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Mental Health and Sociocultural Determinants in an Asian Indian Community

Lisa R. Roberts, DrPH; Semran K. Mann, MPH; Susanne B. Montgomery, PhD

In a US population of adult male and female Sikh immigrant participants (N = 350), we explored sociocultural factors related to depression, giving participants a choice between English or Punjabi surveys. Language preference pointed to a subgroup with higher levels of depression and lower satisfaction with life. Underreporting of depression suggests a general reluctance to discuss depression. While multiple sociocultural variables were associated with depression bivariously, multivariate analysis identified negative religious coping and anxiety as unique predictors of depression. Community interventions should tap into the protective close-knit social fabric of this community as an opportunity to change the stigma of mental health.

Key words: Asian Indian immigrants, depression, sociocultural determinants

THE HUMAN JOURNEY across nations carries with it profound consequences for the health of immigrants, their families, as well as others in the communities of origin, passage, and destination. To better grasp how migration to the United States affects immigrant health, we must develop a more complete picture of our nation's diverse immigrant community. In addition to genetics, the context of people's lives determines their health. Social, economic, and physical environments, sociocultural determinants—such as social support networks, culture-customs and traditions, as well as beliefs of the family and community,¹ impact health and need to be better understood to address immigrant health disparities.²⁻⁴ Furthermore, immigrant health affects all that interact, live, and work with members of these communities, thus ultimately affecting the health of the United States as a whole.

Asian Indians (AIs) make up the largest South Asian subgroup in the United States. They are also one of the fastest growing groups in the United States.^{3,4} According to recent US Census Bureau reports, there are more than 3 million AIs in the United States, and of this group, more than 68% are foreign-born.⁵ Recent reports of the migration trends for AIs in the United States, and regarding AIs in California specifically, have established California as one of the states in the United States with the largest number of AI ethnic enclaves. The most

recent estimate from the US Census Bureau reports 675 041 AIs in California.^{6,7}

Despite the rapid growth of the AI population in recent years, little is known about the mental health status, needs, and perceptions of this group.^{3,8} Only a few studies provide some insight into the mental health of the AI population and its utilization of the mental health care system.⁸ Similar to other immigrant groups, these studies highlight the psychosocial distress AIs face as they cope with transitions related to immigration and point to the importance of understanding acculturation stressors. These stressors include language barriers, culture, nuances of gender roles, family structure, and intergenerational tensions.⁸⁻¹⁰ The existing body of evidence describes mental health disparities faced by AI immigrant communities and also points to a significant need for addressing the gaps in research and programming to tackle these disparities.

The upsurge in AI immigrants in recent decades and the subsequent growth of the foreign-born population in the United States further highlights the importance of understanding the unique acculturation processes and mental health needs as the influx of immigrants to the United States continues to grow. Recent studies suggest that an understanding of the differences between early immigration (before 1985) and more recent waves of AI immigrants is an important factor that should be considered with regard to varying mental health issues, stressors, and barriers to service utilization.¹¹ Earlier waves of AI immigrants were mostly highly educated men who later married and were joined in the United States by Indian wives who were less educated and often confined to the home, the next wave consisted of highly educated men who married highly educated Indian women, and more recently the Family Reunification Act brought dependents who are less educated. Earlier studies noted lower rates of psychiatric disorders among South Asian Americans (including AIs) in general, which is now believed, in part, to be

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attributable to this phenomenon of large numbers of highly skilled health and science professionals.¹² Further described in these studies is the observation that individuals who were among the upper echelon in their countries of origin and who reside in the United States as documented immigrants report fewer mental health issues and better adjustment to their adopted residence than those who migrate with less social capital.¹²

Overall, however, studies provide evidence that AI immigrant communities (regardless of gender, age, and generation) do nevertheless experience significantly increased levels of depression, anxiety, and psychosocial distress; an examination of the stressors related or thought to contribute to these issues do vary considerably based on age, gender, and generation.^{3,13} Notably, AI immigrants largely do not seek professional help for mental health-related issues, instead, depending on religion or other trusted sources of support such as social networks or family.^{3,14} Qualitative and quantitative studies have described AI mental health service-seeking behavior as hampered by cultural stigma, lack of awareness of services available, and poor understanding of mental health issues in general.^{3,9,10} Additional barriers include a lack of culturally and linguistically available resources, the high cost of mental health services, the desire to avoid worrying family members, and, for adolescents and young adults, the perception of parents' lack of knowledge regarding mental health issues.¹¹⁻¹⁵

Moreover, as with many immigrant communities, AIs often distrust researchers and rarely participate in studies, making a more detailed examination of sociocultural factors related to the mental health challenging. To date, there are less than a handful of studies that look at the mental health needs and associated sociocultural factors in the AI immigrant community in the United States and none are specific to the AI subgroup of Punjabi Sikhs.^{4,8,9} Indeed, we know little about the interplay of community and personal coping resources on the psychological well-being of Punjabi Sikh immigrants when they are faced with stressful life events.⁹ In addition, a major limiting factor of these studies is that participants were not given the option to complete interviews or questionnaires in their South Asian language.¹⁶ To address these gaps and include a broader section of the Sikh community, including those who are less comfortable with the English language, we conducted a bilingual English and Punjabi study exploring the mental health and associated factors affecting overall quality of life in AI Sikhs living in Central California, a major enclave for recent AI Sikh immigrants to California.

The current study utilizes quantitative data from a larger mixed-methods study, the Understanding Health, Emotional Responses, and Perceived Asian Indian Needs (HER-PAIN) study. Our aim for this article is to explore how sociocultural factors are related to mental health among AI immigrants.

METHODS

The Understanding HER-PAIN study took place in the Central California region during 2013-2014. The Central California region is among the more densely populated AI areas in the state; thus, this geographic area was an ideal location to conduct this exploratory research.^{6,7} A community-engaged research approach was used to guide the design, development, and implementation of the study. Qualitative results using grounded theory approach^{17,18} guided our conceptual model, which included possible sociocultural determinants of mental health among AI immigrants: (a) acculturation; (b) gender and power issues, including domestic violence; (c) religion; and (d) overall sense of well-being.

Recruitment and selection of participants

Using convenience sampling, participants were recruited to complete an anonymous survey during events at *Gurdwaras* (Sikh churches) in Fresno, California. To be eligible for the study, participants needed to self-identify as a Sikh AI, be proficient in either English or Punjabi, and be of 18 years and older. The study received institutional research board approval from Loma Linda University, as well as community approval from local clergy and other leaders.

Data collection process

To take part in the data collection process, research assistants from the Sikh community received training, including protection of human subjects' research training based on the National Institute of Health training modules. Community data collectors worked on both the qualitative and quantitative studies, adding to their trustworthiness in the community. On the basis of qualitative data collected in a first phase of the study, a survey was developed in English, aligning emerging themes with validated scales as well as questions that emerged directly from the qualitative work. While we identified Punjabi-validated scales whenever available, few such scales are available, requiring us to translate scales into Punjabi. Using rigorous back-translation methods, we evaluated the Punjabi items and scales with a small committee for accuracy, cultural appropriateness, and complete meaning.^{19,20} The survey was then pilot tested to confirm face validity and a

few minor adjustments made before distribution to the larger audience.

Measures

Demographics included participant age, years lived in the United States, marital status, family structure and living situation, education, employment, and place of birth. Participants self-selected to complete the surveys in either English or Punjabi. The following validated scales were also included:

- **Satisfaction With Life Scale:** The Satisfaction With Life Scale is a 5-item scale, rated (1) *strongly disagree* to (7) *strongly agree*, designed to assess overall life satisfaction as a whole with high reliability and validity.^{21,22} The items are summed; a score of 30 to 35 is very high, indicating very highly satisfied with life; a score of 25 to 29 is a high score, indicating high satisfaction; a score of 20 to 24 is an average score; a score of 15 to 19 indicates slightly below average life satisfaction; a score of 10 to 14 indicates dissatisfaction; and a score of 5 to 9 indicates extremely dissatisfied with life.²³ Previous studies have indicated reliability with Cronbach α s of 0.80 to 0.96.²⁴ In the current study, it was 0.96.
- **Acculturation, Habits, and Interests Multicultural Scale for Adolescents (AHIMSA):** AHIMSA is composed of 8 items with response options for all items: (a) the United States, (b) the country my family is from, (c) both, and (d) neither. The scale generates 4 scores ranging from 0 to 8 for Assimilation ("the United States" responses), Separation ("the country my family is from" responses), Integration ("both" responses), and Marginalization ("neither" responses). The scores are not summed; rather, the researcher is required to select the highest score as the participant's orientation. Previous studies using AHIMSA reported the Cronbach α of 0.84.²⁵ Although created for adolescents, this scale was chosen by community stakeholders for its brevity and as most culturally appropriate when compared with other acculturation scales. The current study using AHIMSA among AI adults has an acceptable Cronbach α of 0.70.
- **Short Attitudes Toward Women Scale:** The Short Attitudes Toward Women Scale has 15 items, with response options (a) *agree strongly*, (b) *agree mildly*, (c) *disagree mildly*, and (d) *disagree strongly*.^{26,27} This scale was subsequently further shortened to 12 items and validated among Turkish university students. Good reliability was demonstrated with a Cronbach α of 0.81 among this non-Western population; therefore, this is the version of the scale we used in the current study.²⁸ Seven items are reverse coded and summed. A high score indicates a profeminist, egalitarian attitude, whereas a low score indicates a traditional, conservative attitude. The Cronbach α for the current study was 0.88.
- **Domestic Violence Myth Acceptance Scale (DVMAS):** The DVMAS is an 18-item scale measuring the attitudes towards domestic violence with a 7-point Likert response option ranging from (1) *strongly disagree* to (7) *strongly agree* for the first 17 items and (1) *not at all* to (7) *entirely* for the last item. All 18 items are summed and then divided by 18 for an overall mean score. Higher scores indicate blaming the victim, exonerating the perpetrator, and minimizing the violence. This scale has performed well in divergent populations, including India, Japan, and Argentina (J. Peters, PhD, email communication, August 21, 2013). Similar to previous studies using the DVMAS with reported reliability of 0.81 to 0.88, the current study had a Cronbach α of 0.82.²⁹
- **Short form of the Brief RCOPE:** This is a 7-item version of the religious coping measure, using 6 items rated on a Likert-type scale ranging from (0) *not at all* to (3) *a great deal* for positive religious coping and negative religious coping. The seventh item measures the extent that religion is used to understand or deal with stressful situations, with response options (0) *not involved at all* to (3) *very involved*.³⁰ Similar to previous studies among non-Western cultures with religions other than Christianity reporting Cronbach α s of 0.60 to 0.75, the current study had a reliability of 0.71.³¹
- **Patient Health Questionnaire 9:** Patient Health Questionnaire 9 is a depression screener available in many languages including English and Punjabi, which contains 9 items with response options (0) *not at all*, (1) *several days*, (2) *more than half the days*, and (3) *nearly every day*. Scores are summed for a possible score of 0 to 27 and cut points of 5, 10, and 15 represent mild, moderate, and severe levels of depression, respectively. This brief questionnaire is reportedly a useful clinical and research tool with good reliability (Cronbach α = 0.86-0.89).^{32,33} The Cronbach α was 0.82 in the current study.
- **General Anxiety Disorder-7:** The General Anxiety Disorder-7 scale is available in both English and Punjabi and is a 7-item anxiety measure utilizing a 4-item Likert-scale response option ranging from (0) *not at all*, (1) *several days*, (2) *more than half the days*, and (3) *nearly*

every day. The items are summed for a possible score of 0 to 21, with 5, 10, and 15 indicating mild, moderate, and severe levels of anxiety, respectively, found useful for both clinical practice and research, with excellent reliability (Cronbach $\alpha = 0.92$).³⁴ In the current study, the Cronbach α was 0.87.

Data analysis

Quantitative data analyses ($N = 350$) were conducted using SPSS. Descriptive analyses included significance tests between sets of variables of interests: (a) between participants completing the survey in English versus Punjabi; (b) analysis of correlation of independent variables with depression (dependent variable) for model-building purposes; and (c) regression analysis with significant independent variables to more comprehensively explore depression.

RESULTS

Participants

The majority of the AI participants in our study ($N = 350$) were female (62%). Most participants completed the survey in English (76.6%), rather than Punjabi, were married (73.1%), and completed some college education or received a degree (74.2%). A larger portion of participants were born in India (83.7%), and the mean age of participants was nearly 42 years, and the average number of years in the United States was just under 19 years. Further descriptive details of all survey participants are given in Table 1, as well as a comparison of participants who self-selected English or Punjabi surveys. Significant differences were found between Punjabi and English survey takers. The Punjabi survey group respondents were significantly older than those who completed it in English (mean age = 48.72 vs 39.76 years, with a range of 66 and 70 years, respectively). Participants completing the survey in Punjabi had been in the United States approximately 5 years less, were more likely to be married, and living in a joint family, but had been married approximately 1 year less than English survey participants. Also, Punjabi survey participants were less likely to have been born in the United States or hold a degree.

Further comparison of participants by language preference

In addition to demographic comparisons, we compared all participants by language preference for the survey, on independent variables of interest (Table 2). The acculturation subscales indicate that English survey takers were significantly more assimilated to US culture and more likely to be integrated

(equally comfortable in both cultures), whereas Punjabi survey takers were significantly more likely to identify with Indian culture (indicating separation from US culture) and marginalization. No significant differences were found between groups for positive or negative religious coping; however, Punjabi survey takers reported significantly higher overall religiosity ($P < .01$).

English survey respondents had a significantly more egalitarian attitude toward women and were less accepting of domestic violence myths, whereas Punjabi respondents had more traditional attitudes toward women and greater acceptance of domestic violence myths. In terms of mental health, there were no significant differences between groups for general anxiety; however, the means for both English and Punjabi survey participants (5.29 and 6.13, respectively) are in the range of mild anxiety. In addition, Punjabi survey participants had a significantly higher mean on depression (4.67 vs 6.23, $P < .05$), with English participants falling in the reference range and Punjabi participants with a mean of greater than 5 and less than 10, indicating mild depression. The mean satisfaction with life score indicates high satisfaction among English survey participants (25.25) and slightly below average life satisfaction (16.13) for Punjabi survey participants, which was statistically significant ($P < .001$).

Correlates of depression

For the purposes of model building, we then conducted bivariable analyses to explore correlates of depression. Survey language preference, gender, negative religious coping, attitudes toward women, satisfaction with life, and anxiety were significantly correlated with depression (Table 3). These variables were then entered into a regression analysis.

Regression analysis

On the basis of the bivariate results, 2 separate models were analyzed (Table 4). Model 1 included the aforementioned significant correlates of depression, except anxiety. This model explained 10% of the variance in depression. Only negative religious coping remained significant. Model 2 included all of the aforementioned significant correlates of depression. With anxiety in the model, 63% of the variance in depression is explained but all other variables became insignificant.

DISCUSSION

Our analysis of AI Sikhs in California yielded 2 major findings: not surprisingly, language preference for the survey was related to acculturation, overall religiosity, attitudes toward women, and domestic violence myth acceptance, depression, and

TABLE 1. Descriptive Statistics of Participants

Characteristic	All (N = 350), n (%)	English (n = 268), n (%)	Punjabi (n = 82), n (%)
Gender			
Female	217 (62)	165 (61.6)	52 (63.4)
Male	133 (38)	103 (38.4)	30 (36.6)
Birth place			
India	293 (83.7)	216 (80.6)	77 (93.9)
United States	46 (13.1)	42 (15.7)	4 (4.9) ^a
Other ^b	9 (2.6)	9 (3.4)	0
Marital status			
Single	74 (21.1)	66 (24.6)	8 (9.8)
Married	256 (73.1)	189 (70.5)	67 (81.7) ^a
Widowed	7 (2.0)	3 (1.1)	4 (4.9)
Separated/divorced	6 (1.7)	6 (2.2)	0
Education			
No high school diploma	18 (5.1)	11 (4.1)	7 (8.5)
High school diploma	61 (17.4)	33 (12.3)	28 (34.1)
Some college	88 (25.1)	59 (22.0)	29 (35.4)
Bachelor's degree or higher	172 (49.1)	158 (59.0)	14 (17.1) ^c
Living in a joint family ^d			
Yes	187 (53.4)	120 (44.8)	67 (81.7) ^c
No	123 (35.1)	113 (42.2)	10 (12.2)
Employment ^e			
Employed	198 (56.6)	159 (59.3)	39 (47.6)
Unemployed	150 (42.9)	109 (40.7)	41 (50.0)
	M (SD)	M (SD)	M (SD)
Age, y	41.85 (15.38)	39.76 (14.92)	48.72 (14.96) ^c
Years in the United States	18.62 (10.78)	19.75 (10.63)	14.91 (10.50) ^c
Age married	24.04 (3.82)	19.45 (12.81)	26.05 (14.83)
Years married	21.90 (13.32)	24.63 (14.92)	23.83 (4.36) ^c

^a $P < .05$.^b Other countries of birth were included, but all participants self-identified as Asian Indian.^c $P \leq .001$.^d A joint family includes the parents of the husband living with the husband and the wife.^e Some participants who indicated they were unemployed farmed their own land or were otherwise self-employed.

satisfaction with life; for all of these variables, those who chose to complete the survey in Punjabi consistently had less desirable results. Of note, our sample had fairly low indications of mental health issues, despite the repeated findings in our qualitative work suggesting more severe mental health issues. However, it is important to note that both anxiety and depression may have been underreported because of the strong cultural stigma regarding mental health issues in the AI community.¹⁴ It may be that even anonymous self-reporting was intimidat-

ing in a culture that expects stoic self-management of emotions and stress through religious coping and the informal sociocultural support of family and the Punjabi Sikh community.³⁵ Punjabi Sikhs are generally known for success, resilience, and diligence. In this context, there is strong pressure to outwardly project these characteristics and not admit to "mental weakness."¹⁵ In addition, given the general lack of acceptance and awareness of mental health issues in AI communities, self-awareness may be lacking in most, and especially for those least acculturated

TABLE 2. Comparison of Participants Completing Survey in English Versus Punjabi

Characteristic	English (n = 268), M (SD)	Punjabi (n = 82), M (SD)
Assimilation	0.84 (1.50)	0.33 (0.92) ^a
Separation	2.42 (2.31)	3.95 (2.64) ^a
Integration	4.65 (2.38)	3.22 (2.42) ^a
Marginalization	0.09 (0.50)	0.33 (0.94) ^b
Positive religious coping	5.29 (2.34)	5.69 (2.47)
Negative religious coping	8.56 (2.74)	8.00 (2.61)
Overall religiosity	1.59 (0.73)	1.92 (0.97) ^c
Egalitarian attitudes toward women	31.95 (7.03)	26.89 (5.20) ^a
Domestic violence victim blaming/ perpetrator exoneration	3.41 (1.17)	3.99 (0.94) ^a
General anxiety	5.29 (5.31)	6.13 (5.10)
Depression	4.67 (5.10)	6.23 (5.86) ^b
Satisfaction with life	25.25 (7.75)	16.13 (8.76) ^a

^a $P \leq .001$.^b $P < .05$.^c $P < .01$.**TABLE 3. Bivariate Analysis (2-Tailed) (N = 293)**

Characteristic	Depression
Language preference	0.125 ^a
Gender	−0.134 ^a
Age	−0.056
Employed	−0.076
Years in the United States	−0.091
US born	−0.010
Academic degree	−0.095
Married	−0.046
Age married	0.040
Years married	0.032
Living with extended family	0.008
Assimilation	−0.012
Separation	0.015
Integration	−0.001
Marginalization	−0.012
Positive religious coping	0.049
Negative religious coping	−0.226 ^b
Overall religiosity	−0.008
Attitudes toward women	−0.134 ^a
Domestic violence myth acceptance	0.016
Satisfaction with life	−0.168 ^c
Anxiety	0.725 ^b

^a $P < .05$.^b $P \leq .001$.^c $P < .01$.

who are still struggling to balance their traditional expectations with wanting to fit into the new AI immigrant community.^{14,15,36} Indeed, while missing data were very low overall, the only exception (predominately in women) was failure to answer the depression and anxiety scales.

Depression, while bivariably associated with language preference, gender, negative religious coping, attitudes toward women, satisfaction with life, and anxiety, once explored in a multivariate context, was only significantly associated with negative religious coping and anxiety.

With respect to demographics, most participants were born in India and were first-generation immigrants. We see the choice of survey language variable as a proxy measure of acculturation, which is confirmed through the significant bivariate correlations with our validated measures of acculturation, which is in line with previous studies.³⁷

Taken as a whole, our results indicate that AI Punjabi immigrants are at moderate risk for mental health challenges, especially those who do not yet speak English well enough to be comfortable completing a survey in English. Although the observed higher depression and anxiety scores are in the moderate range, within the context of traditional community norms that discourage seeking help for mental health challenges, this, in turn, identifies a subgroup that likely will be further hampered in their adjustment to the United States.

This study expands and confirms similar AI studies conducted in the United States, which solely focused on AIs who were familiar enough with the

TABLE 4. Predictors of Depression Among Asian Indian Immigrants

	Depression			
	<i>B</i>	<i>SE B</i>	β	95% CI
Model 1 ($r^2 = 0.103$)				
Language preference	1.53	0.99	.12	−0.42 to 3.48
Gender	−1.13	0.71	−.11	−2.53 to 0.26
Negative religious coping	−0.32	0.13	−.16 ^a	−0.78 to −0.06
Attitudes toward women	−0.03	0.05	−.04	−0.14 to 0.08
Satisfaction with life	−0.06	0.05	−.11	−0.15 to 0.03
Model 2 ($r^2 = 0.632$)				
Language preference	0.43	0.69	.03	−0.89 to 1.74
Gender	0.07	0.48	.01	−0.87 to 1.00
Negative religious coping	−0.03	0.09	−.02	−0.20 to 0.14
Attitudes toward women	−0.08	0.04	−.09	−0.14 to 0.00
Satisfaction with life	−0.02	0.03	−.03	−0.08 to 0.04
Anxiety	0.78	0.05	.77 ^b	0.69–0.87

^a $P < .05$.^b $P \leq .001$.

English language to participate. We believe that this points to the need for researchers to offer immigrant populations a choice in language when conducting health or mental health studies. If this is not done, we can easily underestimate mental and social challenges that may be experienced by subgroups that are less connected to the US culture.^{16,38} In addition to the language findings, our study parallels the findings of others highlighting the interplay between sociocultural factors and mental health, among AIs in the United States and abroad.^{3,8,9,16,38–40} Similar trends as those previously published were clearly evident in this study, thus lending credence to a unique experience of mental health and acculturation for AI immigrant groups in the United States.

Previous studies on AI immigrants find gender to be a major factor for mental health needs, with females having higher rates of depression and anxiety, and while we found as well gender did not remain as a significant predictor of depression in a multivariable context.^{12,41} This may be explained by the higher levels of education and language comfort in this AI Punjabi immigrant group, which is known for its tight community connectedness. This sense of belonging may be a strong social asset acting as a protective mechanism for mental health issues despite their immigrant status. This finding is in line with previous work investigating the protective social factors for mental health among AI immigrants.⁴² On the contrary, we cannot dismiss the possibility that the same connectedness can also be a risk factor for satisfaction with life, as we found in our qualitative research that while many appre-

ciated the tight support of the community they also noted that this came at the cost of one's reputation and fear of judgment if one moved too far from community norms and expectations.^{17,43,44} Indeed, while those who completed the survey in English were in the low reference range, those who completed the survey in Punjabi were significantly lower on this measure, supporting our qualitative findings.

The results of the current study must be interpreted in the context of several limitations. The sample included adults from AI Sikhs at *Gurdwaras* in Central California, which limits generalizability. Nevertheless, the majority of Sikhs in the United States continue to attend their local *Gurdwaras* for both social and religious reasons. As Coward and Sidhu³⁵ mention that for Sikhs in the West, there is not a clear distinction between culture and religion.

Our study was cross-sectional; therefore, causal associations cannot be determined. For instance, the role of negative religious coping is not entirely clear. Given that gender (discrimination) and nonegalitarian attitudes toward women correlate with depression, it is possible that cognitive dissonance caused by these experiences in this Sikh religion where gender equality is espoused engenders negative religious coping. Or, if they are already depressed, Sikhs may default to negative religious coping due to a sense of others in the community seeing them not adequately managing their stressors. Therefore, the relationship between negative religious coping and depression represents the proverbial chicken or the egg dilemma.

In addition, while several important sociocultural correlates of depression were noted, adding anxiety to the regression model obliterated other predictors of depression. A previous study suggested that generalized anxiety (as measured by the General Anxiety Disorder-7 scale) frequently co-occurred with depression, but factor analysis confirmed that anxiety and depression were distinct dimensions and had differing, independent effects on functional impairment and disability.³⁸ Similarly, in our study, factor analysis confirmed anxiety and depression as distinct factors; therefore, future research should examine anxiety as its own construct.

To the best of our knowledge, the Punjabi versions of the DVMAS and the Attitudes Toward Women Scale from the current study are the first instruments of their kind to be made available and tested in the Punjabi language. In addition, this is one of the first studies to quantitatively investigate language preference with respect to sociocultural determinants and mental health in the AI immigrant population in the United States. Although other research has focused on similar topics with AIs in the United States, this study adds to and enhances existing literature by exploring the interplay of sociocultural factors and mental health.

CONCLUSION

We feel that offering these surveys to our participants in both English and Punjabi allowed us to more fully explore mental health issues in a population that is generally seen as highly resilient and not in need of special programs due to “model minority” categorization.¹³ While we found low levels of depression overall, we were able to identify a subgroup with significant needs. Indeed, we feel that unless mental health concerns are more generally accepted by the community overall, those with mental health needs will not seek or participate in interventions unless community norms regarding mental health within this close-knit community change. The protective factors we found within this community are an opportunity to support such changes from within, as long as the community is open to facing the needs as a reality.

Culturally isolated subgroups, such as our respondents who chose to complete the surveys in Punjabi, are especially important to understand, given that research has shown that poor mental health, including feelings of not belonging and feeling isolated, is associated with poor health outcomes.^{36,40} We hope health care professionals and health educators will use our study as a further encouragement to take into account the sociocultural context of mental health among AIs to better

serve them.⁴ Clearly, further study is needed to expand our understanding of the complex interplay of sociocultural factors and mental health among AIs in the United States to inform more effective practice and policy related to mental health.

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