study took physical exams at clinics or mobile clinics in each of the seven study sites. Table XY-4 shows that dental problems affect more than three-quarters of the CAWHS workers, followed by obesity, high blood pressure, high cholesterol, and anemia-, diabetes-, and STD risk indicators. Both men (29.2%) and women (39%) suffer from obesity, while men show much more risk from high blood pressure (26.5%) than do women (4.2%).

TABLE XY-4. Physical Examination Findings, Hired Farm Workers, California, 1999, CAWHS, N=651 (Males 415, Females 236)

<i>Risk Behavior</i>	<i>Number of Males</i>	<i>Percent of Males</i>	<i>Number of Females</i>	<i>Percent of Females</i>
Abnormal dental exam	312	75.2%	180	76.3%
Obese	121	29.2%	92	39.0%
High blood pressure	110	26.5%	10	4.2%
Anemia risk	19	4.6%	26	11.0%
High cholesterol	70	16.9%	10	4.2%
High glucose (bcd)	20	4.8%	8	3.4%
Syphilis screen positive	3	0.7%	3	1.3%

III. The Impact of Living Conditions on Farmworker Health



Emiliano Avendaño sprays at a greenhouse in San Diego County. Photograph by Carmelino Cruz.

1. Self-Reported Health Conditions related to Living Conditions

Table A shows the correlations between self-reported health conditions and measures of crowding. Statistically significant correlations are associated with increasing numbers of unrelated residents. As can be seen in the table, earaches, persistent cough, stomach aches, and painful urination are statistically correlated with occupant density, the number of unrelated residents, whether or not the farmworker is accompanied by family or lives alone, and dwelling type. Of importance are the correlations of ethnoscience illnesses associated with mental health, such as depresión (depression), corajes (anger), nervios (stress), and susto (fear). Additionally, other ethnoscience illnesses, several of which are associated with diet and digestion, including empachos (indigestion), aires (bad airs in the body), latido (listlessness), and embrujado (witchcraft), correlate significantly with living conditions. The fact that most of the ethnoscience illnesses are associated with mental

health indicates possible feelings of vulnerability, alienation, anxiety over separation from family, and suspicion of the unknown.

TABLE A. Self-reported health conditions that had occurred within the 12-month period prior to the interview, Male Hired Farm Workers, California, 1999, CAWHS, N=626 (Pearson's correlation co-efficients; Bold: p < 0.01; Italics: p < 0.05)

<i>Health Condition</i>	<i>Resides in Temporary Dwelling</i>	<i>Unaccompanied by Family Member</i>	<i>Occupant Density</i>	<i>Number of un-related residents</i>	<i>Lives alone</i>
Dental problems	0.097	0.109	0.105	X	0.143
Persistent cough	X	X	X	0.091	X
Wheezing	X	X	X	X	X
Cough up phlegm	X	X	X	X	X
Back pain	X	X	X	X	X
Diarrhea	0.128	X	X	X	0.172
Stomach aches	X	<i>0.099</i>	X	X	X
Vomiting	X	X	X	X	X
Painful urination	X	X	X	0.097	X
Irritated eyes	X	X	X	X	X
Ear aches	X	0.109	0.086	0.121	X
Hearing problems	X	X	X	X	X
Broken bones	-0.081	X	X	X	-0.093
Lacerations	X	X	X	X	X
Depression	X	<i>0.104</i>	X	0.088	X
Corajes	X	X	X	0.100	X
Nervios	0.114	0.150	X	0.146	X
Susto	X	X	0.149	0.170	X
Empachos	X	X	0.083	X	X
Aires	X	X	0.113	0.125	X
Mollera caida	X	X	X	X	X
Latido	X	X	0.104	X	X
Mal de ojo	X	X	X	X	X
Embrujado	0.095	X	0.153	X	X

2. Doctor Reported health Conditions and Living Conditions

Table B

3. Farmworker Behavior and Living Conditions

The CAWHS study recorded self-reported behaviors and characteristics of farmworker lives. These behaviors and characteristics, including alcohol consumption, legal status, income, and number of years living in the United States, were then cross tabulated with living conditions to examine significant associations between behaviors and living conditions using Pearson's correlation coefficients to determine statistically significant correlations between dependent and independent variables (see Appendix II for discussion of variables and statistical calculations).

Table D (1) reports associations between self-reported behaviors and characteristics and various outcomes. Increased alcohol consumption, undocumented legal status, low income, low home ownership rates, participation in the *raitero* (pay-for-ride) system, and fewer years in the United States and in agricultural work are significantly associated with living conditions characterized by high density sleeping quarters and large numbers of unrelated residents⁵.

TABLE D(1). Self-reported behavior findings, Male Hired Farm Workers, California, 1999, CAWHS, N=415 (Mecca not included in column 4)

<i>Health condition</i>	<i>Occupant density (residents/room used for sleeping)</i>	<i>Number of residents in dwelling</i>	<i>Number of un- related residents</i>
Last visit to traditional healer	X	X	X
Consume alcohol	X	X	X
Alcohol – Drinks per Episode	X	X	0.189
Monthly alcohol	X	X	X

⁵ The negative values simply mean that the specified outcome varies inversely with increases in the value of the independent variable (anti-correlation). For example, fewer years in the U.S. reported by a CAWHS participant is primarily associated with increasing numbers of unrelated residents in the dwelling (-0.304) and secondarily with increasing occupant density in the dwelling (-0.197). Interestingly, the prevalence of binge drinking (large number of drinks per episode) is associated with increasing numbers of unrelated residents in the dwelling.

consumption (number of drinks)			
Victim of violence	X	X	X
Use <i>raitero</i> to get to work	0.178	X	0.235
Undocumented	0.166	X	0.290
Years in U.S.	-0.197	X	-0.304
Years of farm work in U.S.	-0.138	X	-0.286
Occupant density	n.a.	0.570	0.305
Number of residents	0.570	n.a.	0.424
Number of unrelated residents	0.305	0.424	n.a.
Total family income in 1998	X	0.218	-0.173
Own or purchasing house in U.S.	-0.147	0.113	-0.251
Own or purchasing car or truck in U.S.	X	X	-0.210

4. Farmworker Risk Behavior and Living Conditions

When self-reported agricultural worker risk behaviors are correlated with living conditions such as residence in temporary dwellings, workers unaccompanied by family members, occupant density, number of unrelated residents, and living alone, we see a number of alarming associations. Table D (2) shows that the number of unrelated residents sharing a dwelling increases, along with the occupant density, temporary dwelling status, and worker unaccompanied by a family member, correlate with alcohol consumption, incidence of sexually transmitted disease, violence, and, again, the use of the *raitero* (labor contractor pay-for-ride) system.

Table D (2)

Appendix I

Table A-1. Number of CAWHS Dwellings, by Site and by Type of Dwelling, CAWHS, 1999

Dwelling Type	Arbuckle	Calistoga	Cutler	Firebaugh	Gonzales	Mecca	Vista	Total
Permanent	76	29	150	222	145	42	98	762
Temporary	7	3	26	29	2	25	1	92
Labor camp	2	0	2	5	0	26	25	60
Vehicle	0	0	0	0	0	21	0	21
<i>Total</i>	85	32	178	256	147	114	123	935

Table A-2. Dwelling Type (Researcher Classification) vs. Housing Type (Subject self-reported), CAWHS, 1999

Housing Type	Permanent	Temporary	Labor Camp	Vehicle
Mobile home/trailer	22	61	32	0
Single family – detached	313	14	11	0
Single family – attached	99	4	5	0
Multi-unit apartments	322	1	1	0
Rented room in hotel/motel	0	1	2	0
Rented room in boarding house	3	7	2	0
RV/Camper	0	0	4	0
Automobile	0	2	0	18
Tent, lean-to	0	0	1	0
Other	0	1	1	3
Not answered	3	1	1	0

Appendix II

Housing and Health, Bivariate Correlations, CAWHS, 1999

This report discusses statistical findings of the associations between measures of crowded housing and of health as determined from the CAWHS. The report is divided into four main sections: Overview of Variables, Findings Regarding Socio-economic Status, Findings Regarding Health Status, and Findings Regarding Risk Behaviors.

Overview of Variables

Five independent variables are considered in detail:

Resident in temporary dwelling (labor camp, temporary dwelling, vehicle, homeless)

This is a derived variable. Dwelling type was assigned by direct observation by CAWHS staff.

Unaccompanied by family member

This is a derived variable. Participant's family grid indicated no family member present, and confirmed in dwelling enumeration.

Occupant density (number of persons sleep in dwelling per room used for sleeping)

This is a derived variable, based on inquiries regarding the number of persons who sleep in the dwelling (H19) and the number of rooms used for sleeping (H18). The ratio (H19)/(H18) is defined to be "occupant density." This is a numeric, decimal number, e.g., 1.50.

Others living with you now (A15)

Lives alone

This is a derived variable, based on the family grid and response to A15.

Dependent variables:

Forty-nine variables are examined with regard to possible correlation with the above-described independent variables. The variables are described more fully in the accompanying three Excel tables.

Table A is derived from instrument inquiries k1-k13g (self-reported health conditions).

Table B is derived from instrument inquiries L1-L14 (has a doctor told you ____).

Table D is derived from the Risk Behavior instrument.

Pearson's correlation coefficients are calculated in each instance between one of the independent variables and a dependent variable. The Pearson correlation coefficient always assumes a value between +1 and -1 (including zero). The degree of precision of the calculated coefficient in describing an association between two variables is measured by the amount of a separate quantity known as "significance." Only if the calculated "significance" is smaller than the absolute value of the correlation coefficient are the two variables thought to be statistically associated. And only if the calculated "significance"

is smaller than 0.01 is the statistical association regarded as particularly meaningful (99% reliability). Significance smaller than 0.05 is also considered significant at the 95% level.

Whether a calculated Pearson coefficient refers to “correlated” or “anti-correlated” can be inferred from the algebraic sign of the coefficient. However, the algebraic sign of the calculated coefficient for a particular pair of variables also depends upon the numerical values associated with specific responses for each variable.

Usually, coding is assigned so that *ascending* numerical value is associated with *increasing* quantitative value. Examples include: family income, number of persons who sleep in this dwelling, number of rooms in the dwelling, etc. The code varies from “0” to higher values with increased quantity of the variable. Correlation coefficients calculated between pairs of variables of this form will have the following meaning: *positive* coefficient means correlated, *negative* coefficient means anti-correlated.

On the other hand, in the CAWHS, coding of responses for variables that are of the form “Yes, No, Doesn’t know, Not answered” have usually been coded in *ascending* numerical value (1, 2, 8, 9). In these cases, the correlation between such a variable and one in which *increasing* numerical value has a quantitative meaning, such as “number of persons sleep in dwelling,” then the meaning of the calculated algebraic sign is the reverse of what was stated in the previous paragraph. *Negative* means “correlated” and *positive* means “anti-correlated.” In other words, the numerical value assigned to “Yes” is smaller than that assigned to “No”.

Unfortunately, some coding in the CAWHS was the reverse: “Yes” corresponding to the numerical value “1” and “No” corresponding to “0”. Care has been taken to be sure which type of coding was used.

Example 1 (not reported in Tables A, B, D):

Computation of Pearson coefficient for the following two variables:

Do you own or are you buying a house in the U.S.? (H25house)

What was your family’s total income, including yours, last year in U.S. dollars? (H3)

The first question was coded “1” if the response was “Yes” and coded “0” if the response was “No”. Thus, *increasing* numerical value in response to this question is associated with the *affirmative*. The second question was coded from “1” (lowest income category) to “13” (highest income category). For this question, *increasing* numerical value in the response is associated with *higher* income.

The calculated Pearson coefficient for these two variables from the CAWHS data is +0.410, and the correlation is significant at the 0.01 level; there is a statistical 99% likelihood that the calculated correlation is true. Interpretation of this finding is straightforward: the higher the family income of CAWHS participants, the greater is the likelihood that the respondent owns or is buying a home in the U.S.

The numerical value +0.410 is considered to reflect a strong correlation. That is, the CAWHS finds a strong association between increased family income and home ownership, and this finding is significant at the 99% level.

Example 2 (not reported in Tables A, B, D):

Computation of Pearson coefficient for the following two variables:

Occupant density? (H19/H18)

Ever use a “borrowed” Social Security card? (N5)

The first question is quantitative, with increasing value associated with higher occupant density. The second question is of the standard “Yes, No, Doesn’t know, Not answered” form and was coded as “1, 2, 8, 9”, respectively.

The computed Pearson correlation coefficient is -0.052 and the calculated significance is 0.134 . Since the calculated significance is *larger* than the absolute value of the correlation coefficient, there is no statistical association found between these two variables.

Example 3 (this finding is reported in Table A):

Computation of Pearson coefficient for the following two variables:

Occupant density? (H19/H18)

Do you have this problem?: Susto/Espantos (K13a)

As previously, the first question is quantitative, with increasing value associated with higher occupant density. The second question is of the standard “Yes, No, Doesn’t know, Not answered” form and was coded as “1, 2, 8, 9”, respectively.

The computed Pearson correlation coefficient is -0.149 and the calculated significance is 0.000 . Since the calculated significance is *smaller* than the absolute value of the correlation coefficient, there is a statistically significant association between occupant density and the prevalence of self-reported susto/espantos. Moreover, the fact that the algebraic sign of the calculated correlation coefficient is negative, it can be concluded that the association is such that the *greater* the occupant density, the *higher* is the likelihood that the respondent will self-report having *susto*. This follows from the fact that the *lowest* numeric value of the coding for the inquiry regarding *susto* corresponds to “Yes” and the *higher* numeric value corresponds to “No.”

Findings Regarding Socio-economic Status

a. Occupant density

Occupant density, calculated from the reported number of persons sleeping in the dwelling and the reported number of rooms used for this purpose, is found to be statistically associated with the total number of residents as well as with the number of “other persons” (unrelated to the CAWHS participant) living in the dwelling. The strongest association of occupant density was found to be with the total number of residents for which the calculated correlation coefficient was 0.568 ; the finding is significant at the 0.01 level. The association between occupant density and “others living

"with you now" was somewhat less strong: the correlation coefficient was 0.319; this finding is significant at the 0.01 level. These findings are not reported in Tables A, B, D.

These findings are somewhat self-evident: more residents lead to higher occupant density. But this will only be the case if the number of rooms used for sleeping does not vary greatly. In the CAWHS, the number of rooms reportedly used for sleeping ranged from 1 to a maximum of just 6, and was typically in the range of 2 to 3 rooms, while the number of people reportedly sharing these rooms for sleeping purposes ranged from 1 to 17. Clearly, given these figures, the association of higher occupant density with increased numbers of residents is understandable.

b. Type of employer

No statistical association was found between the participant's type of employer (Grower, Labor Contractor, Packing Shed, Packing House, etc.) and any of the three independent variables. That is, no relationship was found between measures of crowded housing and whether a hired farm worker was employed by a farm operator or a labor contractor. This finding is not reported in Tables A, B, D.

c. Undocumented immigration status

Self-reported undocumented immigration status was found to be positively associated with the number of "other persons living with you now" (unrelated persons) reportedly sharing a dwelling with the CAWHS participant. The calculated Pearson coefficient was 0.279, and the finding is significant at the 0.01 level. That is, the greater the number of "other persons" sharing the CAWHS participant's dwelling, the greater is the likelihood that the CAWHS participant is undocumented. This finding is not reported in Tables A, B, D.

An association was also found between undocumented immigrant status and dwelling occupant density: the calculated correlation coefficient is 0.140; the finding is significant at the 0.01 level. The fact that this association is not as strong as that with "other persons living with you now" suggests that undocumented workers in the CAWHS sample were more likely to be found residing in dwellings with unrelated persons as compared to residing only with family members. This finding is not reported in Tables A, B, D.

Strong support for the latter interpretation is obtained from the fact that there was no statistically significant association between undocumented immigration status and the "number of persons" reported to be sleeping in the dwelling. Thus, even if the number of persons sleeping in the dwelling increases, the likelihood of the respondent being undocumented does not increase unless the number of "other persons living with you now" goes up.

A related finding concerns use of "borrowed" Social Security cards. No statistical association was found between occupant density and the use of such a borrowed card. And no association was found between "number of persons sleeping" in the dwelling and the use of a borrowed card.

On the other hand, there was a statistically significant association between "others living with you now" and the use of a borrowed Social Security card. The correlation

coefficient in this case was -0.122; the finding is significant at the 0.01 level. Note that the question regarding use of a borrowed card was coded in the form in which "1" corresponds to "Yes" and "2" corresponds to "No". Thus, the negative algebraic sign in the correlation coefficient means that larger numbers of "others living with you now" is more likely to be associated with "Yes" regarding use of a borrowed card. These findings are not reported in Tables A, B, D.

III. Health Conditions and Living Conditions

table A, D

ethnospecific illness and mental health

IV. Behaviors and Living Conditions