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Depression, Anxiety, and Suicidal Ideation Among Chinese Americans:

A Study of Immigration-Related Factors

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Abstract

The aim of this study was to identify anxiety, depression, and suicidal ideation disparities among Chinese Americans and how immigration-related factors affected the outcomes. We tried to explain the differences as a function of the Chinese culture. Data were derived from the National Latino and Asian American Study, the first national epidemiological survey of these populations in the United States. We used only the Chinese sample (N = 600) and focused on depressive disorder, anxiety disorder, and suicidal ideation. The United States–born Chinese and those Chinese who immigrated to the United States at 18 years or younger were at higher risk for lifetime depressive or anxiety disorders or suicidal ideation than were their China-born counterparts who arrived in the country at or after 18 years of age. For Chinese Americans, immigration-related factors were associated with depression and anxiety disorders and suicidal ideation. The higher prevalence of these disorders might be attributed to the psychological strains experienced by those who are at higher risk of cultural conflicts.

Keywords

Depression; suicide; Chinese Americans; immigration; culture

Immigration to United States has increased substantially over the past three decades, and about 26.5% of the immigrants are from Asia now. Asian Americans represent an important group, accounting for 3.6% of the US population, and large numbers of them have radically

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DISCLOSURES
The authors declare no conflicts of interest.

changed the racial and ethnic profile in the United States. Chinese American is the largest ethnic group among the Asian- American populations in the United States, with a population of 3.8 million (US Census Bureau, 2009).

For immigrants, one of the major challenges was to adapt to a new cultural setting. It is very difficult to learn and achieve in a new language while simultaneously dealing with developmental issues such as forming a sense of ethnic identity, assimilating to a new culture, relating to native residents and peers, and learning new role relations (Yeh, 2003; Yeh and Hwang, 2000). It is also reported that Asian Americans whose families have lived in the united States for many generations continue to be viewed as perpetual foreigners (Chung et al., 2008). In addition, immigrants are frequently stereotyped by the media, raising mainstream concerns regarding job competition and improper use of public resources, and these factors add more difficulties during the period for immigrants to live in a new country. Research has indicated that immigration can have detrimental effects on one's mental health (Chung et al., 2008). Immigrants may be unable to live in a new culture or adapt to new roles. Immigrants may also have a lot of expectations of what their lives will be like when they move to the United States, but the reality is usually not so satisfactory. Thus, immigrants may experience disappointment, resentment, depression, anger, and culture shock in their lives in a new county. These problems may have adverse effects on immigrants' mental health, and they were prone to have anxiety, depression disorders, and suicidality when they were in a new cultural setting (Kposowa et al., 2008; Takeuchi et al., 2007).

Immigration-related factors are associated with anxiety, depression, and suicide, but the direction of the association has been inconsistent (Kposowa et al., 2008; Sue et al., 1995). Researchers found that foreign-born Asian Americans had significantly lower risk for depression and anxiety disorders in comparison with United States–born Asian Americans (odds ratio [OR], 0.16–0.59) (Breslau and Chang, 2006), but other studies found that the opposite is true (Mental Health: Culture Race and Ethnicity, 2001). The age at which Asians immigrate to the United States is strongly associated with major depression. For example, one of the earlier studies found that Chinese immigrants who immigrate after 20 years of age are nearly 1.5 to 3.0 times more likely to experience major depression than are those who immigrate before 20 years of age (Takeuchi et al., 1998).

Acculturation examines the process of cultural adjustment and adaptation, and it is a critical theory to understand the mental health issues among immigrants (Chung et al., 2008). Specifically, acculturation refers to the manner in which individuals confront two or more cultures. The acculturation process is determined by how individuals manage maintaining or letting go of their national culture in light of conflicting cultural values (Leu et al., 2008). Immigration-related factors, including nativity, age at immigration, and English proficiency, are important factors for acculturation. Furthermore, different Asian countries have diverse cultures, so it is necessary to study Chinese immigrants, the largest group of Asian immigrants. Currently, there are few studies focusing on Chinese Americans, so this present study tried to explore the association between immigration-related factors and mental health among Chinese immigrants.

METHODS

Data for the study were from the National Latino and Asian American Study (NLAAS), which was a nationally representative community household survey that estimated the prevalence of mental disorders and rates of mental health service utilization by Latinos and Asian Americans in the Unites States. The sampling was conducted in three stages: core sampling, high-density supplemental sampling, and recruitment of secondary respondents. The sampling design and procedures have been documented by the NLAAS team (Alegria et al., 2004a; Heeringa et al., 2004; Takeuchi et al., 2007). The overall NLAAS sample consisted of 2554 Latino respondents and 2095 Asian American respondents. Data collection took place between May 2002 and November 2003. To be eligible to complete the NLAAS, respondents were required to be 18 years or older; living in the noninstitutionalized population of the coterminous United States or Hawaii; and of Latino, Hispanic, or Spanish descent or of Asian descent. For more details regarding the research design, please refer to previous publications with the NLAAS data (Alegria et al., 2004a, 2004b; Pennell et al., 2004).

The aims of the current study were to describe the lifetime and 12-month prevalence of depression, anxiety, and suicidal ideation among Chinese Americans and assess the associations between immigration-related factors and the depression and anxiety disorders, as well as suicidal ideation.

Sampling

For the current study, we used only Chinese Americans (N = 600) in the database. The selection was made with a variable in the database that reflected race and ancestry information. The sample, 284 (47.33%) men and 316 (52.67%) women, ranged from 18 to 85 years of age at the time of interview, with a mean of 41.59 years. The dataset available for this study does not allow the weighting analysis of the Chinese sample, although the Asian samples were weighted in the original dataset.

Measures

The ethnicity of the respondents was based on individual self-report on membership in an Asian American group. A total of 600 individuals reported their membership in the Chinese group. The Chinese version of NLAAS instruments was translated from the English language using standard translation and back-translation techniques. However, about 47% of the interviews with the Chinese respondents were conducted in English (Takeuchi et al., 2007).

Lifetime and 12-month diagnoses of depression and anxiety disorders were measured with the World Health Organization Composite International Diagnostic Interview (The World Mental Health Survey Consortium, 2004). This diagnostic interview was used to assess the presence of psychiatric disorders with criteria from the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM-IV*). Because of the highly skewed distribution of the number of mental disorders, the presence of any mental disorder was treated as a dichotomous variable (0 = none; 1 = any) rather than constructed as total count of disorders.

In other words, any disorder was based on the diagnosis of at least one disorder in any one of the two given categories. The two categories of mental disorders we studied as the dependent variables were a) depressive disorders (major depressive disorder or dysthymia) and b) anxiety disorders (panic disorder, agoraphobia without panic, social phobia, generalized anxiety disorder, or posttraumatic stress disorder). Lifetime and 12-month suicidal ideation was assessed by the following question in this interview: “Have you ever seriously thought about committing suicide (in the past 12 months)?” It is a standalone question administered, instead of being imbedded in the depression measures.

For immigration-related variables, this study focused on nativity status, English-language proficiency, and the age at time of immigration. Nativity status was a dichotomous measure with 0 = United States born and 1 = China born. English language proficiency was assessed with this question: “How well do you speak English?” Respondents were categorized into four groups: excellent, good, fair, and poor. Age at time of immigration was also a ranking order variable in four categories: 12 years or younger, between 13 and 17 years, between 18 and 34 years, and 35 years or older (n = 100). We collapsed them into two groups in the following analyses.

Analyses

We used Stata Software 10.0 to analyze the data (StataCorp, 2009). We did not use the survey models in Stata for weights and sample design. Instead, the 600 Chinese Americans were simply taken out as a subsample for this current study. We first computed the prevalence rates (lifetime and 12-month prevalence) for the two types of disorders and suicidal ideation and our selected immigration-related variables such as nativity, English language proficiency, and age at time of immigration. Second, we calculated ORs from logistic regression analyses to examine the association between various immigration-related factors and mental disorders: a) depressive disorder, b) anxiety disorder, and c) suicidal ideation. These three variables were chosen for analyses out of so many disorders available in the data not only because of our particular interests but also because of their significant variation on the targeted independent variables. The ORs were calculated also for lifetime and 12-month prevalence respectively. All the OR analyses were conducted separately controlled for age.

RESULTS

As shown in Table 1, approximately 80% of the respondents in the sample were born in China. About 60% of the Chinese immigrants arrived in the United States during their adulthood. Less than half of the respondents rated their English-speaking abilities as excellent or good, whereas more than half of them indicated that their English proficiency was fair or poor. In addition, Table 1 also presents the prevalence of depressive disorder, anxiety disorder, and suicidal ideation of the sample for lifetime and the past 12 months.

The lifetime prevalence rates of depressive disorder and suicidal ideation among women were 14.56% and 13.90%, respectively, higher than those of men. Similarly, in the past 12 months, more women had depressive disorder or anxiety disorder, at the rate of 6.96% and 7.59%, respectively. Married (or cohabiting) immigrants had a lower rate of depressive

disorder and anxiety disorder in both lifetime and the past 12 months, as well as lifetime suicidal ideation (all p values <0.05). No significant differences were found in the prevalence rates of above mental disorders and suicidal ideation among immigrants with different education level and different English language proficiency (all p values >0.05).

For United States–born immigrants, lifetime prevalence rates of depressive disorder, anxiety disorder, and suicidal ideation were much higher compared with China-born immigrants, and their rates were 23.20% (*vs*. 8.25% for China born), 17.06% (*vs*. 8.03%), and 18.40% (*vs*. 8.88%), respectively. Comparing those who immigrated to the United States at different ages (<18 *vs*. Q18 years), the lifetime prevalence rates of depressive disorder (17.95% *vs*. 7.14%), anxiety disorder (16.24% *vs*. 6.04%), and suicidal ideation (17.52% *vs*. 6.59%) were much higher. Similar results or trends were found on above 12-month mental disorders and suicidal ideation: United States–born immigrants and those with young age at immigration had higher rates.

As shown in Table 2, after controlling the confounding effects of age, marital status, education level, and other related factors, United States–born immigrants had 2.64 times more risk for lifetime depressive disorder than China-born immigrants, and those with young age (<18 years old) at immigration also had 2.43 and 2.60 times more risk for lifetime anxiety disorder and suicidal ideation, respectively. But for 12-month depressive disorder and anxiety disorder, there were no statistical differences between United States–born and China-born immigrants and between immigrants at different immigration age groups, after controlling confounding factors (Table 3).

DISCUSSION

This study has complemented findings from the NLAAS on various ethnic Asian American groups and provided detailed analyses and interpretations of how immigration-related factors affect Chinese Americans. This study found two important immigration factors that may play an important role on immigrants' mental health: age at the time of immigration and nativity, and these results may advance the current knowledge.

Regarding age at time of immigration, it is found that Chinese immigrants who arrived in the United States at 18 years or older had lower rates of lifetime anxiety disorder and suicidal ideation. The same is true for those foreign-born Asian Americans who arrived in the United States as adults (Breslau and Chang, 2006). Similar observations have been documented for Mexican American immigrants. Risks for suicidal ideation and attempt are higher among Mexican-born immigrants who arrived in the United States at 12 years or younger and United States–born Mexican Americans than among Mexican Americans who arrived in the United States at older than 12 years and those who were not born in the United States (Borges et al., 2009).

The mental health disparities among Chinese Americans related to their immigration factors suggest that acculturation and social forces may play an important role in the psychological wellbeing of the Chinese immigrants to the United States. Like most other ethnic minority groups in the United States, Chinese Americans socialize their younger generations by

pushing the Chinese culture (values and norms) in the family and community life. However, at the same time, the young children are acculturated with American cultural values and social norms. The Chinese and American cultures that the young children have adopted at home and at school often conflict. Individuals are likely to experience cultural conflicts or strains that may lead to frustration and even hopelessness, especially when the two conflicting values or norms are both internalized as important and desirable (Zhang, 2005, 2010). For an individual who had immigrated to the United States as an adult, with social values of the birth country implanted and the worldview established, the new culture of the immigration country might be difficult to be internalized. On the other hand, younger people are found to be easier than the older people to be socialized into a new culture, while they are also easily socialized at home and the ethnic community. When two culture values conflict, those people who have both cultures internalized are likely to experience psychological strains that may lead to frustration, anxiety, and even depression (Zhang, 2010).

The United States–born Chinese Americans were more likely to have lifetime depressive disorders than were the China-born individuals because they may have generally experienced more cultural strains than the immigrants have. For example, those who were born in the United States may have had higher expectations for future and life than those who immigrated to the new country later, but the two groups experienced similar cultural strains. Again, these cultural conflicts can be consequence of two competing types of cultural values and social norms internalized in an individual through different socializations, and the psychological strains can lead to frustration and hopelessness (Zhang, 2005; Zhang and Lester, 2008).

In a recent study, Hwang and Myers (2007) examined psychosocial risk factors in predicting major depression in Chinese Americans and found that social conflicts and traumatic life events moderated the effects of negative life events in increasing risk for major depression. In addition, level of acculturation moderated the effects of recent negative events in increasing risk, but only for those who were more highly acculturated (Hwang and Myers, 2007). Acculturation, as a mainstream culture value and norm adaptation, may have increased value conflicts for a young immigrant who is also socialized at home with the parental culture. In another study, Asian American college students were found to have increased social anxiety in comparison with their European American counterparts, and this observation was explained by the students' emotional attunement and cultural double bind (Lau et al., 2009). We may understand the double bind as double values or value conflicts, and those who had the parental culture values internalized and then had to deal with the American culture at school were likely to experience the anxiety. As the authors stated, "the experience of being a minority in the American cultural environment may place strains on Asian Americans which tax their capacity for intercultural social interactions and emotion recognition" (Lau et al., 2009). However, a study of 1747 Chinese Americans (aged 18–65 years) in Los Angeles indicated that Chinese Americans' psychological and psychiatric symptoms tended to be related to somatization, and the Chinese somatizers tended to perceive themselves with poor health and used both Western and indigenous Chinese medicine. The researchers concluded that somatization might be a stress response with regard to increased distress severity and psychosocial stressors rather than a cultural

response to express psychological problems in somatic terms (Mak and Zane, 2004). In sum, all these studies did not have a chance to look at the effect of the parental culture value internalization measured by the age at the time of immigration.We studied the effect of the age at the time of immigration on the Chinese immigrants' mental status.

However, immigration factors were not significantly related with 12-month depressive and anxiety disorders after controlling the effects of marital status and other demographic factors. Maybe it was false-negative because of the small sample size. Thus, it is necessary to include more samples in future studies.

There were several limitations of the current study. The small sample size of this study may cause false-negative results. Variables collapsed into two categories may lose a lot of information, although this strategy amplified the cell size of each group. The unweighted data may not represent the real Chinese immigrants in United States, so the sample may be biased. As acknowledged by the principal investigators of the NLAAS project (Takeuchi et al., 2007), another limitation of the data lies in the psychiatric diagnoses. In the data collection protocol, they focused primarily on Western expressions of psychiatric disorders as defined by *DSM-IV*. The strength of this strategy was its ability to compare mental disorders among people from other areas and Americans with the same measure. The instrument may have underestimated rates of the problem, especially if immigrants expressed their problems in unique ways that were not identified by *DSM-IV*. Third, the limited data on the circumstances under which the immigration occurred do not allow for an examination of how these factors may be linked to mental disorders. For example, refugees or those individuals under political pressure from China may be at a greater risk for mental disorders than are other immigrants. Finally, it would be advantageous if future research compares Chinese Americans with other Asian Americans in the NLAAS data and also compares Chinese Americans with other racial and ethnic groups in the United States by combining the NLAAS and the National Comorbidity Survey Replication and the National Survey of American Life datasets.

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TABLE 1

Lifetime and 12-Month Prevalence of Depression, Anxiety, and Suicidal Ideation by Immigration-Related Demographic Factors for Chinese Americans (N = 600)

			Depressive Disorder				Anxiety Disorder				Suicidal Ideation			
			Lifetime		12-Mo		Lifetime		12-Mo		Lifetime		12-Mo	
	n	%	%	*p* (χ^2)	%	*p* (χ^2)	%	*p* (χ^2)	%	*p* (χ^2)	%	*p* (χ^2)	%	*p* (χ^2)
Age, mean (SD)	41.59 (0.57)													
Sex														
Male	284	47.33	7.74	0.009 (6.90)	3.87	0.098 (2.75)	9.15	0.513 (0.43)	4.23	0.083 (3.01)	7.39	0.010 (6.60)	0.70	0.128 (2.31)
Female	316	52.67	14.56	6.96	10.76		7.59	13.9	2.21					
Marital status														
Married/cohabiting	414	69.00	6.52	<0.001 (30.77)	2.42	<0.001 (24.45)	8.21	0.029 (4.74)	3.62	<0.001 (13.38)	7.73	<0.001 (13.32)	0.97	0.11 (2.58)
Others	186	31.00	22.04	12.37	13.98		11.29	17.74	2.69					
Education level														
<16 yrs	298	49.67	9.40	0.137 (2.21)	4.70	0.392 (0.73)	9.73	0.828 (0.05)	6.38	0.700 (0.15)	10.07	0.549 (0.36)	1.01	0.323 (0.98)
≥16 yrs	302	50.37	13.25	6.29	10.26		5.63	11.59	1.99					
Nativity[a]														
United States born	125	20.90	23.20	<0.001 (21.94)	10.40	0.007 (7.22)	17.60	0.002 (10.02)	11.20	0.006 (7.50)	18.40	0.002 (9.25)	4.00	0.010 (6.64)
China born	473	79.10	8.25	4.23	8.03		4.65	8.88	0.85					
English language proficiency[a]														
Fair/poor	337	56.35	13.06	0.140 (2.18)	6.82	0.112 (2.53)	11.87	0.062 (3.48)	7.42	0.064 (3.43)	11.87	0.372 (0.80)	2.67	Dropped
Excellent/good	261	43.65	9.20	3.83	7.28		3.83	9.58	Dropped					
Age at time of immigration[a]														
<18 yrs	234	39.13	17.95	<0.001 (16.50)	8.97	0.003 (8.80)	16.24	<0.001 (16.40)	9.83	0.002 (9.86)	17.52	<0.001 (17.56)	2.56	0.088 (2.91)
≥18 yrs	364	60.87	7.14	3.30	6.04		3.57	6.59	0.82					

"Dropped" refers to rates not included because no positive case was found in this group.

[a]Missing values are not included in the analyses.

TABLE 2

Odds Ratios With 95% Confidence Intervals for the Associations Between Immigration-Related Demographic Factors and Lifetime Depression, Anxiety, and Suicidal Ideation for Chinese Americans (N = 600)

	Lifetime Depressive Disorder	Lifetime Anxiety Disorder	Lifetime Suicidal Ideation
Sex			
Female	2.14** (1.21–3.76)	1.32 (0.76–2.30)	2.14** (1.22–3.77)
Male	Referent	Referent	Referent
Marital status			
Married/cohabiting	0.31*** (0.18–0.56)	0.81 (0.44–1.49)	0.61 (0.34–1.09)
Others	Referent	Referent	Referent
Education level			
<16 yrs	0.55* (0.31–0.99)	1.00 (0.56–1.80)	0.83 (0.47–1.46)
≥16 yrs	Referent	Referent	Referent
Nativity			
United States born	2.64** (1.23–5.70)	1.20 (0.58–2.51)	1.34 (0.65–2.76)
China born	Referent	Referent	Referent
English language proficiency			
Fair/poor	1.53 (0.79–3.11)	1.00 (0.50–2.04)	1.70 (0.86–3.37)
Excellent/good	Referent	Referent	Referent
Age at time of immigration			
<18 yrs	1.33 (0.58–3.04)	2.43* (1.10–5.34)	2.60* (1.19–5.67)
≥18 yrs	Referent	Referent	Referent

Age was controlled for in the regression.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

TABLE 3

Odds Ratios With 95% Confidence Intervals for the Associations Between Immigration-Related Demographic Factors and 12-Month Depression and Anxiety for Chinese Americans (N = 600)

	12-Mo Depressive Disorder	12-Mo Anxiety Disorder
Sex		
Female	1.89 (0.88–4.08)	2.05 (0.97–4.35)
Male	Referent	Referent
Marital status		
Married/cohabiting	0.24** (0.10–0.55)	0.37* (0.17–0.78)
Others	Referent	Referent
Education level		
<16 yrs	0.72 (0.33–1.56)	1.10 (0.52–2.33)
≥16 yrs	Referent	Referent
Nativity		
United States born	1.67 (0.63–4.44)	1.12 (0.44–2.88)
China born	Referent	Referent
English language		
proficiency Fair/poor	1.08 (0.42–2.79)	0.70 (0.27–1.79)
Excellent/good	Referent	Referent
Age at time of immigration		
<18 yrs	1.17 (0.40–3.46)	1.81 (0.64–5.10)
≥18 yrs	Referent	Referent

Age was controlled for in the regression.

* $p < 0.01$.

** $p < 0.001$.