Lifetime Prevalence of and Risk Factors for Psychiatric Disorders Among Mexican Migrant Farmworkers in California

ABSTRACT

Objectives. In this study, the prevalence of and risk factors for 12 psychiatric disorders were examined by sex and ethnicity (Indian vs non-Indian) among Mexican migrant farmworkers working in Fresno County, California.

Methods. Subjects aged 18 through 59 years were selected under a cluster sampling design (n = 1001). A modified version of the Composite International Diagnostic Interview was used for case ascertainment. The effects of sociodemographic and acculturation factors on lifetime psychiatric disorders were tested.

Results. Lifetime rates of any psychiatric disorder were as follows: men, 26.7% (SE = 1.9); women, 16.8% (SE = 1.7); Indians, 26.0% (SE = 4.5); non-Indians, 20.1% (SE = 1.3). Total lifetime rates were as follows: affective disorders, 5.7%; anxiety disorders, 12.5%; any substance abuse or dependence, 8.7%; antisocial personality, 0.2%. Lifetime prevalence of any psychiatric disorder was lower for migrants than for Mexican Americans and for the US population as a whole. High acculturation and primary US residence increased the likelihood of lifetime psychiatric disorders.

Conclusions. The results underscore the risk posed by cultural adjustment problems, the potential for progressive deterioration of this population's mental health, and the need for culturally appropriate mental health services. (*Am J Public Health.* 2000;90:608–614)

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Migrant farmworkers constitute almost half (42%) of the population employed in seasonal agricultural work in the United States.[1,2] The majority of farmworkers (70%) are foreign born, and of those, 90% are Mexican. In California, about half of the estimated 1 million farmworkers are migrants, and as many as 98% are Mexican.[2] From Texas, Florida, and California, farmworkers follow well-established migration routes through the eastern, central, and western agricultural states. According to the National Agricultural Workers Survey,[3] the farmworker population in the United States is predominantly (80%) male and young (two thirds are younger than 35 years). However, most farmworkers are married and have children. They are also poor, with a median personal income between US $2500 and US $5000, but despite these meager earnings few use publicly assisted social services.

In recent years, an increasingly diverse farm labor pool has come to California from Latin America and Asia.[4] Among these are indigenous people such as the Hmong from Southeast Asia, the Mixtec and Zapotec from Mexico, and the Maya from Guatemala. Here we report our findings about the mental health status of migrant workers from Mexico, both Indian and non-Indian, working in California agriculture. This is the first study to provide prevalence rates of 12 major lifetime psychiatric diagnoses as defined in the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised* (*DSM-III-R*),[5] for US migrant farmworkers by sex and ethnic group.

The Mental Health of Migrant Farmworkers in the United States

Few studies have been conducted on the mental health of migrant farmworkers in the United States. Vega et al.[6] used the Health Opinion Survey[7] to assess the mental health status of farmworkers in Fresno County, California. The rate of "caseness," defined as a presumptive need for treatment, was 20%. Studies have also been conducted in New York State, where an estimated 30 000 to 40 000 farmworkers are seasonally employed. Chi surveyed 218 Black migrant farmworkers, using the index of general well-being, and found that subjective well-being was associated with lifestyle, social support, housing conditions, age, sex, and education.[8] Also in New York State, White-Means found a significant positive association between mental health and weekly wages.[9]

Three studies have presented data on substance use among migrant farmworkers in the eastern United States. Watson et al. interviewed African American and Haitian workers in labor camps in New York State. Approximately one fourth of these workers consumed alcohol frequently and in large quantities; about 22% reported consuming 5 or more

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drinks at a single sitting. Social isolation was considered the main risk factor related to alcohol consumption.[10] In another multiethnic study conducted in New York State, binge drinking (drinking more than a six-pack at one sitting) was reported by 25% of the workers.[11] Those who were married and who had family members present in the camp were less likely to be regular drinkers. Lafferty et al. reported that 2.6% of a sample of 378 Hispanic farmworkers self-injected recreational drugs.[12]

The Mental Health of Migrant Workers in Europe

Another pertinent set of literature consists of research on the mental health of migrant or "guest workers" in Europe. Friessem found Turks in Germany to be more affected than the local population by neurosis, personality disorders, psychosomatic disturbances, and abnormal reactions.[13] Increased depressive symptomatology has been reported in the Netherlands among Yugoslav[14] and Moroccan workers.[15] Simoes and Binder found that migrant Portuguese workers did not differ significantly in their mental health status from the local Swiss population. Furthermore, such workers fared better in terms of mental health status than the general population of Portugal.[16] Migrant laborers in Western Europe also had lower rates of mental illness than did the general population.[17]

The epidemiologic evidence points to the complexity and multiplicity of factors that affect migrant workers' living conditions and social environment.[6,18,19] Migrant farm laborers endure difficult working conditions, low pay, and precarious living situations. On the other hand, psychiatric morbidity rates in their countries of origin may be lower than the prevalence rates in the host society. Thus, it is possible that migrant farmworkers do have better mental health status than the general population, owing to the presence of protective factors inherent in the sending society and its culture.

Methods

Research Site

The research site, Fresno County, has an area of approximately 6000 square miles. Despite the fact that it contains the cities of Fresno and contiguous Clovis, it is primarily a low-density agricultural region with scattered hamlets, small towns, and expanses of unincorporated land devoted to agricultural production. According to a 1996 estimate, the population of the county is 748 686, with 463 600 living in the Fresno–Clovis metropolitan area. Hispanics, almost all of whom are of Mexican origin, constitute 38.3% (286 747) of the total county population.[20] Thirty percent of Mexican-origin families living in Fresno are considered to be living in poverty, and much higher levels of poverty are found among farmworkers.

Sampling

The Mexican American Prevalence and Services Survey (MAPSS) included resident and migrant samples of the Mexican-origin population in Fresno County, Calif. Methods of sampling residents have been described in detail elsewhere.[21] The 3012 resident participants were selected under a fully probabilistic, stratified, multistage cluster sampling design. The 200 primary sampling units in each stratum were census blocks or block aggregates selected with a probability proportionate to the size of their Hispanic population. In the second sampling stage, a quota of 5 households were randomly selected in each primary sampling unit. In the final stage, one person per household was randomly selected. Enumerators generated a full numbered list of eligible persons in order of age within each household. Random digits attached to the enumeration form dictated which person on the list would become the study subject. The refusal and nonresponse rate for the resident sample was 10%.

The migrant sampling strategy was designed to maximize representativeness. The high mobility and seasonal migration of farmworkers make it impossible to accurately estimate the size of the entire population or to draw a true probability sample. To a large extent, farmworkers do not dwell in conventional housing during their stay in the county. Living arrangements include farm labor camps, trailers, and outbuildings. Inasmuch as no list of migrant workers exists, an area cluster sampling procedure was devised to ensure geographic representation.

The county was divided into map grids that formed the clusters or primary sampling units. Within the selected grids, locations occupied by migrants were exhaustively enumerated. Individuals aged 18 to 59 years were systematically sampled from these grids, in proportion to the estimated subpopulation of migrants in that cluster. When immediate relatives were found in a housing unit, only 1 was randomly selected. Since the survey instrument was available only in English and Spanish, our sample did not include the less acculturated Indians who spoke only their native language. The refusal and noncompletion rate was 4.7%. A total of 500 men and 501 women were interviewed. The data were collected in 1996.

Instrumentation

In this study, psychiatric diagnoses were based on a modified version of the Composite International Diagnostic Interview (CIDI).[22] The CIDI is a fully structured clinical interview developed jointly by the World Health Organization (WHO) and the former US Alcohol, Drug Abuse, and Mental Health Administration as the instrument of choice for large-scale international psychiatric epidemiologic research. The CIDI has undergone comprehensive field trials with both clinical[23] and general population samples, including clinical reappraisal using the Structural Clinical Interview for DSM-III-R (SCID) semistructured interviews. Positive predictive values between the CIDI and the SCID were 0.60, based on a sample of clinical respondents, and 0.65, based on the National Comorbidity Survey results.[24,25]

While it is certainly true that all diagnostic field instruments have important limitations, the results of these methodological studies show good performance for the University of Michigan (UM) CIDI, the instrument used in the National Cormorbidity Study, which was used as the template for caseness criteria in the Fresno survey. The primary difference between the UM-CIDI and other CIDI versions is that the UM-CIDI uses techniques to increase the likelihood that respondents understand the intent of the key questions about age at onset and to vastly improve respondents' ability to provide accurate information about distant and possibly painful life events. For example, key screening questions for disorders are placed at the beginning of the interview to avoid respondents' "learning the instrument" or having memory problems owing to mental fatigue. We believe these key differences in memory "prompts" found in the UM-CIDI are especially useful for low-income respondents such as those found in the Fresno survey.[26]

The questionnaire is available in English and Spanish and was specifically adapted for use with respondents of Mexican origin. It incorporates culturally and linguistically sensitive elements and includes probes for respondent's idiomatic expressions of psychological distress. Translation into Spanish was accomplished by the translation and back-translation method. A panel of bilingual experts conducted an item-by-item review of the translation, paying special attention to cultural and linguistic adaptations appropriate for use with Mexican-origin populations. A computer-assisted per-

TABLE 1—Demographic and Acculturation Characteristics (%), by Ethnicity and Sex: Migrant Farmworkers From Mexico in Fresno County, California, 1996

	Non-Indians			Indians			Total		
	Men (n = 426)	Women (n = 468)	Total (n = 894)	Men (n = 74)	Women (n = 33)	Total (n = 107)	Men (n = 500)	Women (n = 501)	Total (n = 1001)
Age, y									
18–25	34.0	29.9	31.9	36.5	31.3	34.6	34.4	29.9	32.2
26–39	44.0	45.6	44.9	44.6	56.3	45.8	44.0	45.7	44.9
40–59	22.0	24.5	23.3	18.9	12.5	19.6	21.6	24.4	23.0
Marital status									
Not married	31.5	14.9	22.8	29.7	21.2	25.2	31.2	15.4	23.3[b]
Married	61.3	75.1	68.4	56.8	75.8	63.6	60.8	75.0	67.9
Widowed/divorced	7.3	10.0	8.7	13.5	3.0	11.2	8.0	9.6	8.8
Income									
≤$9000	69.7	56.5	62.8	87.8	72.7	83.2[a]	72.0	57.3	64.7[b]
>$9000	30.3	43.5	37.2	12.2	27.3	16.8	28.0	42.7	35.3
Education, y									
0–6	66.9	56.3	61.4	63.5	65.6	64.5	61.3	57.0	60.3[b]
>6	33.1	43.7	38.6	36.5	34.4	35.5	38.7	43.0	39.7
Country of residence									
Mexico	59.4	31.8	45.5	53.4	30.0	47.6	58.7	32.2	45.9[b]
United States	40.6	68.2	54.5	46.6	60.0	52.4	41.3	67.8	54.1
Acculturation									
Low	73.2	71.8	72.5	48.6	42.4	46.2[a]	69.2	70.1	69.6
Medium	25.6	22.6	24.0	25.7	30.3	25.5	25.6	22.8	24.2
High	1.2	5.6	3.5	25.7	27.3	28.3	5.2	7.2	6.2

[a]Chi-square test comparing male vs female, $P<.05$.
[b]Chi-square test comparing non-Indian vs Indian, $P<.05$.

sonal interview version was developed for instrument administration. The average face-to-face administration time for this version was 86 minutes for respondents without extensive psychiatric histories. Respondents who met case criteria for multiple psychiatric disorders took 2 hours or longer to complete the interview.

The modified CIDI used in this study provides lifetime, 12-month, 6-month, and 1-month prevalence estimates for 14 specific *DSM-III-R* diagnoses: mood disorders (major depressive episode, manic episode, dysthymia); anxiety disorders (panic disorder, agoraphobia, social phobia, simple phobia); substance use disorders (alcohol abuse, alcohol dependence, drug abuse, drug dependence); nonaffective psychosis; somatization disorder; and antisocial personality disorder. Rates of nonaffective psychosis and somatization disorder are not reported here. Diagnoses from the modified CIDI are generated by algorithms based on the diagnostic criteria of *DSM-III-R* and the *International Classification of Diseases, 10th Revision,* and the WHO–CIDI's version 1.1 format.[27]

The questionnaire includes questions on sociodemographics, employment, migration history, gender roles and family dynamics, instrumental and emotional social support, acculturation and acculturation stress, self-rated physical and mental health status, and physical health problems. Indian respondents were identified by asking whether they themselves, their parents, or their grandparents could speak a native language (e.g., Mixtec, Zapotec, Nahuatl).

The 7-item acculturation measure was adapted from the scale by Cuellar et al.[28] and had been validated and used with Latinos in a previous study.[29] Acculturation is characterized as a transition from patterns of behaviors of the culture of origin to those of the host cultural environment.[30–32] Self-identification, country of birth and generational status, ethnicity of acquaintances, and specific ethnic practices are other elements usually included in acculturation scales.[28] However, for Mexican Americans, language use in diverse social contexts explains most of the variance in these scales.[33,34] The unidimensional 7-item scale used in this survey measures use of Spanish or a native language vs English in different social contexts (e.g., work, home, with friends). Each item has a range of 5 responses that indicate, in a Likert format, a preference for using Spanish or a native language vs English. Therefore, a grand mean score of 1 indicates minimal acculturation and a score of 5 indicates very high acculturation. Acculturation categories were defined by the distribution of the data as low (1.000–1.001), medium (1.002–1.430), and high (1.431–5.000). The Cronbach α was 0.83.

Data Analysis

SAS version 6.11 (SAS Institute, Inc, Cary, NC) was used for data analysis. The distribution of demographic and acculturation variables, as well as the prevalence of *DSM-III-R* lifetime mood, anxiety, and antisocial personality disorders and substance abuse/dependence, was calculated across ethnic groups and sexes. Chi-square tests were also calculated. Prevalence rates and standard errors were adjusted to the age–sex distribution of the total migrant sample. The 5-year intervals employed by the US Census Bureau were used for age adjustment. Logistic regression models were used to test the adjusted effects of demographic and acculturation variables on outcomes of interest. The diagnostic categories were (1) lifetime affective disorders, (2) anxiety disorders, (3) alcohol abuse or dependence, and (4) drug abuse or dependence. Sex, age, ethnicity (Indian vs non-Indian), marital status, income, education, main country of residence (Mexico or the United States), and acculturation were included as categorical covariates.

Prevalence rates in the migrant sample were compared with those in the MAPSS resident sample and with those in 2 large field surveys that used the CIDI for ascertainment of *DSM-III-R* disorders: the National Comorbidity Survey, which represents US national rates, and a field survey conducted in Mexico City by researchers from the Mexican Insti-

TABLE 2—Lifetime Prevalence of Psychiatric Disorders, by Ethnicity and Sex: Migrant Farmworkers From Mexico in Fresno County, California, 1996

	Non-Indians			Indians			Total		
	Men (n = 426)	Women (n = 468)	Total (n = 894)	Men (n = 74)	Women (n = 33)	Total (n = 107)	Men (n = 500)	Women (n = 501)	Total (n = 1001)
Major depressive episode	0.2 (0.7)	4.9 (0.9)	3.6 (0.6)	0.4 (0.2)	0.8 (4.9)	6.2 (2.6)	3.3 (1.4)	5.1 (1.0)	3.8 (0.6)
Manic episode	0.5 (0.3)	0.2 (0.2)	0.3 (0.2)	1.5 (1.5)	0.0 ...	1.3 (1.3)	0.8 (0.7)	0.2 (0.2)	0.4 (0.2)
Dysthymia	1.7 (0.6)	2.1 (0.7)	1.9 (0.5)	3.5 (2.6)	0.0 ...	2.1 (1.6)	3.1 (1.4)	2.0 (0.6)	1.9 (0.4)
Any mood disorder	4.3 (1.0)	6.6 (1.1)	5.5 (0.8)	7.4 (3.4)	8.4 (4.9)	8.3 (3.0)	7.2 (2.0)	6.7 (1.1)	5.7 (0.7)
Panic disorder	1.2 (0.5)	0.8 (0.4)	1.0 (0.3)	0.0 ...	0.0 ...	0.0 ...	0.3 (0.1)	0.8 (0.4)	0.9 (0.3)
Agoraphobia without panic disorder	4.0 (1.0)	7.5 (1.2)	5.8 (0.8)	7.7 (3.0)	0.0 ...	5.3 (2.2)	5.9 (1.8)	6.9 (1.1)	5.8 (0.7)
Social phobia	5.9 (1.1)	5.5 (1.1)	5.7 (0.8)	6.7 (3.1)	4.9 (3.6)	5.7 (2.2)	8.2 (2.1)	5.6 (1.0)	5.8 (0.7)
Simple phobia	6.0 (1.2)	6.4 (1.1)	6.2 (0.8)	6.2 (2.7)	6.3 (4.4)	6.2 (2.3)	8.2 (2.1)	6.4 (1.1)	6.2 (0.7)
Any anxiety disorder	11.4 (1.6)	13.0 (1.6)	12.3 (1.1)	16.1 (4.4)	11.1 (5.6)	14.0 (3.4)	15.1 (2.7)	12.9 (1.5)	12.5 (1.1)
Alcohol abuse	1.8 (0.6)	0.4 (0.3)	1.1 (0.3)	0.0 ...	0.0 ...	0.0 ...	0.5 (1.2)	0.4 (0.3)	1.0 (0.3)
Alcohol dependence	12.2 (1.6)	0.9 (0.4)	6.2 (0.8)	12.9 (4.2)	1.7 (1.7)	9.9 (3.2)	8.9 (2.0)	1.0 (0.5)	6.6 (0.8)
Drug abuse	0.7 (0.4)	0.2 (0.2)	0.4 (0.2)	1.0 (1.0)	0.0 ...	0.6 (0.6)	0.9 (0.7)	0.2 (0.2)	0.5 (0.2)
Drug dependence	2.6 (0.8)	0.6 (0.3)	1.6 (0.4)	4.9 (2.5)	0.0 ...	3.9 (2.0)	3.0 (0.8)	0.6 (0.3)	3.0 (0.6)
Any substance abuse/ dependence	15.4 (1.7)	1.9 (0.6)	8.3 (0.9)	15.3 (4.4)	1.7 (1.7)	11.9 (3.4)	11.8 (2.2)	2.0 (0.6)	8.7 (0.9)
Antisocial personality disorder	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)	0.0 ...	0.0 ...	0.0 ...	0.1 (0.1)	0.2 (0.2)	0.2 (0.1)
Any disorder	24.1 (2.1)	16.5 (1.7)	20.1 (1.3)	30.4 (5.6)	14.6 (6.4)	26.0 (4.5)	26.7 (3.3)	16.8 (1.7)	20.6 (1.3)

Note. Numbers in table represent the percentage of the sample who had ever been diagnosed with the disorder. Standard errors are shown in parentheses.

tute of Psychiatry. In the MAPSS sample, length of time in the United States was examined by means of a trichotomous variable: less than 13 years' residence (the median) in the United States, 13 or more years' residence in the United States, and birth in the United States. Because these 3 studies examined different age ranges, for comparison purposes the age range was restricted to 18 through 54 years. Further, because the age distributions differ among the 4 studies, survey data were adjusted to the age–sex distribution of the National Comorbidity Survey.[21]

Results

Comparative Demographic Characteristics

In our sample of migrant workers, women were more likely than men to be married and to be US residents. More women than men reported having an annual family income of more than US $9000 and having more than 6 years of education (Table 1).

Indian respondents constituted 11% of the sample. Indians in the sample were younger than non-Indians, and more Indians than non-Indians reported having an annual family income of less than US $9000. The mean annual family income for Indians (US $7821) fell below the 1996 federal poverty level of US $7740 for a 1-person household, and 83% of Indian respondents had annual family incomes below the poverty level for a 2-person household (US $10360) (Table 1). On the other hand, the mean income for non-Indians (US $11529) was above these poverty levels. The acculturation scale distribution was skewed, with a mean of 1.4. Acculturation levels did not differ significantly between men and women. However, the majority (54%) of Indians had a medium to high preference for English over Spanish or their native language, compared with only 28% of the non-Indian respondents.

Prevalence of DSM-III-R Psychiatric Disorders

In this sample, the lifetime rate of any psychiatric disorder was lower for women (16.3%) than for men (27.6%). Rates of alcohol dependence were 9 times higher among men than among women, and rates of drug dependence were 5 times higher (Table 2). Migrant men and women had similar rates of mood disorders (men = 7.2%; women = 6.7%) and anxiety disorders (men = 15.1%, women = 12.9%). The most prevalent disorder among women was agoraphobia (6.9%); the most prevalent disorder among men was alcohol dependence (8.9%). The lifetime prevalence of any psychiatric disorder differed significantly

TABLE 3—Adjusted Odds Ratio (From Logistic Regression) for Lifetime Psychiatric Disorders, by Demographic and Acculturation Characteristics: Migrant Farmworkers From Mexico in Fresno County, California, 1996

	Adjusted OR (95% CI)			
	Mood Disorders	Anxiety Disorders	Alcohol Abuse or Dependence	Drug Abuse or Dependence
Sex (reference: male)				
Female	1.27 (0.68, 2.37)	1.35 (0.89, 2.07)	0.10 (0.04, 0.22)	0.34 (0.10, 1.08)
Age, y (reference: 18–25)				
26–39	1.33 (0.65, 2.72)	0.78 (0.46, 1.32)	3.48 (1.51, 7.98)	2.15 (0.60, 7.71)
40–59	1.81 (0.73, 4.47)	0.96 (0.49, 1.87)	7.94 (2.91, 21.65)	2.38 (0.38, 14.97)
Marital status (reference: never married)				
Married	0.77 (0.36, 1.66)	0.69 (0.40, 1.20)	0.56 (0.26, 1.22)	1.42 (0.39, 5.19)
Widowed/divorced	2.04 (0.77, 5.37)	1.57 (0.75, 3.28)	0.58 (0.17, 1.93)	3.99 (1.00, 15.88)
Income (reference: ≤$9000)				
>$9,000	1.17 (0.63, 2.20)	0.65 (0.40, 1.04)	1.07 (0.59, 1.95)	0.87 (0.26, 2.87)
Education, y (reference 0–6)				
>6	1.43 (0.75, 2.74)	1.27 (0.81, 1.97)	1.86 (1.04, 3.33)	3.50 (1.06, 11.50)
Main country of residence (reference: United States)				
Mexico	0.95 (0.51, 1.78)	0.80 (0.51, 1.25)	0.40 (0.22, 0.73)	0.28 (0.08, 0.96)
Ethnicity (reference: non-Indian)				
Indian	1.10 (0.42, 2.85)	1.07 (0.55, 2.08)	0.79 (0.32, 1.98)	0.82 (0.16, 4.11)
Acculturation (reference: low)				
Medium	1.02 (0.49, 2.10)	1.10 (0.68, 1.78)	1.39 (0.74, 2.62)	2.79 (0.82, 9.42)
High	3.72 (1.26, 11.02)	1.41 (0.58, 3.44)	2.64 (0.70, 9.96	10.00 (1.40, 1.06)

Note. OR = odds ratio; CI = confidence interval.

between Indians and non-Indians. Among non-Indians, the most prevalent disorders were simple phobia (6.2%) and alcohol dependence (6.2%); the most prevalent disorder among Indians was alcohol dependence (9.9%).

Risk for Psychiatric Outcomes

In logistic regression models, the risk of lifetime mood or anxiety disorders was similar for male and female migrant workers (Table 3). Women had a significantly lower risk for lifetime alcohol abuse or dependence than did men (adjusted odds ratio [OR] = 0.10; 95% confidence interval [CI] = 0.04, 0.22). The point estimate of women's risk of drug abuse or dependence was low (adjusted OR = 0.32), but it did not reach statistical significance. The likelihood of lifetime alcohol abuse or dependence was higher among those aged 26 to 39 years (adjusted OR = 3.50; 95% CI = 1.54, 7.96) and those aged 40 to 59 years (adjusted OR = 7.93; 95% CI = 2.93, 21.41) than among younger migrant workers. No significant effects were found for marital status or income.

Respondents with more than 6 years of education had a higher risk of alcohol abuse or dependence (adjusted OR = 1.89; 95% CI = 1.05, 3.40) and drugs (adjusted OR = 3.83; 95% CI = 1.16, 12.60) than did respondents with fewer years of education. Acculturation increased the likelihood of mood disorders (adjusted OR = 3.80; 95% CI = 1.28, 11.27) and of drug abuse or dependence (adjusted OR = 10.94; 95% CI = 1.56, 76.57). On the other hand, in comparison with those whose main country of residence was the United States, respondents who were primarily residents of Mexico had less than half the risk of alcohol (adjusted OR = 0.40; 95% CI = 0.22, 0.73) or drug (adjusted OR = 0.27; 95% CI = 0.08, 0.93) abuse or dependence.

Table 4 shows lifetime prevalence rates for psychiatric disorders among Mexican migrant farmworkers in the Fresno County sample and among respondents in local, national, and international samples. The lifetime prevalence rate among Fresno County migrants (21.1%) was similar to that of recent immigrant residents in the county (18.4%) and

TABLE 4—Lifetime Prevalence of Psychiatric Disorders Among Migrant Workers and Residents in the Mexican American Prevalence and Services Survey, Among Residents of Mexico City, and Among Respondents to the National Comorbidity Survey

	Mexican American Prevalence and Services Survey Respondents, % (SE)					National Comorbidity Survey Respondents, % (SE)	
	Migrant Workers	Immigrants, <13 y in United States	Immigrants, >13 y in United States	US-Born	Mexico City Respondents, % (SE)	Hispanics	Total Sample
Any mood disorder	5.9 (0.8)	5.9 (1.4)	10.8 (2.0)	18.5 (1.7)	9.0 (1.1)	20.4 (2.8)	19.5 (0.6)
Any anxiety disorder	12.1 (1.1)	7.6 (1.2)	17.1 (2.1)	24.1 (2.0)	8.3 (0.8)	28.0 (2.5)	25.0 (0.8)
Any drug abuse or dependence	10.0 (1.1)	9.7 (2.6)	14.3 (1.9)	29.3 (2.0)	11.8 (0.8)	24.7 (2.7)	28.2 (1.0)
Any disorder	21.1 (1.5)	18.4 (2.7)	32.3 (2.6)	48.7 (2.3)	24.7 (51.4)	51.4 (2.7)	48.6 (1.0)

Note. All prevalence rates are adjusted to National Comorbidity Survey total age–sex distribution and are for persons aged 18 to 54 years.

to rates found in Mexico City (23.4%); however, it was less than half the rate for US-born Mexican Americans (48.7%) or for the US Hispanic population as a whole (51.4%). The past-year prevalence rate for any psychiatric disorder (not shown in Table 4) was 10.5% for migrants, 9.5% for immigrants with less than 13 years in the United States, 19.7% for immigrants with 13 years or more in the United States, and 27.7% for those born in the United States.

Discussion

Epidemiologic studies of the United States population have found no significant differences in overall prevalence of psychiatric disorders between men and women.[21,25,35] However, in our migrant sample, women had lower lifetime prevalence rates of psychiatric disorders than did men. In contrast to the findings of these resident-population studies,[21,25,35] we found that migrant women had mood disorder rates similar to those of migrant men. In addition, men's odds ratios for substance abuse or dependence were higher than those of women. Sex-specific patterns of psychiatric disorders merit further study to elucidate differential effects of stressors in men and women as well as protective factors associated with the living and working conditions of migrant populations.

The similarity in rates of psychiatric disorders between residents of Mexico and migrants and recent immigrants in the United States argues against selective migration of healthy individuals. To address the issue of time order in the onset of psychiatric disorders, we calculated past-year rates in addition to lifetime rates. The patterns of past-year prevalence rates were similar to those of lifetime rates. Collectively, these results suggest an increase in onset rates of psychiatric disorders with increased length of residence in the United States.

The paradox of better health outcomes among low-income immigrants in the United States, a high-risk group, has been attributed to protective sociocultural factors that may weaken as immigrants become established within the host society. Regional differences in patterns of mental health problems have been reported for indigenous people.[36–41] Ethnicity-specific cultural factors may be protective of both Indian and non-Indian immigrants' mental health, countering the potentially detrimental effects of their low socioeconomic attainment and minority status.[41,42] Among the Latino population, protective sociocultural factors mentioned in the literature include social support, strong family ties, and group identity.[34,43,44] Among indigenous peoples, a variety of factors have been associated with mental health problems, namely, low family support and decimated family structure, deculturation, loss of cultural coping styles, social stress and discrimination, and factors associated with Westernization and other modernization (e.g., social and geographic mobility).[45–50] These mental health risk factors may affect indigenous people who migrate from other countries as their exposure to American society increases.

Conclusion

These findings on the prevalence of major psychiatric disorders among Mexican migrant farmworkers in the United States are based on a unique database. They hold significant implications for evaluating and planning for mental health needs in this high-risk population, particularly since these data permit sex- and ethnicity-specific assessments. The evidence presented here of an association between acculturation and prolonged US residence and an increased risk of psychiatric disorders underscores the potential for progressive deterioration of migrant farmworkers' mental health as they extend their contact with the host society or become permanent settlers in the United States. Such deterioration may affect subsequent generations of migrant farmworkers as well. Special attention should be paid to facilitating access to culturally appropriate mental health services and to planning interventions to address the social adjustment problems of migrant farmworkers and their children. □

Contributors

E. Alderete planned the study and analyzed the data. W. A. Vega assisted in the conceptualization of the study and the writing and editing of the paper. B. Kolody supervised the statistical analyses, and S. Aguilar-Gaxiola provided assistance in constructing and estimating psychiatric diagnoses.

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