PSYCHIATRIC SYMPTOMATOLOGY AMONG MEXICAN AMERICAN FARMWORKERS

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Abstract—The paper presents findings from an epidemiologic field survey of 500 Mexican American farmworkers conducted in central California. The survey was intended as a health needs assessment of this population and the Health Opinion Survey was used to establish normative psychiatric symptom distributions. Analyses of the data by gender, age and income revealed that these socio-demographic variables were not important predictors of symptom levels, although the highest mean scores were reported in the 40–59 age group. Income levels were modest and fairly uniform, which contributed to the lack of mean score variation.

Symptom distributions were analyzed for the variables age and sex using the HOS criteria of caseness and it was found that approx. 20% of the sample reached the criteria of caseness. A comparison of HOS mean scores with a national sample of surveys indicated that Mexican American farmworkers had symptom levels which resemble those of other low income socio-economic groups, such as southern blacks. Another analysis was conducted which reported a striking correspondence between self perception of health with psychiatric symptoms.

A conclusion reached from the survey is that the Mexican American farmworkers in this sample appear to be experiencing psychiatric symptom levels which place them at extraordinary risk. Stresses associated with this group, i.e. limited social mobility, transience, poverty, discrimination and a high rate of traumatic life events were identified as possible contributors to this risk proneness.

Very little is known or has been written about the prevalence of mental disorders among Mexican Americans. and no epidemiological literature exists concerning the rural farmworker population. This paper presents data from a survey which was conducted in the labor camps and housing areas of the central San Joaquin Valley in California during the summer of 1981. The survey was developed in order to assess the health status and the health services utilization characteristics of Mexican American farmworkers. Various symptom measures were identified for inclusion. This paper reports the results of one of those symptom check lists, the Health Opinion Survey (HOS), a 20 item measure of psycho-physiological distress which has been used in epidemiological studies throughout the world. To our knowledge, this is the first psychiatric prevalence study ever attempted with Mexican American farmworkers. Several additional questions were asked which sought to establish the relationship between self perceptions of health, stressful life events and psychiatric symptomatology.

The Hispanic population is the second largest minority group in the United States and, due to a combination of high fertility rates and continuing immigration, is projected to become the largest minority group in the country by the year 2030. According to the 1980 U.S. Census, this population increased from 9.6 million in 1970 to 14.6 million in 1980, excluding undocumented aliens, who are not counted by the census. Approximately one-third, or 4,543,770 people, live in California. The overwhelming majority of these are Mexican Americans. Overall, the population is young, poor and exhibits very low educational attainment levels [1]. For Mexican Americans specifically, the median age is approx. 20 years of age. About 27% of Hispanic origin people

were below established poverty levels in 1976 compared to 10% of Anglos [2].

PREVIOUS RESEARCH

Epidemiological surveys with Mexican American populations are a recent development, and the literature contains only a handful of reports which have, in most cases, used non-specific psychiatric symptom measures. The results of this research are conflicting and inconclusive. For example, Antunes et al.[3] and Gaitz and Scott [4] cite data obtained using the Langner 22-Item Symptom Inventory [5], a measure of psycho-physiological distress, which indicate that Mexican Americans have fewer symptoms than Anglos, even when socio-economic status is controlled. Quesada et al. [6] report lower rates for Mexican Americans than for Blacks on the Zung depression measure [7].

In contrast to the findings cited above, Vega et al. found higher symptom levels for Mexican Americans than for Anglos using a non-specific depression scale [8]. Vernon and Roberts [9] report data gathered using the CES-D [10] and find higher levels of depressive symptoms among Mexican Americans when compared to both Blacks and Anglos; with risk for caseness rates at 28.5% for Mexican Americans, 18.1% for Blacks and 14.6% for Anglos. These same investigators also report the only known diagnostic data from the same study using the SADS–RDC life-time version [11]. In this instance they find that Mexican Americans had the highest rate (22.1%) of diagnosed mental illness, with Anglos (21.0%) and Blacks (17.6%) slightly lower. Finally, Frerichs et al. [12] also found higher depression rates among Mexican Americans using the CES-D. The risk for caseness rate for Mexican Americans was 27.4%, with

21.4 and 21.8% for Blacks and Anglos, respectively. Unfortunately, most of the studies reported above involved relatively small samples of Mexican Americans, and those reporting use of the CES-D had significant non-response rates as well. Therefore, it would be difficult to draw any firm conclusions based on this evidence alone.

Vega et al. [13] in a research study closely resembling the research reported below, found that overall Mexican Americans were consistently higher on the Health Opinion Survey than were Anglos. However, when the scores of first and second generation Mexican Americans were compared, it became evident that the mean scores of second generation respondents were more similar to Anglos than they were to first generation Mexican Americans. The level of acculturation, especially as indicated by language preference at time of interview and educational attainment, were significantly associated with symptom levels. The data set was large enough to permit controlled analysis, and it was found that first generation Mexican Americans between 40 and 60 years of age reported the highest symptom levels on the HOS.

Our research differs from those reported above in that it is concerned with the psychiatric status of Mexican American farmworkers. This study provides an excellent opportunity to analyze data concerning a population about which nothing is known, but which can be compared with much of the research previously cited.

SITE CHARACTERISTICS

It has been estimated that there are over one million farmworkers in California during the peak of the agricultural season [14]. This survey was conducted in a vast agricultural valley in a period of high labor activity. During the harvest season, the labor camps and residential areas where the interviewing took place are often highly congested and characterized by redimentary housing arrangements. The farmworkers are usually low income and fluent Spanish speakers, though the second and subsequent generations may also be fluent in English. Overall, the group is socially marginal, a situation reinforced by the physical isolation, discrimination and limited opportunity experienced by the farmworkers. Quite significantly, the farm labor population also contains numbers of migrants from neighboring states in the U.S. and undocumented workers from Mexico.

INSTRUMENTATION

The primary purpose of the study was to determine the physical and mental health status of the population using a number of measures in order to determine whether or not high risk individuals were receiving treatment, and within what settings. In this paper, the data presented are limited to the results of a check list of psychiatric symptoms with some analysis of related variables.

The Health Opinion Survey (HOS) was originally developed as a measure of psychoneuroticism by MacMillan [15], and later used by the Leightons in their Stirling County study [16]. The instrument has been tested for validity and reliability by a number of investigators including Moses et al. [17], and extensive validation studies have also been conducted with the HOS by Kaldau et al. [18]. Partial results of the Kaldau et al. validity study are shown in Exhibit A. Samples of patients and non-patients, were rated blindly by board certified psychiatrists who placed them into a range of risk groups based on the number of risk related factors each presented. The subject each had a comprehensive standardized case protocol that was assessed using risk factors (primarily stressful life events) known from the mental health literature to be related to psychological distress and need for treatment. The subjects were also administered the HOS. With these two sets of independent ratings, direct comparisons can be made as well as judgements regarding the discriminating power of the HOS for identifying patient vs non-patient subjects and for specific disorders. Clearly, the HOS demonstrates the highest sensitivity in the identification of diagnosed neurotic patients and is responsive to the risk levels established for purposes of validation.

Although the HOS has been criticized by Tousignant et al. [19] as an instrument for measuring general psychopathology, it was found to be valid and reliable by these same investigators for screening chronic mental disorder, transitional stress reactions and bad physical health. Since these are conditions regularly reported from psychiatric patient populations, the value of the HOS for the present research study would appear to be established. In addition, the HOS also contains depression and anxiety subscales, which would explain the sensitivity of the scale to stress related disorders. The pervasive use of this measure by other investigators would also support this assertion [20]. We believe that the HOS is a valid scale for identifying individuals suffering from psychophysiological distress and provides a good baseline for analysis of the results from this study.

METHODS

This project was assisted by a university-based research team that is fully bilingual and very familiar with the research sites. Bilingual field supervisors were hired and trained who in turn helped to identify and train interviewers. The entire instrument was carefully translated and field tested. The HOS had already been thoroughly translated and back translated and used in numerous studies with Spanish speaking people. The internal reliability of the scale was tested using Cronbach's technique [21] and found to have an Alpha of 0.8. Using this test, the threshold of acceptable internal reliability is 0.5.

The development of the sampling plan reflected the primary objective of the research: to conduct a representative needs assessment of rural Mexican American farmworkers. The greatest difficulty in the development of a sampling plan was the inability to accurately enumerate the entire universe of possible respondents, given the high degree of mobility among these farmworkers and their seasonal fluctuations. These conditions along with the geographic dispersal of the population obviated the use of a classic probability design. On the other hand, the use of a 'snowball', or purposive sample was rejected because of the low generalizability that would be forthcoming from the use of that strategy.

nulti-stage cluster sampling plan was initiated
had several important characteristics. The
region was divided into quadrants and all
ʔorated and unincorporated communities and
camps were identified. These communities were
ied by the proportion of farmworkers residing
ı them, and the labor camps were stratified by
er of occupants. From these listings, a stratified
ibility sample was selected. The next step was to
blocks within those communities previously
fied for inclusion in the sampling pool. Enumer-
selected blocks from maps of the areas and they
systematically sampled. If the household se-
had no farmworker present, it was replaced by
ting at the next dwelling. In the labor camps
eration was not necessary, and a systematic
le was conducted.
all, 501 respondents were interviewed with less
a 5% refusal rate. Of this total, 233 respondents
local regular farmworkers and 130 were mi-
ry. Overall, 337 respondents were drawn from
ıunity residences and 165 were selected from
camps. The research team decided on the final
le size based on available resources for conduct-
ıe study, since the total size of the farmworker
lation remains unknown. Only respondents 18
er were interviewed.

RESULTS

ble 1 displays both the demographic character-
of the sample and the HOS scores with simulta-
s controls for sex, age and income. The age
butions for both sexes are similar, with the
an age in the mid-thirties. The household income
are also similar for both genders, with a slightly
ır proportion of males having incomes under
). The majority of both sex controlled sub-
les have incomes under $7900, and very few
ındents of either gender report household in-
in excess of $15,000. This is a very homo-
ʊus socio-economic group.
ıe HOS scale score means for both genders are
ar. Females have a group mean of 28.43 and
s a group mean of 27.77. The mean scores were
ıst for both sexes in the age intervals 40–59
sive. However, this data is more remarkable for
imilarity of scores between males and females in
ʒe intervals. No notable differences in scores by
ne were found. These overall similarities, com-
l with small cell sizes in the controlled analysis,
uded the finding of statistical significance using
ʏsis of variance. For reasons of clarity, these
ts have been omitted from Table 1.
order to increase the descriptive power of this
ʏsis, three additional comparisons are made.
, the results of this survey are analyzed using the
i criterion of caseness. Second, the association
een stressful life events and HOS scores is dis-
:d. Third, the results of this study are compared
other national field surveys which also used the
; with Mexican American, Black and Anglo
ılations.
ıe method of estimating risk levels with the HOS
consider anyone scoring one statistical standard
ıtion (SD) or more above the total group mean

Table HOS scale score means by sex, age and income: farm-workers survey

	n	Mean	SD
Males	281	27.772	5.872
Females	219	28.429	6.715
Sex			
Males			
Under 20	31	27.065	4.351
20–29	97	27.381	5.405
30–39	63	28.048	5.993
40–49	45	28.711	7.005
50–59	25	29.240	6.942
60+	15	26.200	5.906
Females			
Under 20	11	26.364	5.971
20–29	77	27.429	6.346
30–39	56	28.643	5.839
40–49	47	29.872	7.468
50–59	20	29.750	8.422
60+	7	28.143	7.581
Income			
Males			
Under $4000	79	28.241	6.951
$4000–$7999	99	27.111	5.509
$8000–$14,999	55	27.964	5.524
$15,000+	9	28.556	3.206
Females			
Under $4000	30	27.867	6.932
$4000–$7999	75	28.973	6.682
$8000–$14,999	76	28.803	6.569
$15,000+	16	27.000	7.071

as at risk for caseness. It should be noted, if it is not
immediately evident, that this is both a common
practice with non-diagnostic symptom lists and also
represents a pragmatic statistical normative pro-
cedure rather than case finding in the classic sense.
Caseness, in this context, is an operational construct
based on findings from a number of independent
measures which have established convergent validity
for the assignment of 'at risk for caseness' status,
rather than on clinically derived inclusion–exclusion
criteria.

Table 2 presents the results of the HOS for the
farmworker sample for all those scoring between 1
and 2 SD's. This table also provides an estimate of
risk for caseness by age and sex, and also permits
some judgements regarding the magnitude of risk,
since it can be logically inferred that those people
scoring at the highest symptom range (over 2 SD's)
are at greatest risk. It should be noted that the

Table 2. % 1 or more SD's high on HOS: farmworkers survey

	n	% More than 1 SD above mean	% 2 SD's or more above mean
Males	281	14.6	5.3
Females	219	14.6	4.6
Males			
Under 20	31	19.4	6.5
20–29	97	17.5	4.1
30–39	63	11.1	4.8
40–49	45	15.6	6.7
50–59	25	16.0	4.0
60+	15	13.3	6.7
Females			
Under 20	11	9.1	0.0
20–29	77	19.5	3.9
30–39	56	12.5	1.8
40–49	47	14.9	4.3
50–59	20	15.0	10.0
60+	7	14.3	0.0

normal range on this survey is from 20 to 34, 1–2 SD's ranged from 35 to 40 and over 2 SD's was 41 or more. The range of the HOS is from 20 to 60. Slightly less than 20% of the total sample are possible cases. However, the lack of gender differentiation persists, with about 19.2% of the females and about 19.9% of the males falling into the highest risk range. For males, those between 18 and 20 years have the highest risk for caseness rate (25.9%). Among females, those between 50 and 59 have the highest rate (25.0%) and also have the highest rates over 2 SD's (10.0%) and could, therefore, be considered to be at greatest risk. However, small sub-sample sizes require caution in the interpretation of this data.

The well established positive association between environmental stressors and psychiatric symptoms is widely noted in the mental health literature and concisely illustrated in Exhibit A. Although the HOS is not a proxy measure for stressful life events and related risk factors, we believe that a strong association exists between the relatively high group mean on the HOS and the inordinately severe life style experienced by farmworkers. Some evidence of the association between psychiatric symptoms and extra-psychic processes is available from this study. A question was asked concerning the occurrance of stressful life events within the previous 12 months, including the death of family members of friends, accidents, job loss, etc. Of those who failed to report such events, 9.4% scored 1 SD or higher on the HOS, while of those who did report such events, 27.8% scored in this range. The data are suggestive of higher frequencies of environmental stressors, including hazardous working conditions, than would be expected within a population with greater social integration, material resources and residential stability.

Table 3 compares the HOS mean scores by gender for the present research with corresponding scores from several other cross-sectional surveys, including the Santa Clara, California, epidemiological survey in which both Anglos and Mexican Americans were respondents. Given the special interest of this re-search, the Santa Clara scores are presented separately by language preference for Mexican Americans. The Spanish speaking respondents are primarily immigrants and low socio-economic status whereas the English speaking respondents are mostly native born and substantially better educated. As is readily noted, the mean scores of the farmworkers in this research are similar to the scores of the Spanish language respondents found in the Santa Clara survey. Overall, the Anglos of both genders in the Santa Clara survey are affluent and have lower mean scores, falling within the 'no risk' range on Exhibit A. Surprisingly, the mean scores of the English speaking Mexican American respondents in Santa Clara are similar to the Anglo scores, with the male scores being among the lowest reported from any of these national surveys. This suggests the importance of acculturation and related factors such as income and education in producing variations in symptoms scores.

The other samples identified in Table 3 are drawn from epidemiological surveys conducted in the Southeast and Midwest of the United States with Black and Anglo samples of differing socio-economic levels and regional settings. The Florida Health Survey includes a broad cross-section of urban and rural Anglo and non-white populations, resembling the social class structure of the United States. The study covers seven counties with long term residents who are Black and low income. The Winterhaven study covers three counties in South Central Florida where industrial and agricultural zones are interspersed with new and affluent residential living areas. The population tends toward bi-modality, with low income Anglo and non-white agricultural and industrial workers on the one hand, and affluent Anglo retirees on the other. The Lake Sumpter research, covering two counties in East Central Florida, is also characterized by two discrete socio-economic groups. First the agricultural and industrial workers, including a substantial population of low income Blacks, and the more affluent Anglo population which includes many retirees. The Tampa study, conducted in South Cen-

Table 3. Comparison of HOS mean scores for farmworkers with eight major epidemiologic surveys

Sample	Male	Female
Farmworkers (n = 501)	27.77	28.42
Santa Clara (n = 1188)		
Anglos	25.15	26.35
Mexican American/Spanish speaking	27.95	29.22
Mexican American/English speaking	24.78	27.04
Florida health survey (n = 1645)		
Anglos	26.2	27.7
Blacks	28.7	29.1
Winterhaven hospital study (n = 2082)		
Anglos	26.1	27.2
Blacks	26.6	27.3
Lake Sumpter (n = 528)		
Anglos	25.9	27.0
Blacks	30.0	28.4
Tampa (n = 301)		
Anglos	26.1	27.6
Blacks	27.9	29.5
Louisville (n = 1078)		
Anglos	26.2	28.2
Blacks	26.8	28.3
Cincinnati (n = 1072)		
Anglos	26.9	27.5
N.W. Ohio (n = 1728)		
Anglos	25.6	26.5

rida. included urban low income Blacks and
r population of Cubans who constitute a
group in a transitional area.

ville is a standard metropolitan area of ap-
)0,000 residents with a social class structure
of Mid-Western industrial cities, including
liddle and high income Blacks and Anglos.
ncinnati study actually covers five counties .
that city in South West Ohio. The area
l towns with populations between 30,000 and
The sample encompasses a cross-section of
ural, industrial and white collar occupational
Finally, the North West Ohio study is pri-
concerned with relatively high income farm
and operators. There is a striking similarity in
:ores between this sample of affluent Anglos
: Santa Clara Anglo sample which was also
. On the other hand, poor Blacks and Anglos
ida have HOS scores resembling both the
l language respondents in Santa Clara and the
irkers reported on in this paper. Overall,
analysis of the respective samples indicates
:an scores are highest where respondents are
· marginal, irrespective of whether they are
ir rural. Among these various studies, race and
y are less reliable indicators of high mean
on the HOS than low socio-economic status.
ase of Mexican Americans, acculturation level
iportant marker variable since it is also highly
ted with socio-economic status.

DISCUSSION

population surveyed in this research is a
:ly homogeneous group, with a medium in-
vell below the current United States standard
,000, poorly educated, rural and marginally
irated. The fact of the pervasive similarity of
iup on key demographic variables tends to
iute to the lack of striking differences when
sting mean HOS scores for simultaneously
lled variables. Most surveys reporting data
similar symptom checklists have found that
t usually have higher symptom counts than
!2–25]. This difference was also noted in this
:h. As a group, women did have higher scores
ien.

l regard to the distribution of scores by age,
neral pattern reported in the literature is a
al distribution, with young adults followed by
lerly (60+) reporting the highest symptoms
]. A distinct bi-modality was noted in the
t research. Using the HOS risk for caseness
in, young adult males were at high risk as were
nales and females between 40 and 59 years of
he Santa Clara research team previously cited
ed high symptom levels among young adult
an American males. The pronounced tendency
ddle aged Mexican Americans to have higher
om levels was reported by Frerichs et al. in
.os Angeles survey using the CES-D, as well as
Santa Clara research group, but his patterning
it nearly as marked among Anglo respondents
ie studies. Why middle age should be a partic-
high risk period for Mexican Americans is not
liately apparent. However, in the case of the

farmworker population, it is well enough established
that significant occupational and life hazards exist to
degrade the health and functional capacities of a
population with few available resources for health
maintenance or preventive care. The low income
status of the sample tends to homogenize the symp-
tom levels since it is commonly reported that an
inverse relationship exists between psychological dis-
tress and income and education [29–30].

While the association between income and psycho-
logical distress is well known. the relationship be-
tween acculturation, coping resources and symptom
levels is complex and not easily understood nor
explained by this type of research. For immigrants,
migrants and rural isolated minority poor, socio-
economic factors intertwine to create acculturation
related stressors. In rural areas, such as the one
described in this paper, a social heirarchy exists with
limited prospects for social mobility among Mexican
American farmworkers. The life style is very harsh
and the occupation is socially marginal. Many in-
vestigators have commented on the systematic stress-
ors that create conflicts and contribute to psycho-
logical instability under such conditions [31]. The
social psychological constructs of Fabrega [32] are
perhaps the most useful framework for under-
standing the role of acculturation related stressors in
the generation of psychological distress, and are most
pertinent to the study at hand.

SELF PERCEPTION OF HEALTH AND PSYCHIATRIC . SYMPTOMATOLOGY

The association between health and mental status
is symbiotic, and often difficult to disentangle concep-
tually or in treatment settings. In the clinical litera-
ture, the working class Mexican American popu-
lation is especially noted for the tendency toward
somatization [33]. This survey provides a rare oppor-
tunity to document this phenomenon within a non-
patient population of rural Mexican American
agricultural workers. Table 4 presents the results of
a self rating of physical health which has been cross
tabulated with HOS mean scores for respondents.
The data underscore the relationship between per-
ceived health and symptom levels on the HOS. Those
respondents describing their health as 'fair', 'poor' or
'very poor' have consistently higher mean scores than
those who describe their health as 'excellent' or
'good'. Using Exhibit A for comparison, it is
observed that respondents who report 'excellent' or
'good' on this question have HOS mean scores in the

Table 4. HOS mean scores by sex and health self-assessment

	n	Mean	SD
Males			
Excellent	25	26.520	5.363
Good	128	26.813	4.710
Fair	108	28.009	6.313
Poor	10	34.500	6.258
Very poor	4	40.500	5.196
Females			
Excellent	26	25.808	5.107
Good	98	24.000	6.138
Fair	70	28.971	6.382
Poor	18	35.444	7.540
Very poor	7	34.714	5.559

Exhibit A. Scale score means for general population risk groups and psychiatric in-patients: the Health Opinion Survey*

	HOS mean
No risk factors	25.0
1-2 Risk factors	27.4
3-4 Risk factors	32.8
5-8 Risk factors	37.2
Psychotic patients	35.2
Neurotic patients	40.2
Other patients	36.5

*All scale score means reported in this table are significant at $P < 0.05$ or greater.
A complete summary of methods used to develop Exhibit A can be found in: Kuldau J., Warheit G. and Holzer C. Health Opinion Survey valid for needs assessment. Unpublished manuscript, Department of Psychiatry, University of Florida, 1978.

normal range, and those with 'poor' and 'very poor' responses are between four and five risk factors.

Since the HOS is a measure of psychophysiological distress, it is not surprising than an association between somatic and psychological status is detected. In addition, the HOS has a significant item overlap with common depression and anxiety measures, which may mirror the affective component of an illness syndrome. For treatment setting, this suggests the importance of recognizing such symptoms even when the presenting complaint concerns a fairly unambiguous physical ailment. On the other hand, it also tends to confirm what many primary care physicians already sense, that somatic complaints are common among Mexican Americans and that physicians are treating many people with psychiatric dimensions to their presenting problem. These findings emphasize the logic and efficacy of designing well articulated referral networks and integrated treatment settings for psychiatric care within this population. The fact that this population reports negligible use of mental health providers accentuates the importance of this finding.

CONCLUSION

This paper presents the first epidemiological findings concerning levels of psycho-physiological distress among Mexican American Farmworkers in California. A sample of 501 respondents were administered the HOS and approx. 20% were found to be in the HOS risk for caseness range. This figure is very similar to the reported levels of diagnosible disorder found in a previous study of urban Mexican Americans by Vernon and Roberts, but considerably more conservative than estimates of risk for caseness derived from depression studies using the CES-D (a non-specific depression check list). These results are partially attributable to the absence of middle income respondents in the survey which resulted in both a higher group mean but fewer asymptomatic respondents than would be expected in a more normally distributed population. Still, comparison of scores with national cross-sectional surveys using the HOS reveals that Mexican American farmworkers are at much higher risk than general population groups, including better educated urban Mexican

Americans, and tend to resemble other low socio-economic subgroups in levels of symptomatology. The highest mean scores were found among very young adult males and among the middle aged respondents of both sexes. This vulnerability of middle aged Mexican Americans to psychological distress is not found among other ethnic groups in the United States and constitutes a fruitful area of future research.

Other comparisons revealed a consistent relationship between stressful life events, physical health status, and symptom frequencies. Using clinical validation criteria of risk, respondents perceiving their health in positive terms scored in the no risk factor range. On the other hand, those with moderate or pronounced negative health perceptions were more likely to score in the symptom range indicative of substantial risk and patient status. These findings have important implications for human services providers given the known tendency toward somatization among Mexican Americans, and the almost exclusive avoidance of mental health providers by this same population.

Comparison of study findings with other research including Mexican American subsamples indicates the complex relationships between acculturation related stressors, social structure and symptomatology. Unfortunately, the resolution of these issues are beyond the scope of this research. However, the evidence at hand would support the notion that acculturation, and related socio-economic stressors are operating to produce greater risk of psychiatric distress among the rural isolated and marginally integrated farmworker population.

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APPENDIX

MacMillan (HOS)

1. Do you have any physical or health problems at present?
2. Do your hands ever tremble enough to bother you?
3. Are you ever troubled by your hands or feet sweating so that they feel damp of clammy?
4. Have you ever been bothered by your heart beating hard?
5. Do you tend to feel tired in the mornings?
6. Do you have any trouble getting to sleep and staying asleep?
7. How often are you bothered by having an upset stomach?
8. Are you ever bothered by nightmares (dreams which frighten you)?
9. Have you ever been troubled by 'cold sweats'?
10. Do you feel that you are bothered by all sorts (different kinds) of ailments in different parts of your body?
11. Do you smoke? (A lot, some, not at all)
12. Do you ever have loss of appetite?
13. Has any ill health affected the amount of work (housework) you do?
14. Do you ever feel weak all over?
15. Do you ever have spells of dizziness?
16. Do you tend to lose weight when you worry?
17. Have you ever been bothered by shortness of breath when you were not exerting yourself?
18. For the most part, do you feel healthy enough to carry out the things that you would like to do?
19. Do you feel in good spirits?
20. Do you sometimes wonder if anything is worthwhile anymore?