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Lifetime Suicidal Ideation and Suicide Attempts in Asian Americans

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Few studies have examined the role of culturally relevant factors in suicidal behavior among Asian Americans. Using the National Latino and Asian American Study (NLAAS) (Alegria et al., 2004; Heeringa et al., 2004), the current study examined the role of culturally related variables (family conflict, perceived discrimination, and ethnic identity) on suicidal ideation and suicide attempts in a nationally representative sample of 2,095 Asian Americans. Important covariates were sociodemographic characteristics (gender, age, marital status, years of education, household poverty, and nativity status), depressive and anxiety disorders, and number of chronic conditions. Gender related correlates were also explored. The lifetime prevalence of suicidal ideation and attempts was 8.8% and 2.5%, respectively. Female gender, family conflict, perceived discrimination, and the presence of lifetime depressive or anxiety disorders were positively correlated with suicidal ideation and attempts. A high level of identification with one's ethnic group was associated with lower rates of suicide attempts. Among Asian men, but not women, the presence of chronic medical conditions was associated with suicidal ideation. Findings highlight the contributions to suicide risk of cultural factors and gender differences in Asian Americans.

Keywords: suicide, family conflict, discrimination, ethnic identity, Asian Americans

Understanding risk factors for suicide is the first step in developing suicide prevention and intervention strategies for Asian Americans. Although Asian Americans are one of the most rapidly growing ethnic groups in the United States, few empirical studies on suicide have been conducted on this population. It has been argued that Western theories and findings of suicide may not be generalizable to ethnic minorities in general and Asian Americans in particular. Leenaars (2008) and Lester (2008) highlighted the need for understanding suicide beyond the factors at the individual level. In recent years, researchers have proposed the use of the ecological model for understanding suicide, which emphasizes that behaviors are influenced by the interplay of individual, interpersonal, social, and cultural levels (Bronfrenbrenner, 1979). The model was first applied to understand child abuse, and most recently, it has been effectively applied to the study of suicide in Latina youths and African American adults (Kaslow et al., 2005; Zayas, Lester, Cabassa, & Fortuna, 2005). Demographic characteristics and psychopathology may contribute to suicidal behavior, but behaviors can also be influenced by interpersonal relationships in specific settings (e.g., family) and broader social contexts (e.g., workplaces and neighborhoods). Further-

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more, some risk factors for suicide may be ethnically salient depending on cultural values, beliefs, and norms. Thus, a deeper understanding of suicide in Asian Americans beyond demographics and psychopathology is essential.

Current Knowledge on Suicide in Asian Americans

To date, most of what we know about suicide in Asian Americans is based on national statistics on suicide deaths and studies conducted among college students. Suicide is the ninth leading cause of death among Asian Americans across all age groups, compared to tenth among White Americans (Centers for Disease Control and Prevention, 2006). Previous research has suggested that Asian American college students are more likely to think about suicide and attempt suicide than European American students (Kisch, Leino, & Silverman, 2005; Muehlenkamp, Gutierrez, Osman, & Barrios, 2005). Moreover, Asian Americans are less likely to seek professional help for psychological distress, and they are less likely to self-disclose suicidal thoughts without the clinician's prodding. These individuals have been referred to as "hidden ideators" (Morrison & Downey, 2000). There are also within-group variations in suicide rates among Asian Americans. For example, Japanese Americans had higher suicide rates than Chinese Americans and Filipino Americans (Lester, 1994). These studies are limited by small sample sizes and a focus on suicide deaths, to the exclusion of suicidal ideation and suicide attempts, which are important targets of prevention (Leong, Leach, & Gupta, 2008; Mann et al., 2005).

Suicidal thoughts and attempts are among the strongest risk factors for completed suicide. Suicide attempts are a major cause of injury, emergency treatment, or hospitalization carrying high-cost burden (McCaig & Nawar, 2006). A recent study examined the sociodemographic correlates of suicidal thoughts and behavior in Asian American respondents in the National Latino and Asian American Study (NLAAS) (Alegria et al., 2004; Heeringa et al., 2004), the largest nationally representative household survey on mental health conducted with Asian Americans (Duldulao, Takeuchi, & Hong, 2009). The authors found that U.S.-born Asian American women were at higher risk for suicidal ideation than U.S.-born men and immigrant Asian men and women. Although the study advanced the current knowledge on suicide in Asian Americans, it did not adjust for the influence of depressive and anxiety disorders, which are modifiable and more prevalent among U.S.-born Asian Americans compared to foreign-born Asian Americans (Hirschfeld & Russell, 1997; Takeuchi et al., 2007). To address this limitation, the present study used data from the NLAAS to examine the sociodemographic, psychiatric, and culturally relevant correlates of lifetime suicidal ideation and suicide attempts in four Asian ethnic groups.

Culturally Relevant Considerations

Family Conflict

Family conflict may affect suicidal behavior regardless of ethnic background. However, the impact of family conflict on suicide may be particularly salient in Asian cultures due to the great emphasis on interdependence and family cohesion (Leong et al., 2008). In a study of Asian American outpatient youths, findings suggested that less acculturated youths were at higher risk for suicidal behavior under conditions of high parent–child conflict compared to their more acculturated peers. It was speculated that less acculturated youths might hold more collectivistic values and have higher levels of distress when experiencing family conflict (Lau, Jernewall, Zane, & Myers, 2002). Although understanding the mechanism behind the association between levels of acculturation and family conflict is beyond the scope of the current study, Lau et al.'s (2002) findings demonstrated the role of culture as a contextual factor in influencing the relevance of stressors for predicting suicidal behavior.

Perceived Discrimination

Although discrimination has traditionally been viewed as a problem that affects mostly African Americans and Latinos, recent reports have documented that Asian Americans experience discrimination in different social settings (Committee of 100, 2001; Turner, Ross, Bednarz, Herbig, & Lee, 2003). There is emerging evidence to suggest that perceived discrimination in itself serves as a correlate of mental

health problems among Asian Americans. For example, self-reported racial discrimination was independently associated with greater odds of having any 12-month *Diagnostic and Statistical Manual of Mental Health* (4th ed., *DSM–IV;* American Psychiatric Association) psychiatric disorder after controlling for other stressors (Gee, Spencer, Chen, Yip, & Takeuchi, 2007). In a study of Asian American and Latino college students, perceived discrimination was associated with negative mental health outcomes, including suicidal ideation (Hwang & Goto, 2008).

Ethnic Identity

Ethnic identity broadly refers to an individual's sense of belonging with other members of the ethnic group (Phinney, 1990). Studies conducted on the relationship between ethnic identity and mental health outcomes in Asian American adolescents and college students have produced mixed findings. Some research has shown that high levels of ethnic identity were associated with high self-esteem and less problem behaviors (Shrake & Rhee, 2004; Tsai, Ying, & Lee, 2001) but others found that a high level of identification with one's culture was positively associated with suicidal ideation (Kennedy, Parhar, Samra, & Gorzalka, 2005). It was speculated that those who were more identified with one's ethnic group might experience more difficulties adjusting to the mainstream society. However, it is unclear whether the positive association between ethnic identification and suicidal behavior can be applied to Asian American adults.

Current Study

The present study examined the influence of culturally related variables (family conflict, perceived discrimination, ethnic identity) on suicidal ideation and suicide attempts in a nationally representative sample of Asian Americans. Important covariates were sociodemographic characteristics, depressive and anxiety disorders, and number of chronic conditions. Because some correlates of suicide may be gender related, gender-stratified analyses were conducted (Bolton, Belik, Enns, Cox, & Sareen, 2008; Fairweather, Anstey, Rodgers, Jorm, & Christensen, 2007). Identification of correlates of suicidal ideation and suicide attempts is an important first step in the design of broad-based prevention efforts and can be of practical use to mental health providers to identify Asian American patients at risk for suicide.

Method

Sample and Procedures

The data were taken from the NLAAS, the first nationally representative community household survey of Asian Americans and Latinos conducted between May 2002 and December 2003. Respondents were 18 years or older from the noninstitutionalized population of the 50 states and Washington, DC. The present study focused on the Asian American respondents only. The NLAAS used a stratified area probability sample design that has been described previously (Alegria et al., 2004; Heeringa et al., 2004). In brief, the sampling procedure included the following three phases: (1) core sampling, in which primary sampling units (i.e., metropolitan statistical areas or county units) and secondary sampling units, formed from contiguous groupings of Census blocks, were selected using probabilities proportionate to size, from which housing units and household members were sampled; (2) high-density supplemental sampling was used to oversample Census block groups with greater than 5% density of target ancestry groups (for the Asian American subsample: Chinese, Filipino, Vietnamese), individuals of Asian ancestry who did not belong to the target groups under which these geographical areas were classified were still eligible to participate; and (3) second-respondent sampling was used to recruit participants from households in which one eligible member had already been interviewed. Weighting corrections were developed to take into account the joint probabilities for selection under the three components of the NLAAS sampling design.

A total of 2,095 Asian Americans (1,611 primary and 484 secondary respondents) were recruited. The ethnic breakdown was as follows: 600 Chinese, 508 Filipino, 520 Vietnamese, and 467 other Asians. The "other Asian" category included individuals who self-identified as Japanese ($n = 107$), Korean ($n = 81$), Asian Indian ($n = 141$), and other ($n = 138$).

The respondents ranged from 18 to 95 years of age, with a mean of 41.2 years ($SD = 14.8$).

Measures

The NLAAS instruments were available in English, Cantonese, Mandarin, Tagalog, and Vietnamese. The instruments went through a rigorous process of translation and adaptation to ensure cultural equivalence (see Alegria et al., 2004, for detailed translation procedures). Interviews were administered by trained bilingual interviewers with linguistic and cultural backgrounds similar to those of the respondent. Face-to-face interviews were conducted with respondents in the core and high-density samples. Telephone interviews were conducted with secondary respondents. The overall weighted response rate for the Asian sample (i.e., primary and secondary respondents) was 65.6% (Alegria et al., 2004; Heeringa et al., 2004).

Suicidal ideation and behavior. Respondents were screened into the suicide section of the World Health Organization Composite International Diagnostic Interview (WMH–CIDI; Kessler & Üstün, 2004) if they responded affirmatively to the question "Have you ever seriously thought about committing suicide?" Those responding affirmatively were then asked if they had ever made plans to commit suicide ("Have you ever made a plan for committing suicide?") and if they had ever attempted suicide ("Have you ever attempted suicide?"). Respondents positively endorsing any of these three questions were also asked to provide the age at which they first experienced suicidal ideation, made a plan for committing suicide, or attempted suicide. Finally, respondents who had attempted suicide were asked to endorse one of the following three statements with respect to the most recent attempt: (1) "I made a serious attempt to kill myself and it was only luck that I did not succeed"; (2) "I tried to kill myself, but knew that the method was not fool-proof"; and (3) "My attempt was a cry for help. I did not intend to die." These suicide-related questions have provided the basis for data on the prevalence and correlates of suicidal ideation and suicidal attempts in the U.S. general population (Kessler, Berglund, Borges, Nock, & Wang, 2005; Kessler, Borges, & Walters, 1999; Nock & Kessler, 2006).

Family conflict. The Family Conflict Scale consists of five items measuring respondents' frequency of cultural and familial conflict around values and goals, with higher scores indicating more family conflict. It is a subscale of the Hispanic Stress Inventory (Cervantes, Padilla, & De Snyder, 1990). Response ratings were made on a 3-point scale ranging from 1 (*hardly ever or never*) to 3 (*often*). The average score was computed as the sum of the items divided by the number of items answered. Example items include "Because you have different customs, you have had arguments with other members of your family" and "Your personal goals have been in conflict with your family." The scale had a Cronbach's alpha of .76 with the current sample.

Ethnic identity. Four items measuring respondents' ethnic identity were adapted from the National Comorbidity Survey Replication (NCS-R; Kessler et al., 2003). Respondents were first asked to indicate which specific ethnic subgroup best described their background (e.g., Chinese, Vietnamese). Then, they answered the four items measuring the extent to which they identified with and spent time with members of their ethnic group. Response ratings were made on a 4-point scale ranging from 1 (*very closely/a lot*) to 4 (*not at all/none*). Raw scores were reverse-coded so that higher values indicated higher levels of ethnic identity. The average score was computed as the sum of the items divided by the number of items answered. Example items include "How closely do you identify with other people who are of the same racial and ethnic descent as yourself?" and "If you could choose, how much time would you like to spend with other people who are of your same racial and ethnic group?" The scale had a Cronbach's alpha of .70 with the current sample.

Perceived discrimination. Nine items assessing respondents' reports of everyday discrimination were adapted from the Detroit Area Study (Williams, Yu, Jackson, & Anderson, 1997). Response categories for the scale range from 1 (*almost everyday*) to 5 (*less than once a year*). Raw scores were reverse-coded so that higher values indicated more frequent discrimination. The average score was computed as the sum of the items divided by the number of items answered. Example items include "You are treated with less courtesy than other people" and "You receive poorer service than other people at restaurants or stores."

The scale had a Cronbach's alpha of .91 with the current sample.

Psychiatric disorders. Lifetime psychiatric disorders were assessed using a structured diagnostic instrument, the WMH–CIDI (Kessler & Üstün, 2004). *DSM–IV* (American Psychiatric Association, 1994) criteria were used. The WMH–CIDI has been used in 28 countries around the world and demonstrates good reliability and validity (Wittchen, 1994). In the present study, lifetime psychiatric disorders were coded as follows: (1) depressive disorders (major depressive disorder or dysthymia), (2) anxiety disorders (panic disorder, social phobia, generalized anxiety disorder, or posttraumatic stress disorder), (3) co-occurring depression and anxiety disorders, and (4) neither a depressive nor anxiety disorder.

Chronic conditions. Lifetime chronic conditions were assessed using the WMH–CIDI checklist, which includes arthritis/rheumatism, chronic back/neck problems, frequent or severe headaches, other chronic pain, stroke, heart attack, heart disease, high blood pressure, asthma, chronic lung disease, diabetes/high blood sugar, and cancer. The number of chronic conditions was categorized into (1) zero, (2) one to two, and (3) three or more.

Sociodemographic variables. Gender, age, marital status, years of education, household poverty, and nativity status were entered as covariates in the analyses. Marital status was categorized into 1 (*married/cohabiting*), 2 (*divorced/separated/widowed*), and 3 (*never married*). Years of education were categorized into 1 (*0–11 years*), 2 (*12 years*), 3 (*13–15 years*), and 4 (*greater than or equal to 16 years*). Household poverty was a dichotomous variable indicating whether the household income was beneath the federal poverty threshold for the corresponding family size in 2001 (Proctor & Dalaker, 2002). Nativity was a dichotomous variable (U.S. born vs. foreign born).

Data Analysis

All analyses were weighted to be nationally representative and were conducted using SAS 9.2 (SAS Institute Inc., 2007). We computed the overall prevalence of lifetime suicidal ideation and suicide attempts for the entire Asian sample. Cross-tabulations were used to illustrate the distributions of lifetime suicidal ideation and suicide attempts by sociodemographic characteristics. Significance tests for differences were conducted using the Rao–Scott chi-square statistic, which adjusts for complex sample design (Rao & Scott, 1984).

We conducted a series of logistic regression models to determine significant correlates associated with suicidal ideation and suicide attempts. All variables were entered simultaneously in all regression models. First, we conducted two sets of logistic regression analyses to identify culturally related factors and covariates associated with suicidal ideation and suicide attempts, respectively. Then, we conducted gender-stratified logistic regression analyses of suicidal ideation. We do not report analyses on suicide attempts stratified by gender because there was only a small number of attempters ($n = 56$), leading to unstable estimates in the stratified analyses. Odds ratio (*OR*), standard errors, and 95% confidence intervals (CI) from logistic models are reported. Standard error estimates were adjusted for sample design effects using the Taylor series linearization method (Rust, 1995).

Results

Sociodemographic Characteristics and Suicidal Ideation and Attempts

Table 1 presents the sociodemographic characteristics of the sample stratified by lifetime suicidal ideation and suicide attempts. The estimated lifetime prevalence of suicidal ideation and suicide attempts among Asian Americans was 8.8% and 2.5%, respectively. The prevalence rates of suicidal ideation differed significantly by age group, $\chi^2 = 20.60$, $p < .001$, and marital status, $\chi^2 = 38.43$, $p < .001$. Individuals who were U.S. born reported higher rates of suicidal ideation, $\chi^2 = 7.56$, $p = .006$. The prevalence rates of suicidal ideation did not differ by gender, ethnic origin, level of education, or household poverty. The prevalence rates of suicide attempts also differed by age group, $\chi^2 = 12.36$, $p = .015$, and marital status, $\chi^2 = 8.66$, $p = .013$. A higher proportion of women had attempted suicide than men, $\chi^2 = 8.57$, $p = .003$.

Among all those who attempted suicide, 62.5% reported one attempt, 10.7% reported two attempts, 16.1% reported three attempts, and 10.7% reported four or more attempts. About 62% of the attempters reported that their first suicide attempt occurred when

Table 1
Sociodemographic Characteristics by Lifetime Suicidal Ideation and Suicide Attempts

Characteristics	Suicidal ideation (n = 191)		Suicide attempts (n = 56)	
	Weighted % (*SE*)	Rao–Scott $\chi 2$	Weighted % (*SE*)	Rao–Scott $\chi 2$
Overall lifetime	8.8 (0.81)		2.5 (0.31)	
Age				
18–24	13.3 (2.51)	20.60***	3.5 (1.09)	12.36*
25–34	12.0 (1.74)		4.0 (0.85)	
35–49	7.8 (1.37)		2.0 (0.48)	
50–64	5.1 (0.82)		1.6 (0.49)	
65 +	4.1 (1.73)		0.6 (0.53)	
Gender				
Male	7.6 (1.07)	2.53	1.5 (0.34)	8.57**
Female	9.8 (1.04)		3.4 (0.56)	
Ethnic origin				
Chinese	10.6 (1.26)	5.13	3.2 (0.76)	2.03
Vietnamese	6.8 (1.15)		1.7 (0.57)	
Filipino	10.0 (2.07)		2.5 (0.84)	
Other Asian	7.2 (1.37)		2.3 (0.50)	
Education				
Less than 11 years	6.2 (1.18)	4.79	1.6 (0.60)	3.42
12 years	7.7 (1.02)		2.9 (0.56)	
13–15 years	10.5 (1.69)		3.3 (0.82)	
16 years or more	9.0 (1.38)		2.2 (0.51)	
Marital status				
Married	5.7 (0.67)	38.43***	1.9 (0.34)	8.66*
Never married	17.9 (2.77)		4.0 (0.89)	
Divorced/separated/widowed	9.0 (2.65)		3.1 (0.82)	
Household poverty				
Yes	13.0 (3.28)	2.85	3.5 (0.80)	1.62
No	8.2 (0.80)		2.4 (0.37)	
Nativity				
U.S. born	12.4 (2.00)	7.56**	3.5 (1.02)	1.79
Foreign born	7.6 (0.75)		2.2 (0.30)	

* $p < .05$. ** $p < .01$. *** $p < .001$.

they were under 18 years of age. Nearly half (45.5%) of the suicide attempters endorsed the highest level of intent on the suicide intent question, "I made a serious attempt to kill myself and it was only luck that I did not succeed," 18.2% endorsed that "I tried to kill myself, but knew that the method was not foolproof," and 36.4% reported "My attempt was a cry for help. I did not intend to die."

Correlates of Lifetime Suicidal Ideation and Suicide Attempts

Table 2 presents the variables associated with lifetime suicidal ideation and suicide attempts. High levels of family conflict and perceived discrimination emerged as significant culturally related correlates of lifetime suicidal ideation. A one-unit increase in the family conflict score was associated with a two times increase in odds of having lifetime suicidal ideation, $OR = 2.17$, $p = .001$, 95% CI [1.35, 3.50]. A one-unit increase in the score of discrimination was associated with a 1.5 times increase in odds of having lifetime suicidal ideation, $OR = 1.52$, $p < .001$, 95% CI [1.25, 1.85].

There were several significant covariates. Compared to Chinese individuals, respondents in the other Asian group were less likely to report suicidal ideation, controlling for sociodemographic, psychiatric, and culturally related factors, $OR = 0.59$, $p = .023$, 95% CI [0.38, 0.93]. Women, $OR = 1.42$, $p = .033$,

Table 2
Summary of Logistic Regression Analyses for Variables Predicting Lifetime Suicidal Ideation and Suicide Attempts

Variable	Suicidal ideation (n = 191)		Suicide attempt (n = 56)	
	OR	95% CI	*OR*	95% CI
Age				
18–24	1.00		1.00	
25–34	1.28	[0.72, 2.29]	1.25	[0.47, 3.30]
35–49	0.91	[0.47, 1.75]	0.42	[0.14, 1.26]
50–64	0.77	[0.39, 1.49]	0.34	[0.11, 1.09]
65 or above	0.51	[0.18, 1.46]	0.09*	[0.01, 0.68]
Female	1.42*	[1.03, 1.96]	2.32*	[1.08, 4.97]
Ethnic origin				
Chinese	1.00		1.00	
Vietnamese	0.71	[0.42, 1.21]	0.65	[0.30, 1.43]
Filipino	0.86	[0.51, 1.46]	0.59	[0.22, 1.58]
Other Asian	0.59*	[0.38, 0.93]	0.60	[0.27, 1.32]
Marital status				
Married	1.00		1.00	
Never married	2.16***	[1.45, 3.22]	0.51	[0.24, 1.11]
Divorced/separated/widowed	1.29	[0.65, 2.54]	1.22	[0.63, 2.35]
Education				
Less than 11 years	1.04	[0.57, 1.90]	1.08	[0.35, 3.39]
12 years	0.90	[0.56, 1.46]	1.04	[0.31, 3.41]
13–15 years	1.14	[0.70, 1.87]	1.02	[0.45, 2.30]
16 years or more	1.00		1.00	
Household poverty (yes)	1.26	[0.73, 2.17]	1.76	[0.75, 4.10]
Nativity				
U.S. born	1.00		1.00	
Foreign born	0.94	[0.61, 1.44]	1.50	[0.54, 4.17]
Lifetime psychiatric disorders				
Neither a depressive nor anxiety disorder	1.00		1.00	
Depressive disorder only	3.84***	[2.01, 7.36]	8.81***	[3.25, 23.91]
Anxiety disorder only	4.82***	[2.93, 7.93]	7.84***	[2.61, 23.53]
Depressive and anxiety disorders	6.42***	[3.67, 11.23]	4.35*	[1.12, 16.90]
No. of chronic conditions				
None	1.00		1.00	
One to two	1.09	[0.83, 1.43]	0.64	[0.33, 1.24]
Three or more	1.97*	[1.10, 3.53]	3.33	[0.98, 11.32]
Family conflict	2.17**	[1.35, 3.50]	3.15***	[1.73, 5.76]
Discrimination	1.52***	[1.25, 1.85]	1.46*	[1.04, 2.04]
Ethnic identity	0.74	[0.54, 1.02]	0.31***	[0.18, 0.53]

Note. *OR* = odds ratio; CI = confidence interval.
* $p < .05$. ** $p < .01$. *** $p < .001$.

95% CI [1.03, 1.96], and those who were never married, $OR = 2.16$, $p < .001$, 95% CI [1.45, 3.22], had increased odds of suicidal ideation. Individuals with co-occurring *DSM–IV* depressive and anxiety disorders were over six times more likely to have suicidal thoughts than those with neither a depressive nor anxiety disorder, $OR = 6.42$, $p < .001$, 95% CI [3.67, 11.23]. Having three or more chronic conditions was associated with an increase of two times in odds of suicidal ideation, $OR = 1.97$, $p = .024$, 95% CI [1.10, 3.53].

Turning to the analyses of suicide attempts, a one-unit increase in the ethnic identity score was associated with a 69% reduction in the odds of suicide attempts, $OR = 0.31$, $p < .001$, 95% CI [0.18, 0.53]. High levels of family conflict, $OR = 3.15$, $p < .001$, 95% CI [1.73, 5.76], and perceived discrimination, $OR = 1.46$, $p = .029$, 95% CI [1.04, 2.04], were also independently

associated with suicide attempts. Again, there were several significant covariates. Suicide attempts were more likely among women, $OR = 2.32$, $p = .03$, 95% CI [1.08, 4.97], and respondents with depressive and/or anxiety disorders. Respondents over 65 years of age were less likely to make a suicide attempt, $OR = 0.09$, $p = .02$, 95% CI [0.01, 0.68].

Although the presence of a *DSM–IV* depressive disorder emerged as the strongest correlate of suicide attempts, $OR = 8.81$, $p < .001$, 95% CI [3.25, 23.91], it was notable that almost 50% of the ideators and 34% of the attempters did not meet *DSM–IV* criteria for any depressive or anxiety disorders in our sample.

Correlates of Lifetime Suicidal Ideation Stratified by Gender

Table 3 presents the variables associated with lifetime suicidal ideation among Asian American women and men respectively. There were no apparent gender differences in the culturally related variables. Results indicated the influence of psychiatric disorders differed among men and women. Depressive disorder emerged as the

Table 3
Summary of Logistic Regression Analyses for Variables Predicting Lifetime Suicidal Ideation by Gender

Variable	Men ($n = 72$)		Women ($n = 119$)	
	OR	95% CI	*OR*	95% CI
Age				
18–24	1.00		1.00	
25–34	1.16	[0.53, 2.55]	1.38	[0.62, 3.07]
35–49	1.13	[0.33, 3.86]	0.70	[0.31, 1.57]
50–64	0.80	[0.21, 3.04]	0.61	[0.21, 1.80]
65 or above	0.17*	[0.04, 0.86]	0.54	[0.11, 2.75]
Ethnic origin				
Chinese	1.00		1.00	
Vietnamese	0.61	[0.33, 1.12]	0.98	[0.48, 2.01]
Filipino	1.13	[0.51, 2.48]	0.72	[0.41, 1.24]
Other Asian	0.56	[0.26, 1.22]	0.65	[0.35, 1.21]
Marital status				
Married	1.00		1.00	
Never married	3.04**	[1.41, 6.55]	1.80*	[1.06, 3.05]
Divorced/separated/widowed[a]	—		2.00	[0.90, 4.46]
Education				
Less than 16 years[b]	0.82	[0.46, 1.47]	1.29	[0.70, 2.41]
16 years or more	1.00		1.00	
Household poverty (yes)	1.59	[0.82, 3.08]	0.89	[0.42, 1.90]
Nativity				
U.S. born	1.00		1.00	
Foreign born	1.18	[0.63, 2.22]	0.80	[0.48, 0.34]
Lifetime psychiatric disorders				
Neither a depressive nor anxiety disorder	1.00		1.00	
Depressive disorder only	1.49	[0.58, 3.82]	6.17***	[3.21, 11.88]
Anxiety disorder only	3.83***	[2.11, 6.93]	5.18***	[2.96, 9.05]
Depressive and anxiety disorders	7.43***	[3.51, 15.72]	5.15**	[1.85, 14.31]
No. of chronic conditions				
None	1.00		1.00	
One to two	2.20*	[1.20, 4.04]	1.46	[0.63, 3.39]
Three or more	3.54*	[1.14, 10.98]	0.71	[0.47, 1.07]
Family conflict	1.89*	[1.02, 3.50]	2.82***	[1.52, 5.24]
Discrimination	1.48**	[1.15, 1.90]	1.43**	[1.08, 1.89]
Ethnic identity	0.74	[0.40, 1.35]	0.76	[0.53, 1.07]

Note. *OR* = odds ratio; CI = confidence interval.
[a] No respondents were in the "divorced/separated/widowed" category. [b] Years of education (less than 11 years, 12 years, and 13–15 years) were aggregated into a single category (less than 16 years) due to insufficient respondents in each cell.
* $p < .05$. ** $p < .01$. *** $p < .001$.

strongest correlate of suicidal ideation for Asian American women, $OR = 6.17$, $p < .001$, 95% CI [3.21, 11.88], whereas co-occurring depression and anxiety emerged as the strongest correlate of suicidal ideation for Asian American men, $OR = 7.43$, $p < .001$, 95% CI [3.51, 15.72]. In fact, the presence of a noncomorbid depressive disorder did not emerge as a significant correlate of suicidal ideation for Asian American men. Men who had three or more chronic conditions were about 3.5 times more likely to report suicidal ideation than were men who had no chronic conditions, $OR = 3.54$, $p = .029$, 95% CI [1.14, 10.98]. For Asian American women, the presence of chronic conditions was not associated with suicidal ideation. Asian American men aged 65 years or above had lower odds of suicidal ideation as compared with those aged 18 to 24 years, $OR = 0.17$, $p = .032$, 95% CI [0.04, 0.86]. Common correlates of suicidal ideation for both men and women included never being married, having high levels of family conflict, and perceived discrimination.

Discussion

The primary aim of the current study was to examine the influence of culturally related factors on lifetime suicidal ideation and suicide attempts in a nationally representative sample of Asian Americans. We found that 2.5% of Asian Americans reported a suicide attempt and 8.8% reported thinking about suicide in their lifetime. In contrast, the National Comorbidity Survey (NCS, Kessler et al., 1994) surveyed a representative sample of U.S. households and found a 4.6% prevalence of suicide attempts and a 13.5% prevalence of suicidal ideation (Kessler et al., 1999) though the former is at the high end of the range of estimates of suicide attempts reported in previous epidemiological studies conducted in the United States (Mościcki et al., 1988; Paykel, Myers, Lindenthal, & Tanner, 1974).

Rates of suicidal ideation differed across Asian American subgroups. Chinese Americans were more likely to report suicidal ideation than those in the other Asian category (e.g., Asian Indian) and than Vietnamese and Filipino (although these differences did not reach statistical significance). Similar variations also have been found in the rates of suicide mortality in their countries of origin. For example, suicide rates in China are higher than in the Philippines (no data is available from Vietnam; World Health Organization, 2008). Although the presence of a depressive disorder is a robust risk factor for suicide in the literature, anxiety disorder and co-occurring depression and anxiety emerged as stronger correlates in our analyses.

Perhaps the most interesting findings were those pertaining to cultural considerations. We found that high levels of family conflict and perceived discrimination were independently associated with suicidal ideation and suicide attempts. The finding on family conflict highlights the importance of familial integration in Asian cultures. Given that almost 70% of Asians in the United States are foreign born (Reeves & Bennett, 2004), differences in acculturation level are often linked to intergenerational conflicts in immigrant families. Immigrant parents are generally less acculturated compared to their children, who adapt to the U.S. culture more rapidly. It is speculated that differences in rates of acculturation may induce high levels of conflict at home, which ultimately lead to suicidal behaviors (Ying & Han, 2007). Future research should examine the kinds of family conflicts that are associated with suicide risk. In contrast, a high level of ethnic identity was found to be associated with lower rates of suicide attempts for Asian Americans. Ethnic identity may serve as a buffer against suicide risk by providing a sense of belonging and social support to the ethnic community.

Overall, Asian Americans shared some correlates of suicidal ideation and suicide attempts with the general U.S. population, including younger age, female gender, being never married, depression, anxiety, and the presence of chronic conditions. Consistent with previous studies conducted with the general U.S. population, the presence of *DSM–IV* psychiatric disorders (i.e., depression, anxiety, and co-occurring depression and anxiety) emerged as a strong correlate of suicidal ideation and suicide attempts in Asian Americans (Nock et al., 2008).

Some gender differences were also observed. For women, depressive disorder was the strongest correlate of suicidal ideation; for men, depression alone was not related to suicidal ideation. Indeed, only one in 20 Asian male suicidal ideators in the sample had a *DSM–IV* depressive disorder, while almost one in four Asian female suicidal ideators

did. Similarly, for women, the presence of chronic conditions was not related to suicidal ideation, whereas for men the presence of chronic conditions or co-occurring depression and anxiety were among the strongest correlates of suicidal ideation. This is consistent with findings in White samples that the presence of chronic medical conditions is a stronger correlate of suicidal ideation and suicide for men than for women (Fairweather et al., 2007). This gender pattern may be similar across cultures, although further investigations are needed.

It is important to keep in mind that about one in three Asian Americans who attempted suicide had no evidence of *DSM–IV* depressive or anxiety disorders, whereas only 2.2% of Latinos who attempted suicide had no evidence of *DSM–IV* depressive or anxiety disorders in the NLAAS Latino subsample (Fortuna, Perez, Canino, Sribney, & Alegria, 2007). The Chinese American Psychiatric Epidemiological Study also found that Chinese Americans had low-to-moderate prevalence rates of depressive disorders compared to Whites (Takeuchi, et al., 1998). However, neurasthenia, a culture-bound syndrome including somatic symptoms of depression such as fatigue, inability to concentrate, and sleep disturbances, could be diagnosed in about 7% of the respondents (Zheng et al., 1997). Although the presence of these somatic or cognitive symptoms, by themselves, do not constitute a depressive disorder, multiple studies of specific symptoms of depression (i.e., depressed affect, positive affect, somatic and retarded activity, and interpersonal) using the Center for Epidemiological Studies Depression Scale (CES–D; Radloff, 1977) have shown that Asian Americans self-reported higher levels of depression than White Americans (Sue & Chu, 2003). Asian Americans rarely distinguish depressive affect from somatization, although the distinction is generally made by White Americans (Lin & Cheung, 1999; Ying, 1988). Even among those with a diagnosis of depressive disorder, Asian Americans still reported higher levels of somatization. Thus, it has been speculated that Asian Americans are more likely to express psychological distress through somatic complaints. The discrepancy between higher rates of self-reported symptoms of depression but lower prevalence rates of "actual" depressive disorders suggests that the *DSM–IV* approach to mood and anxiety disorders may not capture the unique expressions of these disorders in Asian Americans. Indeed, the same underlying disorder may manifest differently in Asian Americans (U.S. Department of Health and Human Services, 2001). If mental health providers solely rely on standard Western diagnostic tools, Asian Americans who express psychological distress in terms of somatic complaints may not be identified as requiring treatment. Intriguingly, smaller proportions of individuals suffer from *DSM–IV* psychiatric disorders in some Asian countries such as China and Japan, but they exhibit higher rates of suicide compared to the United States (Dennis, 2004). Therefore, several lines of evidence suggest that meeting criteria for a *DSM–IV* psychiatric disorder (e.g., depressive disorder) may not be a good indicator of suicide risk for Asian Americans as it is for White Americans. Alternatively, we speculate that Asian Americans may have different suicide motives, such as loss of face, honor, and shame (Range et al., 1999).

Our study has several limitations. Some respondents might have felt uncomfortable endorsing their suicidal ideation or prior suicide attempts in face-to-face or phone interviews, leading us to underestimate the prevalence of lifetime suicidal ideation and suicide attempts. However, respondents were interviewed in their native language to minimize discomfort and promote open dialogue. Although the NLAAS is the largest national study conducted with Asian Americans, we did not have enough respondents with reported suicidal ideation or suicide attempts in the past 12 months for separate analyses. Thus, we did not distinguish lifetime suicidal ideation and suicide attempts from the more recent ones, nor were we able to conduct analyses within specific high risk groups such as: older women, refugees, and those who have substance use, psychotic, or personality disorders. Although we did not include substance use disorder in our analyses (given that few respondents met diagnostic criteria), previous research found that Asian Americans had the lowest rate of substance dependence or abuse compared to other ethnic groups in the United States (U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, 2009). Data on psychotic and personality disorders were unavailable. The NLAAS is a

cross-sectional survey, so no causal relationships can be drawn. Future research should more precisely determine the causal relationships between these correlates and suicidal ideation and suicide attempts in longitudinal studies. Finally, this study focused only on three major Asian ethnic groups. Despite these limitations, this study used a large, nationally representative sample, which represents a great improvement over prior studies of suicide risk in Asian Americans that have been typically conducted solely in English with convenience samples, usually college students. Future research should (1) extend this line of suicide research to other Asian subgroups such as Korean, Hmong, and Cambodian; (2) identify risk factors for suicidal ideation and suicide attempts among Asian Americans in longitudinal studies; and (3) examine the interactive relationships between gender and chronic medical conditions in suicide among Asian Americans.

Clinical Implications

Our findings have several important implications for primary care and mental health providers. The high proportion of suicide attempters without a *DSM–IV* depressive or anxiety disorder suggests that clinicians should attend to other sociocultural correlates in addition to the diagnosis of psychiatric conditions. For instance, family conflict, perceived discrimination, and ethnic identity are important factors to be explored. Although depression may still play an important role in suicide for Asian Americans, the level of self-reported psychological distress may not reach the classification of clinical depression based on the *DSM–IV* criteria. Thus, clinicians should not overly rely on the *DSM–IV* to identify patients at risk for suicide. When asking about suicidal ideation, clinicians must keep in mind that ethnic minority clients, including Asian Americans, are less likely than Whites to disclose their suicidal ideation voluntarily (Morrison & Downey, 2000). In addition, clinicians should pay particular attention to Asian American men with chronic illness and the markedly increased risk of suicidal thoughts among men with co-occurring depression and anxiety disorders.

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