Acculturative Stress, Depression, and Suicidal Ideation in Mexican Immigrants

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This study examined the relationship among acculturative stress, depression, and suicidal ideation in a sample of Mexican immigrants. Also examined were variables that predict depression and suicidal ideation. Multiple regression analyses revealed that acculturative stress significantly predicted depression and suicidal ideation and that family support, social support, religiosity, agreement with the decision to migrate, and expectations for the future were significant predictors of depression and suicidal ideation. The overall findings suggest that adult Mexican immigrants who experience elevated levels of acculturative stress may be at risk for experiencing critical levels of depression and suicidal ideation. The findings highlight the importance of using culturally relevant clinical methods when assessing and treating the depressed and potentially suicidal acculturating individual.

• *acculturative stress* • *Mexican immigrants* • *depression* • *suicidal ideation* • *immigration* • *Hispanic*

Some authors (e.g., Hovey & King, 1997; Sorenson & Shen, 1996; Stack, 1981a, 1981b; Trovato, 1986) have suggested that immigration increases the risk of suicide. Several factors have been used to explain this relationship. These include the severing of ties to family and friends in the country of origin, as well as the consequent experience of loss and the reduction of effective coping resources; language inadequacy; the lack of so-

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cial and financial resources in the host country; the stress and frustration associated with unemployment; feelings of not belonging in the host society and a sense of anxious disorientation in response to the unfamiliar environment; and the experience of being pulled by traditional values, norms, and customs and those in the larger society (e.g., role conflict experienced by a working mother; parent–child conflict because of the child's encountering of the new culture through school).

Limited attention, however, has been given to the study of suicidality within immigrant populations. A few studies (Lester, 1989; Stack, 1981a, 1981b; Trovato, 1986) have found a positive relationship between immigration and suicide. These studies, however, focused on immigrants in a general sense rather than immigrants of a specific ethnic group, and they focused on completed suicide rate as the variable of study rather than the continuum of suicidal thoughts and behaviors.

Suicidality Among Mexican Americans

Suicide Mortality

Only a handful of studies have explored suicide and risk factors among the more specific immigrant-ethnic population of Mexican Americans. Smith, Mercy, and Warren (1985) compared suicide rates for a 5-year period (1976–1980) among Anglo Americans and Latino/Latinas (of which an estimated 86% were Mexican American) in five southwestern states. They found that the suicide rate for Latino/Latinas (9.0 per 100,000 individuals) was less than that for Anglo Americans (19.2). This discrepancy between groups, however, was less for adolescents (ages 15–19 years) and young adults (ages 20–24 years). The suicide rate for Latino/Latina adolescents was 9.0 compared with 11.9 for Anglo American adolescents; and the suicide rate for Latino/Latina young adults was 18.7 compared with 23.3 for Anglo American young adults. Smith et al. found that, among Latino/Latinas, the suicide rate was highest for young adults and that suicide rates then decreased with age. Anatore and Loya (1973) and Hatcher and Hatcher (1975) also found that suicide rates for Mexican Americans declined after peaking in youth. This pattern contrasts to the pattern of suicides increasing with age that is typically found (National Center for Health Statistics, 1998; Seiden, 1981) among both Anglo Americans and individuals in Mexico. According to Smith et al., their data suggest that assimilation into U.S. culture may diminish the power of cultural traditions to influence suicidal behavior, especially among Latino/Latina youths.

Suicidal Ideation and Suicide Attempts

Sorenson and Golding (1988a) compared lifetime rates of suicidal ideation and suicide attempts in a community-based sample of Mexican Americans and non-Latino/Latina Whites in the Los Angeles, California, area. Mexican immigrants revealed significantly lower lifetime rates of suicidal ideation (4.5%) than Mexican Americans born in the United States (13.0%), who revealed significantly lower rates than non-Latino/Latina Whites born in the United States (19.2%). Adjusted rates of suicide attempt were lowest among Mexican immigrants (1.6%) and higher among both Mexican Americans (4.8%) and non-Latino/Latina Whites (4.4%) born in the United States.

In a similar study, Sorenson and Golding (1988b) examined lifetime rates of suicidal ideation and suicide attempts in a community-based sample of Latino/Latinas (of which 87% were Mexican American) and non-Latino/Latina Whites in the Los Angeles, California, area. The authors found that fewer Latino/Latinas reported suicidal ideation (8.8% vs. 18.9%) and suicide attempts (3.2% vs. 5.1%) than non-Latino/Latina Whites. They also found that, in analyzing the sample as a whole, the presence of a depressive disorder increased the risk for suicide attempts and that all individuals who

reported suicide attempts also reported suicidal ideation.

Depression Among Mexican Americans

As with suicidality, relatively few studies of depression in the Mexican American population exist. The following are representative of those studies that have been conducted. Vega, Warheit, Buhl-Auth, and Meinhardt (1984) reported findings from an epidemiologic field study conducted among Mexican Americans living in Santa Clara, California. They found that women, those with disrupted marriages, those with low educational achievement, and those under the age of 30 had significantly higher levels of depressive symptoms than their counterparts. In addition, they found that Spanish-speaking Mexican Americans reported significantly higher levels of depressive symptoms than English-speaking Mexican Americans. Roberts and Roberts (1982) also found that Mexican American women reported more depressive symptoms than Mexican American men (as measured by the Center for Epidemiologic Studies–Depression Scale [CES-D]; Radloff, 1977).

Given the gender differences in depressive symptoms reported among Mexican Americans, both Salgado de Snyder (1987) and Vega, Kolody, Valle, and Hough (1986) explored depressive symptoms and their correlates among immigrant Mexican women. In a community-based sample of married women in Los Angeles County, Salgado de Snyder found significant associations between level of depressive symptoms and acculturative stress, lack of English proficiency, lack of spousal support, and lack of control over the decision to migrate. Similarly, Vega et al., in a community-based sample of Mexican immigrant women in San Diego County, found significant associations between depressive symptoms and recent migration (the past 5 years), low family income, low educational achievement, reduced health status, disrupted marital status, and the lack of confidant support. Both Salgado de Snyder's and Vega et al.'s samples revealed a high prevalence of depression (64% caseness on CES-D and 42% caseness on CES-D, respectively). Their overall findings suggest that a relatively high proportion of Mexican immigrant women may be at risk for the development of psychological problems.

Contrary to Salgado de Snyder (1987) and Vega et al. (1984, 1986), other findings do not suggest a negative association between depression and acculturation level. For example, Golding and Burnam (1990a) found that U.S.-born Mexican Americans revealed a higher prevalence of depressive symptoms than did immigrant Mexicans; and Kaplan and Marks (1990) found a positive relationship between acculturation and depression among Mexican American young adults.

Acculturative Stress

As just noted, there is no general consensus among researchers concerning the relationship of acculturation level and psychological distress. However, a number of researchers who have examined the relationship between acculturation and psychological distress have seemingly confounded the notion of acculturation with that of acculturative stress. That is, in their interpretations of findings, the researchers have *assumed* that acculturation is a stressful process, yet they did not measure specific acculturative stressors. In other words, they have measured acculturation, yet they discuss their results as if they are speaking about acculturative stress. (For discussions of this confound, see Betancourt & Lopez, 1993; Hovey & King, 1997.)

Acculturation refers to the changes that groups and individuals undergo when they come into contact with a different culture (Williams & Berry, 1991). Acculturative stress is a more specific concept than acculturation. It refers to the stress that directly results from and has its source in the accul-

turative process (Berry, 1990). Hovey and King (1996) found that levels of acculturation and acculturative stress were unrelated. Thus, it may be inaccurate to assume, for example, that individuals who are less acculturated experience more acculturative stress than individuals who are more acculturated. The level of acculturative stress varies from individual to individual and is likely determined by variables such as those discussed below.

Hovey and King (1997) presented a conceptual framework for studying acculturative stress and its relationship to depression and suicidal ideation. They extended Berry's (Berry, 1990; Berry & Kim, 1988; Williams & Berry, 1991) acculturative stress model to include possible consequences of heightened levels of acculturative stress. The revised framework has two components. First, it suggests that during the acculturative process, elevated levels of acculturative stress may result in significant levels of depression and suicidal ideation. In other words, the model suggests that individuals who experience elevated levels of acculturative stress may be at risk for the development of depression and suicidal ideation. Second, the model identifies those cultural and psychological factors that may account for high versus low levels of depression and suicidal ideation. The variables that may influence levels of depression and suicidal ideation include social support found within the new community; immediate and extended family support networks; socioeconomic status (SES), including work-status changes and specific characteristics of SES such as education and income; premigration variables such as adaptive functioning (self-esteem, coping ability), knowledge of the new language and culture, and control and choice in the decision to migrate (voluntary move vs. involuntary move); cognitive attributes such as expectations for the future (hopeful vs. nonhopeful); religiosity; and the degree of acceptance of cultural diversity (multicultural vs. assimilationist) within the larger society. These variables may serve as predictors of depression and suicidal ideation. Acculturating individuals with positive expectations for the future and relatively high levels of social support may, for example, experience less depression than individuals without the same expectations and support.

Hovey and King (1996) explored the relationship among acculturative stress, depressive symptoms, and suicidal ideation in a sample of immigrant and second-generation Latino/Latina (87% Mexican American) adolescents. Their research design was guided by the above framework. They found that acculturative stress was positively associated with depression and suicidal ideation and that acculturative stress, perceived family dysfunction, and nonpositive expectations for the future were significant predictors of depression and suicidal ideation. Their overall findings suggest that those acculturating adolescents experiencing heightened levels of acculturative stress are at risk for experiencing critical levels of depression and suicidal ideation, and that family support and hopefulness for the future may buffer against levels of distress.

Purposes of Present Study

Hovey and King (1996) noted that further research was needed to increase the generalizability of their findings. For example, the connection among acculturative stress, depression, and suicidal ideation should be explored with different age groups, ethnic groups, and acculturating groups (e.g., refugees, native peoples, and sojourners). In addition, other factors known or hypothesized to increase the risk for depression and suicidal ideation should be explored. These factors include social support outside the family, religiosity, motives for the move, coping skills, and self-esteem. The present study is a step in the direction to generalize their findings.

The first purpose of the present study is to determine the relationship among acculturative stress, depressive symptoms, and suicidal ideation in a sample of Mexican immi-

grants. It is expected that elevated levels of acculturative stress will significantly predict high levels of depression and suicidal ideation. The second purpose is to determine the best predictors of depression and suicidal ideation. The variables explored are family functioning, family intactness, expectations for the future, social support, religiosity, education and income (specific indicators of SES), and control and choice in the decision to migrate.

Method

Participants

Participants were 114 immigrants (76 female, 38 male) of Mexican descent from an English as a Second Language (ESL) community adult school in Los Angeles, California. Students from five ESL classes participated in the study. Approximately 95% of the students in these classes chose to participate. The participants did not appear to differ from the nonparticipants in terms of age and gender. The selected school is located in a predominantly Mexican American community. All of the participants were native speakers of Spanish.

The age of the sample ranged from 17 to 77 years (M = 33.70, SD = 15.76). Of the sample, 66.4% were ages 17 to 35 years, 22.1% were ages 36 to 55 years, and 11.5% were ages 56 to 77 years. A total of 30.1% of the participants were married, 46.0% were never married, 15.1% were separated or divorced, 3.5% were widowed, and 5.3% were in a common law marriage or living together. Of the participants, 83.2% were Catholic, 4.4% were Protestant, 6.2% reported "other" religious affiliations, and 6.2% reported no religious affiliation.

The number of years living in the United States ranged from 1 to 42 years (M = 9.27, SD = 10.76). Of the sample, 51.8% have lived in the United States for 1 to 4 years, 18.8% have lived in the United States for 5 to 10 years, and 29.4% have lived in the United States for 11 years or longer.

Measures

A self-administered battery of questionnaires was used. A background information form assessed age, gender, ethnicity, marital status, religiosity, age at migration, control and choice in the decision to migrate, family intactness (country in which most of family lives), education, and family income.

RELIGION VARIABLES. To assess perception of religiosity, influence of religion, and church attendance, the background information form asked the following three questions. These questions were designed specifically for this study: "How religious are you?" (possible responses were the following: 1 = *not at all religious*, 2 = *slightly religious*, 3 = *somewhat religious*, 4 = *very religious*); "How much influence does religion have upon your life?" (possible responses were the following: 1 = *not at all influential*, 2 = *slightly influential*, 3 = *somewhat influential*, 4 = *very influential*); and "How often do you attend church?" (possible responses were the following: 1 = *never*, 2 = *once or twice a year*, 3 = *once every 2 or 3 months*, 4 = *once a month*, 5 = *two or three times a month*, 6 = *once a week or more*).

CONTROL AND CHOICE IN THE DECISION TO MIGRATE. To assess perception of control and choice in the decision to migrate, the background information form asked the following questions. These questions were developed specifically for this study: "If you were born in another country, did you contribute to the decision to move to the United States?" (possible responses were the following: 1 = *not at all*, 2 = *some [a little bit]*, 3 = *moderate [pretty much]*, 4 = *very much [a great deal]*); and "If you were born in another country, did you agree with the decision to move to the United States?" (possible responses were the following: 1 = *strongly disagreed*, 2 = *disagreed*, 3 = *agreed*, 4 = *strongly agreed*).

SHORT ACCULTURATION SCALE FOR HISPANICS. Level of acculturation was measured with the Short Acculturation Scale for Hispanics

(Marín, Sabogal, VanOss Marín, Otero-Sabogal, & Perez-Stable, 1987). This scale measures acculturation by asking about language use. The scale has been found (Khorram, Buchanan, Hoyt, Reilly, & Foster, 1994; Marin et al., 1987) to have adequate internal reliability (Cronbach α = .92) and construct validity for Mexican Americans.

FAMILY ASSESSMENT DEVICE. The General Functioning subscale of the Family Assessment Device (FAD; Epstein, Baldwin, & Bishop, 1983) was used to measure family functioning. The FAD is a self-report scale consisting of statements that participants endorse in terms of how well each statement describes their family. Items are scored on a 4-point Likert scale (1 = *strongly agree* to 4 = *strongly disagree*), with scaled scores (for each dimension) ranging from 1.00 (*healthy*) to 4.00 (*unhealthy*). The General Functioning subscale consists of 12 items. Examples of items include the following: "In times of crisis we can turn to each other for support" and "We avoid discussing our fears and concerns." The FAD has been used extensively to measure family functioning among different ethnic groups (e.g., Keitner et al., 1991; Morris, 1990), including Mexican Americans (Hovey & King, 1996). The FAD has been found (Epstein et al., 1983; Halvorsen, 1991) to have adequate internal reliability (.72 to .92), test–retest reliability (.66 to .76), and construct validity in general community samples. The Cronbach alpha for the present study was .71, thus indicating adequate internal reliability in the present sample.

PERSONAL RESOURCE QUESTIONNAIRE. The Personal Resource Questionnaire–Part 2 (PRQ85; Weinert, 1987) was used to measure social support. Part 1 of the PRQ85 provides descriptive information about the social networks of individuals. Part 2 measures the perceived effectiveness of social support and consists of 25 items rated on a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). Possible scores range from 25 to 175. Higher scores indicate higher levels of perceived social support. Examples of items include the following: "I belong to a group in which I feel important," "I have people to share social events and fun activities with," "I can't count on my friends to help me with problems," and "Among my group of friends we do favors for each other." The PRQ85–Part 2 has been found (Weinert, 1987; Weinert & Brandt, 1987; Weinert & Tilden, 1990) to have adequate internal reliability (.87 to .93), test–retest reliability (.72), and construct validity in general community samples. The Cronbach alpha for the present study was .85, thus indicating adequate internal reliability.

SAFE SCALE. Acculturative stress was measured with the SAFE scale (Mena, Padilla, & Maldonado, 1987). This scale consists of 24 items that measure acculturative stress in Social, Attitudinal, Familial, and Environmental contexts, in addition to perceived discrimination (majority group stereotypes) toward immigrant populations. Participants rate each item that applies to them on a 5-point Likert scale (1 = *not stressful* to 5 = *extremely stressful*). Examples of items include the following: "People think I am unsociable when in fact I have trouble communicating in English," "It bothers me that family members I am close to do not understand my new values," and "Because of my ethnic background, I feel that others exclude me from participating in their activities." If an item does not apply to a participant, it is assigned a score of 0. The possible scores range from 0 to 120. Higher scores indicate higher levels of acculturative stress. The SAFE scale has been found (Fuertes & Westbrook, 1996) to have adequate internal reliability (.89) and construct validity for Mexican Americans. The Cronbach alpha for the present study was .90.

CES-D. The CES-D (Radloff, 1977) was used to measure depressive symptomatology. The CES-D assesses level of depressive symptoms within the past week and consists of 20 items rated on a 4-point scale (1 = *rarely or none of the time* to 4 = *most or all of the time*). Possible

scores range from 0 to 60. Higher scores indicate higher levels of depressive symptoms. The accepted caseness is a score of 16 or over, which represents the upper 20% of scores. This threshold was established through validity studies of patient and community populations (Vega, Kolody, Valle, & Hough., 1986). Some researchers (e.g., Vega, Kolody, Valle, & Hough, 1986), however, have more conservatively estimated caseness as a score of 24 or greater. The CES-D has been used extensively with Mexican Americans (e.g., Golding & Burnam, 1990a). Several studies (e.g., Golding & Aneshensel, 1989; Golding, Aneshensel, & Hough, 1991) have found that the scale has adequate internal reliability (.87 to .90) and construct validity for Mexican Americans. The Cronbach alpha for the present study was .81.

ADULT SUICIDAL IDEATION QUESTIONNAIRE. The Adult Suicidal Ideation Questionnaire (ASIQ; Reynolds, 1991a) was used to measure suicidal ideation. The ASIQ is a 25-item self-report measure that assesses the nature and frequency of suicidal ideation within the past month. Participants rate each item on a 7-point scale that assesses the frequency of occurrence of a specific suicidal behavior or thought within the past month. The scale ranges from 0 = *I never had this thought* to 6 = *almost every day.* Possible overall scores range from 0 to 150. A critical level is reached with a score of 31 or greater, thus indicating potentially significant psychopathology and suicide risk. The ASIQ has been found (Reynolds, 1991a, 1991b) to have adequate internal reliability (.96 to .97), test–retest reliability (.86 to .95), and construct validity in community samples. The Cronbach alpha for the present study was .97.

EXPECTATIONS FOR THE FUTURE. Finally, to measure individual attitudes and expectancies concerning the future, the questionnaire packet included the following open-ended question: "What do you think the future will be like for you and your family?" Each response was coded as positive (hopeful) or nonpositive (nonhopeful) by three research assistants who were unaware of the study's hypotheses and other questionnaire responses. The interrater reliability, calculated as a percentage agreement, was 96.45%. Disagreements were resolved by consensus.

TRANSLATION. The background information form and open-ended question were developed in English and, along with the other measures, were translated into Spanish by a doctoral-level bilingual researcher of Mexican descent. A second doctoral-level bilingual researcher of Mexican descent then back-translated the materials to English. Content discrepancies were discussed by these two researchers, plus a third bilingual researcher, until conceptual equivalence of the measures was reached (Brislin, 1980).

Procedure

At the beginning of each of the five classes, I notified the students about the general topic of study and noted that their participation was entirely voluntary, anonymous, and confidential. Those individuals willing to participate were then administered the self-report questionnaires in the classroom setting. The questionnaires were in Spanish and required 45 to 90 min to complete. The teachers and I read questionnaire items to those participants who needed assistance. Individuals who completed the questionnaire were given $5 for their participation. The teachers incorporated the filling out of questionnaires into their classroom schedules and were supportive of the questionnaire's administration.

Data Analyses

Previous findings (Hovey & King, 1996) suggested a relationship between acculturative stress and depression ($r = .32$) and acculturative stress and suicidal ideation ($r = .38$). According to Lipsey (1990), the present study will detect a similar correlation between ac-

culturative stress and depression in a sample of 81, and a similar correlation between acculturative stress and suicidal ideation in a sample of 57. The present sample size of 114 was thus determined to be sufficient for the planned analyses.

The data analyses are presented in three steps. First, descriptive statistics are presented. Second, bivariate associations among predictor and dependent variables are presented. Specifically, correlation coefficients were used to assess the relationships among the continuous predictor variables (acculturative stress, perception of religiosity, influence of religion, church attendance, contribution to the decision to migrate, agreement with the decision to migrate, education, income, family functioning, and social support) and depression and suicidal ideation. Analyses of variance (ANOVAs) were used to assess the effects of the categorical predictor variables (expectations for the future and family intactness) on depression and suicidal ideation. Third, two stepwise multiple regression analyses are presented. They were conducted to determine the best predictors of depression and suicidal ideation.

Results

Descriptive Statistics

ACCULTURATION. Acculturation level ranged from 5 to 14 (M = 7.12, SD = 2.2). The possible range, indicating low to high acculturation, was 5 to 25. The overall sample thus revealed relatively low levels of acculturation.

CHURCH ATTENDANCE, PERCEPTION OF RELIGIOSITY, AND INFLUENCE OF RELIGION. Table 1 shows the frequency distributions for church attendance, perception of religiosity, and influence of religion. About two thirds of individuals attended church at least two or three times per month and reported that they were slightly religious. Scores for perceived influence of religion were equally distributed. The mean score for perception of religiosity was 2.25 (SD = 0.76). The mean score for perceived influence of religion was 2.51 (SD = 1.02).

TABLE 1 Sample Distributions for Sociodemographic Variables

Variable	%	*Cumulative %*
Church attendance		
Never	1.9	1.9
Once or twice a year	9.3	11.2
Once every 2 or 3 months	14.0	25.2
Once a month	3.7	29.0
2 or 3 times a month	25.2	54.2
Once a week or more	45.8	100.0
Self-perceived religiosity		
Not at all religious	7.5	7.5
Slightly religious	70.8	78.3
Somewhat religious	10.4	88.7
Very religious	11.3	100.0
Perceived influence of religion		
Not at all influential	15.7	15.7
Slightly influential	40.7	56.5
Somewhat influential	20.4	76.9
Very influential	23.1	100.0
Did you contribute to the decision to move?		
Not at all	8.3	8.3
Some (a little bit)	20.8	29.2
Moderate (pretty much)	20.8	50.0
Very much (a great deal)	50.0	100.0
Did you agree with the decision to move?		
Strongly disagreed	2.9	2.9
Disagreed	2.9	5.9
Agreed	56.9	62.7
Strongly agreed	37.3	100.0
Education		
0–2 years of school	16.5	16.5
3–5 years of school	20.2	36.7
6–8 years of school	17.4	54.1
9–11 years of school	23.9	78.0
High school graduate	8.3	86.2
Some college	11.9	98.2
Bachelor's degree	1.8	100.0
Graduate degree	0.0	100.0
Income		
$0 to $4,999	41.1	41.1
$5,000 to $14,999	31.1	72.2
$15,000 to $24,999	17.8	90.0
$25,000 to $34,999	2.2	92.2
$35,000 to $44,999	5.6	97.8
$45,000 to $59,999	1.1	98.9
$60,000 to $80,000	1.1	100.0
Over $80,000	0.0	100.0

CONTRIBUTION TO THE DECISION TO MIGRATE AND AGREEMENT WITH THE DECISION TO MIGRATE. Table 1 lists the distributions for contribution to the decision to migrate and agreement with the decision to migrate. The mean score for the contribution to the decision to migrate was 3.13 (SD = 1.02). The mean score for agreement with the decision to migrate was 3.28 (SD = 0.67).

EDUCATION AND INCOME. Table 1 shows the distributions for education and income. Most individuals reported relatively low levels of education and income.

EXPECTATIONS FOR THE FUTURE. Of the participants, 88.2% were coded as having positive expectations for the future; 11.8% were coded as having nonpositive expectations for the future.

FAMILY INTACTNESS, FAMILY FUNCTIONING, AND SOCIAL SUPPORT. Of the participants, 82.2% reported that most family members live in the country of origin; 15.8% reported that most family members live in the United States. The mean score for the General Functioning subscale of the FAD (family functioning) was 2.18 (SD = 0.44). The mean score for the PRQ85 (social support) was 120.70 (SD = 26.41). These two means represent overall moderate levels of support.

ACCULTURATIVE STRESS, DEPRESSION, AND SUICIDAL IDEATION. Table 2 lists the means and standard deviations for the SAFE scale (acculturative stress), the CES-D (depression), and the ASIQ (suicidal ideation). Gender had no significant main effects on acculturative stress and suicidal ideation. Gender did have a significant main effect on depression, $F(1, 107) = 4.19$, $p < .05$, with women revealing higher overall depression scores.

On the CES-D, 58.7% of the participants reached caseness with a score of 16 or greater (for women, 64.9%; for men, 45.7%). Of the sample, 31.2% reached the more conservative caseness threshold with a score of 24 or greater (for women, 39.2%; for men, 14.3%). On the ASIQ, 11.2% of the participants scored at the critical level with a score of 31 or greater (for women, 13.0%; for men, 7.9%).

Relationships Between Predictor Variables and Depression

Infrequent church attendance ($r = -.20$, $p < .05$), low levels of perceptions of religiosity ($r = -.17$, $p < .05$), low levels of income ($r = -.18$, $p < .05$), family dysfunction ($r = .27$, $p < .005$), ineffective social support ($r = -.31$, $p < .001$), and high levels of acculturative stress ($r = .40$, $p < .001$) were significantly correlated with high levels of depression.

Perceived influence of religion ($r = .12$), contribution to the decision to migrate ($r = -.05$), agreement with the decision to migrate ($r = -.06$), and education ($r = -.11$) were not significantly correlated with depression.

An ANOVA was used to study the effects of expectations for the future on depression. The analysis revealed a significant

TABLE 2 Participants' Mean Scores and Standard Deviations on Measurements of Acculturative Stress, Depression, and Suicidal Ideation

	Acculturative stress		*Depression*		*Suicidal ideation*	
Group	*M*	*SD*	*M*	*SD*	*M*	*SD*
All participants (N = 114)	49.87	18.21	19.56	10.23	10.14	23.66
Females (n = 76)	49.90	18.56	20.92	10.92	11.22	27.62
Males (n = 38)	49.81	17.76	16.69	7.99	8.18	13.99

main effect for expectations for the future, $F(1, 105) = 18.09$, $p < .0001$. Those participants who revealed nonpositive expectations reported higher depression scores. A second ANOVA revealed no significant main effect for family intactness on depression.

Relationships Between Predictor Variables and Suicidal Ideation

Infrequent church attendance ($r = -.17$, $p < .05$), low levels of perception of religiosity ($r = -.18$, $p < .05$), low levels of perceived influence of religion ($r = -.24$, $p < .01$), and low levels of agreement with the decision to migrate ($r = -.32$, $p < .001$) were significantly correlated with high levels of suicidal ideation. Table 3 lists the correlations among family functioning, social support, acculturative stress, depression, and suicidal ideation. As shown, ineffective social support, high levels of acculturative stress, and high levels of depression were also significantly correlated with high levels of suicidal ideation.

Education ($r = -.10$), income ($r = -.11$), contribution to the decision to migrate ($r = -.12$), and family functioning ($r = .09$) were not significantly correlated with suicidal ideation.

An ANOVA was used to study the effects of expectations for the future on suicidal ideation. The analysis revealed a significant main effect for expectations for the future, $F(1, 105) = 18.31$, $p < .0001$. Those participants who revealed nonpositive expectations reported higher suicidal ideation scores. A second ANOVA revealed no significant main effect for family intactness on suicidal ideation.

TABLE 3 Correlations Among Family Functioning, Social Support, Acculturative Stress, Depression, and Suicidal Ideation for Mexican Immigrants

Variable	*Depression*	*Suicidal ideation*
Family functioning	.27*	.09
Social support	−.31**	−.26*
Acculturative stress	.40**	.26*
Depression		.25*

Note. $N = 114$. Pearson correlation coefficients. Significance levels are based on one-tailed tests.

*$p < .01$. **$p < .001$.

Multiple Regression Analyses of Depression and Suicidal Ideation

No significant interactions were found among acculturative stress and the other predictor variables in predicting depression and suicidal ideation. Similarly, no significant interactions were found among depression and the other predictor variables in predicting suicidal ideation. Therefore, no interaction terms were included in the following two regression analyses.

DEPRESSION. A stepwise multiple regression analysis was conducted to examine the relative strength of the variables in predicting depression. In this analysis, acculturative stress, social support, family functioning, expectations for the future, church attendance, perception of religiosity, income, and gender were entered as predictors of depression. The strongest predictor of depression was acculturative stress ($\beta = .54$, $t = 5.5$, $p < .0001$), which accounted for 29% of the variance in depression. Social support ($\beta = -.25$, $t = -2.6$, $p < .01$) was the second strongest predictor and explained another 6% of the variance. Expectations for the future ($\beta = .17$, $t = 1.7$, $p < .09$) and family functioning ($\beta = .16$, $t = 1.6$, $p < .12$) together explained 4% further variance. When combined with the remaining variables, the equation accounted for 41% of the variance in depression.

SUICIDAL IDEATION. Another stepwise multiple regression analysis was conducted to explore the relative strength of the variables in predicting suicidal ideation. Acculturative stress, depression, social support, expectations for the future, church attendance, perception of religiosity, perceived influence of religion, and agreement with the decision to

migrate were entered as predictors of suicidal ideation. Expectations for the future ($\beta = .41$, $t = 4.0$, $p < .0005$) was the strongest predictor, accounting for 16% of the variance in suicidal ideation. Agreement with the decision to migrate ($\beta = -.31$, $t = -3.2$, $p < .005$), perceived influence of religion ($\beta = -.19$, $t = -2.0$, $p < .02$), acculturative stress ($\beta = .20$, $t = 2.1$, $p < .04$), and social support ($\beta = -.16$, $t = -1.7$, $p < .10$) were also significant independent predictors of suicidal ideation. Together they explained another 18% of the variance. The remaining variables added little variance to the equation. The overall equation accounted for 35% of the variance in suicidal ideation.

Discussion

Generally stated, the major theme of the present study is that the migration experience may put an individual "at risk." The present findings are compelling in that they revealed significant relationships among acculturative stress, depression, and suicidal ideation among adult Mexican immigrants, in addition to identifying factors that specifically predicted elevated levels of depression and suicidal ideation. As mentioned, little data are available on depression and suicidality among Mexican immigrants. Thus, a purpose of this study was to examine depression and suicidal ideation within this group. The resulting data thus contribute both a critical element to the acculturative stress literature and an important cultural variable to the literature on depression and suicidality.

Depression and Suicidal Ideation

DEPRESSION. The present study revealed that 59% of the sample reached caseness with a score of 16 or greater and that 31% reached the more conservative caseness threshold with a score of 24 or greater. These percentages appear to be extremely high. As a comparison, Vega, Kolody, and Valle (1986) estimated that about 18% of individuals from general population samples reach the caseness threshold of 16. As a further comparison, Salgado de Snyder (1987) and Vega, Kolody, Valle, and Hough (1986) noted the very high prevalence of depressive symptoms found within their samples of Mexican immigrants. Salgado de Snyder found that 64% of her sample scored 16 or greater and that 14% scored 24 or greater. Vega, Kolody, Valle, and Hough found that 42% scored 16 or greater and that 23% scored 24 or greater. It should be noted that the high overall rate of depression found in the present sample does not imply that all Mexican immigrants, per se, are highly depressed, but that the experiences that go into being a Mexican immigrant potentially influence psychological status. For example, past research (e.g., Cuéllar & Roberts, 1997; Holtzer et al., 1986) has shown an inverse relationship between SES and depression. As noted, the majority of the present sample was living at or below the poverty level, which may partly explain the high overall depression.

The present finding of women revealing higher levels of depression than men is consistent with the literature on depression among Mexican Americans (e.g., Roberts & Roberts, 1982). It is not clear, however, what portion of these gender differences can be attributed to cultural factors, as some researchers (e.g., Vega et al., 1984) have found gender differences among both Mexican Americans and Anglo Americans.

Several hypotheses have been given for the gender differences in depression. Vega et al. (1984) noted that women may report more depression than men because it is more socially acceptable for women to admit to having these symptoms. Other authors have proposed explanations that are more culture-bound. Golding and Karno (1988) and Vega, Kolody, Valle, and Hough (1986) suggested that the gender difference in depression involves cultural conflict between traditional Latino/Latina values of gender roles and those found in U.S. society. For example, one possible conflict is between the traditional role of the female

homemaker and the less traditional role of the female employee. The effort to fulfill both roles may be distressing as the role of employee may take away from the cultural role expectations of homemaker. Latina women, moreover, may experience levels of discrimination in the workplace, thus creating further distress. Lara-Cantu and Navarro-Arias (1986) hypothesized that, as Latina women acculturate, they may begin to endorse norms that advocate warmth and expressiveness in men. However, acculturating Latina women may marry men who hold traditional Latino/Latina norms that require men to dominate rather than to be supportive. This gender difference in norms concerning men's expressiveness and warmth may thus be experienced by some women as a deficit in marital support.

The present study, using a self-report methodology, measured depression as a constellation of symptoms and did not obtain specific clinical information about the onset, duration, and severity of the depressive symptoms. Nevertheless, although the CES-D is not a diagnostic instrument, it was found (Hough, 1983) to have a concordance of approximately 85% for current major depression using the Diagnostic Interview Schedule (Robins, Helzer, Croughan, & Ratcliff, 1981). Thus, although depression was defined somewhat broadly in the present study, the findings do have relevance for clinical work and further research among Mexican immigrants.

SUICIDAL IDEATION. The present findings revealed that 11% of the Mexican immigrants experienced critical levels of suicidal ideation, which has been previously linked to an increased risk for suicidal behavior (e.g., Rudd, 1989). This percentage appears to be very high. As a comparison, 3% of the standardization sample of the ASIQ reported a critical level of suicidal ideation (Reynolds, 1991a).

CONTINUUM OF SUICIDAL THOUGHTS AND BEHAVIORS. There is evidence (Moscicki, 1995; Reynolds, 1991a) that most suicidal behaviors occur on a continuum of severity that proceeds from less serious and more prevalent behaviors through increasingly severe and less prevalent behaviors. For a comprehensive understanding of the phenomena of suicidal behaviors within a particular group, research relevant to the full continuum of suicide is needed. As noted, however, previous research on suicidality among immigrant and Mexican American groups (e.g., Smith et al., 1985; Trovato, 1986) has focused on completed suicide as the variable of interest. Very few studies (e.g., Hovey & King, 1996; Sorenson & Golding, 1988a, 1988b) have explored other aspects of the continuum. The present findings, with a focus on suicidal ideation, contribute to the research pertinent to the continuum of suicidal behaviors.

Acculturative Stress in Relation to Depression and Suicidal Ideation

Mexican immigrants experiencing heightened levels of acculturative stress also reported elevated levels of depressive symptoms and suicidal ideation. These at-risk individuals may feel caught between cultures. That is, these individuals may feel pulled between the influence of traditional customs, values, norms, and traditions and the values, norms, and experiences in the mainstream society. These individuals may also encounter discrimination, language, and economic difficulties; lack integration into the community; and experience the breaking of ties with family and friends in the country of origin, thus resulting in feelings of loss and a reduction of effective coping resources.

Predictors of Depression and Suicidal Ideation

FAMILY SUPPORT. The results suggest that family dysfunction is linked with greater depression and that emotional closeness is more important than physical closeness (family intactness). Salgado de Snyder (1987) and Hovey and King (1996) sug-

gested the same notion when they stated that perceived effectiveness of support may be a more adequate measure of support than access to support. The relationship between family functioning and depression is not surprising, considering the importance of the family as a core characteristic of Latin culture, as the family has traditionally been important in providing emotional support for its members. Several researchers (e.g., Rueschenberg & Buriel, 1989; Sabogal, Marín, Otero-Sabogal, VanOss Marín, & Perez Stable, 1987) have found that a high level of perceived family support is the most essential and stable dimension of Latin familism. Thus, without the family providing stability and emotional support, a more difficult acculturative experience is expected.

Some of the subjective data of the present study provided a sense of individual experience that is sometimes lacking in quantitative data. For example, in reply to the open-ended question, the following response from an 18-year-old female participant details the importance of and the effort to maintain family closeness, despite the physical separation of family members.

> I feel that the future will be pleasant in respect to family unity. My parents have worked hard so that the family ties won't break in response to whatever problem presents itself in the family. A united family is needed for our emotional stability. A united family lives better. Long live the family! And even when the borders or distance separate us, we will always be close, or at least we will try to be.

SOCIAL SUPPORT. The present study measured the perceived effectiveness of social support rather than access to social support networks. Several authors (e.g., Golding & Burnam, 1990b; Holtzman & Gilbert, 1987; Sarason, Levine, Basham, & Sarason, 1983) have observed that larger social networks do not ensure that the support will be of higher quality or more effective, and therefore the perceived quality of social support may be a more accurate predictor of psychological distress than is quantity of social support. The present findings indicated that low levels of social support significantly predicted elevated levels of depression and suicidal ideation. These findings thus lend support to the idea that social support of high quality may help individuals cope during the acculturative process.

RELIGION. It has been a long-standing assumption that the Catholic religion plays a protective role against suicide (Stack, 1992). Despite this assumption, the results of studies that have examined the relationship of religious affiliation and suicide risk are inconsistent. In comparing the suicide rates among Catholics and Protestants, some authors (e.g., Maris, 1981) have found an increased suicide risk for Catholics, whereas others (e.g., Kowalski, Faupel, & Starr, 1987; Stack & Lester, 1991) have found no connection between religious affiliation and suicide risk.

Given these inconsistent findings, the present study assessed religion by measuring perceptions of religiosity, influence of religion, and church attendance. The present findings support the notion that religion plays a protective role against suicide risk because all three religion variables were negatively associated with suicidal ideation. The strength of church attendance as a variable may be due to its reflection of how well one is tied into a religious group, which is a potentially important source of social support. The variable of church attendance may therefore be an indicator of both the shared beliefs and practices of a religious group and the social support derived from networking, which together may reduce the risk of suicide.

Several individuals wrote of the importance of religious beliefs in coping with life's difficulties. The following are examples.

> [My future is] pretty good because the desire to excel consists of having a fear of God, and everything comes on top of that. Jesus gives us love, patience, and the courage to go forward in life. (26-year-old man)

> If God helps us, we'll be united—one to the others (amongst ourselves)—and we will be

able to go forward and work through the problems in the family. (24-year-old man)

EXPECTATIONS FOR THE FUTURE. The present results indicated that positive expectations for the future significantly predicted lower levels of depression and suicidal ideation. According to Williams and Berry (1991), attitudes and expectancies toward the acculturative experience may affect individual coping strategies and ability to adapt, thus affecting individual level of distress. Generally, those immigrants who perceive acculturative changes as opportunities may experience less distress than those who do not.

It is not surprising that positive expectations for the future were significantly related to low levels of depression and suicidal ideation. As noted, the open-ended responses were coded according to the hopefulness displayed. The relationships between expectations and depression and between expectations and suicidal ideation were thus expected, given previous findings that have revealed connections between hopelessness and depression (e.g., Beck, Steer, Kovacs, & Garrison, 1985) and hopelessness and suicidal thoughts and behaviors (e.g., Weishaar & Beck, 1992).

To further share the sense of depth, richness, and individual experience found within the present sample, as well as to portray the differences between those open-ended responses coded as positive and those coded as nonpositive, I provide the following examples. The first is a positive response from a 30-year-old man:

> In reality, it's a little difficult to achieve success today, but I feel sure about struggling against the tide. I came to this country to achieve success, which in my country was not possible. Today I'm forging ahead with my family, sure of myself without complexes nor obstacles. We know to go forward, and we will be the future of this grand country, the United States of America.

The next set of responses are nonpositive.

> I see my future as very disorganized, because I feel confused. I see that I won't be able to organize the future. (21-year-old woman)
>
> I think that everything gained is going backwards. (49-year-old man)
>
> I think that the future is going to be a disaster. (32-year-old man)
>
> [The future will be worse] than now if the new president of the United States is Republican. I've already been affected a lot with the simple fact of having Pete Wilson as the governor of California. I think that there will be a lot of stress, not only in my family, but in many families that are not Anglo. Employment right now is very difficult and it will be even more so. The future will be hard for my children and my parents. I don't have confidence in the government, education, morality, and crime. (20-year-old man)

Limitations and Directions for Future Research

Limitations of the present study include its relatively small sample size, its single-informant self-report method, and its cross-sectional design. The range of hopefulness may have been restricted, given that the individuals in the sample had taken the "hopeful" step of attending ESL classes; and the range of income was restricted, thus allowing for limited conclusions about the influence of SES on depression and suicidal ideation. Although the FAD, PRQ85, and ASIQ were shown to be reliable in the present study, these scales have yet to be fully validated on Mexican immigrants. Because these scales were normed on English-speaking dominant individuals, the construct validity of these scales for non-English-speaking groups such as Mexican immigrants is uncertain (Dinges & Cherry, 1995; Olmedo, 1981). Moreover, some authors (e.g., Good & Good, 1986) have noted the possibility that culturally patterned variations in the expressions of distress may account for higher distress reported by Spanish-speaking individuals. Caution should therefore be taken in the interpretation of data. The homogeneity of the sample in terms of ethnicity and area sampled suggests

that findings should not be generalized to samples with other characteristics.

Further research should thus concentrate on increasing the study's generalizability. For example, the connection among acculturative stress, depression, and suicidality should be explored in other geographical regions, with different ethnic groups, and with other types of acculturating groups such as native peoples and refugees. Other factors hypothesized to increase the risk for acculturative stress, depression, and suicidality should also be explored. These include coping skills, self-esteem, prior knowledge of language and culture of the new society, congruity between contact expectations and actualities, and the sense of loss resulting from the separation of family and friends. The use of qualitative methods can help identify the particular acculturative stressors experienced by individuals, in addition to the specific coping mechanisms used in response to these stressors. Finally, further research with a longitudinal design is needed to address more clearly the question of directionality.

Clinical Implications

The present findings have implications for the training of professionals in the evaluation, intervention, and treatment of Mexican immigrants. For the individual who may be experiencing acculturative stress and symptoms of depression and suicidal ideation, the findings highlight the importance of assessment and treatment within a cultural context. That is, the initial evaluation should carefully explore the stress relating to acculturation, family and social support, past and present coping strategies (including religion), cognitive attributes such as attitudes and expectations for the future, and level of SES, including possible work-status changes. Moreover, the roles of these factors, the reasons for the migration, the migration experience itself, and consequent change are issues that should be explored throughout the course of treatment.

It is important to note that although the acculturative stress model enhances the understanding of individuals' adaptation to the stress encountered during the acculturative process, each individual who seeks treatment has a unique history that modulates and defines the parameters of his or her specific problems. An individual entering treatment will seldom state that he or she has "acculturation problems" or "psychological problems caused by migration."

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