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Disaggregating the Effects of Acculturation and Acculturative Stress on the Mental Health of Asian Americans

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This study examines the impact of level of acculturation and acculturative stress on the mental health of Asian American college students. Hierarchical regression analyses were used to clarify the relation between level of acculturation, acculturative stress, and mental health outcomes (psychological distress and clinical depression). Being less identified with mainstream United States culture was associated with higher psychological distress and clinical depression, but lost significance when acculturative stress was introduced into the model. Retention or relinquishing of identification with one's heritage culture was not associated with mental health outcomes. Although understanding level of acculturation can help us identify those at risk, findings suggest that acculturative stress is a more proximal risk factor and increases risk for mental health problems independently of global perceptions of stress.

Keywords: acculturation, acculturative stress, Asian American, depression, psychological distress

In recent years, there has been a growing body of research indicating that Asian American adolescents and college students evidence greater psychological distress than their European American counterparts (Abe & Zane, 1990; Greenberger & Chen, 1996; Lorenzo, Pakiz, Reinherz, & Froist, 1995; Okazaki, 1997; Siegel, Aneshensel, Taub, Cantwell, & Driscoll, 1998). Although researchers have been able to replicate mainstream findings and confirm that mainstream risk factors (e.g., stress, social support, poor physical health, subsyndromal symptoms) increase risk for Asian Americans (Hwang, Myers, & Takeuchi, 2000; Takeuchi et al., 1998), our understanding of how culture-related factors contribute to mental health difficulties remains quite limited. To date, one of the most extensively researched culture-related risk factors in Asian Americans is level of acculturation.

Acculturation has been defined as the process of acquiring the cultural characteristics of the new country one migrates to (Berry, 1998; Redfield, Linton, & Herskovits, 1936). There are different aspects of acculturation, such as acculturation at the basic cultural level where intercultural contact generates changes in either or both groups. Additionally, acculturation may occur at the individual psychological level where a person is directly affected by the new culture that they come into contact with (Berry, 2003). Acculturation can affect behaviors, attitudes, cognitions, personality, language, values, relationships, and cultural orientation (Kim & Abreu, 2005). Acculturation has been assessed in a variety of ways, including linguistically (e.g., language competency), demographically (e.g., country of origin, place of birth, and years in the U.S.), socioculturally (e.g., values, attitudes, beliefs, behaviors, social relations, and individualistic and collectivistic orientation) and psychologically (e.g., personality, identity, and ethnic identity) (Berry, 2003; Bornstein & Cote, 2006; Trimble, 2003). Traditionally, individuals who are highly acculturated are assumed to adopt the cultural practices of the dominant society, whereas those who are less acculturated tend to retain many of the traditions practiced in their former country. Unfortunately, acculturation research continues to suffer from significant conceptual and methodological limitations and there continues to be no uniform conceptualization, operationalization, or method of measuring acculturation (Escobar, 1998; Escobar & Vega, 2000; Hwang, Chun, Takeuchi, Myers, & Siddarth, 2005).

Much of the acculturation-health literature is focused on understanding the relationship between level of acculturation and risk of health problems (Escobar & Vega, 2000; Hwang et al., 2005). However, findings from this area of research remains mixed, with evidence for two primary hypotheses having been confirmed. Specifically, there is epidemiological literature that suggests that immigrants may be at greater risk for developing mental and physical illnesses as they acculturate, increase their length of stay in the U.S., and live in the U.S. across multiple generations (Berry, 1998; Burnam, Hough, Karno, Escobar, & Telles, 1987; Escobar, 1998; Escobar & Vega, 2000; Hwang et al., 2005; Kessler et al., 1994; Rogler, Cortes, & Malgady, 1991; Vega et al., 1998). Although the mechanisms of risk have yet to be delineated, Escobar (1998) proposed that as immigrants acculturate, risk for psychological maladjustment may increase as a result of exposure to acculturative stressors, living in a psychosocial environment that is associated with higher risk for psychopathology than their native countries, and/or the loss of culturally mediated and protective social resources (e.g., strong family relations, cultural values, and social networks). Unlike the epidemiological literature cited above, much of the research on specific Asian American groups such as youth, student, and community samples indicate that those who are less acculturated and/or who are foreign-born are at higher risk for psychological maladjustment than those who are more acculturated (Abe & Zane, 1990; Kuo, 1984; Yeh, 2003; Ying, 1988). The rationale here is that those who just arrive in a new

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country experience acculturative stress that negatively influences their ability to successfully negotiate their new environment. It continues to be unclear why researchers are finding these seemingly opposing results. One reason may be the varying conceptual models underlying acculturation measures. Another factor may be differences in background characteristics in the samples studied (e.g., different ethnocultural groups, socioeconomic status, age, level of acculturation, religion, geographic region, ethnic density of neighborhoods).

More recently, a number of investigators have pointed out that acculturation is not a unidimensional process, and that we need to understand the bidimensional aspects of acculturation (Abe-Kim, Okazaki, & Goto, 2001; Berry, 1998, 2003; Kim & Omizo, 2006; Ryder, Alden, & Paulhus, 2000; Tsai, Ying, & Lee, 2000; Wang & Mallinckrodt, 2006). Unfortunately, there continues to be little empirical research conducted on bidimensional models of acculturation and its relation to mental health outcomes. Unidimensional models assume that changes in cultural identity take place along a single continuum over time and have the implicit assumption that as one adopts the attitudes, values, and behaviors of the new mainstream culture they relinquish those of their heritage culture. Bidimensional models, on the other hand, point out the acculturative process is more complex, and that mainstream and heritage cultural identities are relatively independent. For example, one alternative to the unidimensional approach of acquiring and relinquishing cultures along a continuum might be acquiring the mainstream culture without having to give up their heritage culture. Ryder et al. (2000) found that acquisition of the mainstream culture seemed to be the more important of the two dimensions (heritage and mainstream). Specifically, psychological maladjustment was associated with not acquiring the mainstream culture, while acquiring and relinquishing the heritage culture had little effect on the mental health of Asian Canadians. Similarly, among Chinese international students, Wang and Mallinckrodt (2006) found that higher degree of acculturation to the U.S. was associated with less psychological distress, but greater identification with one's home culture did not evidence a significant relationship in either direction.

Although level of acculturation has been used to identify the groups expected to be at higher risk, level of acculturation in and of itself is a descriptive umbrella term that does not necessarily increase or decrease risk for difficulties. Rather, those of varying acculturative levels are likely to be differentially exposed to risk factors that increase vulnerability to problem development (Escobar, 1998; Escobar & Vega, 2000; Hwang et al., 2005; Hwang & Myers, 2007). A more direct and proximal measure of the risk for maladjustment associated with the process of adjusting to a new culture is acculturative stress (Escobar, 1998).

Acculturative stress is the stress associated with adjusting to a new cultural environment (Berry, 1998, 2003) and includes difficulties such as linguistic challenges, loss of social supports and difficulty establishing new social ties, disruptions in family dynamics, difficulty finding a job in the new country, discrimination, and nonacceptance by the host culture. Acculturative stress can be psychological, social, or physical, and can lead to a reduction in health status for ethnic minorities (Berry, Kim, Minde, & Mok, 1987). Acculturative stress is generally a moderate level stressor, however, it can contribute and interact with one's overall stress burden and act as both a chronic and acute stressor (Berry et al., 1987; Myers & Hwang, 2004). In fact, one of the primary reasons why less acculturated individuals are believed to be at greater risk for psychological maladjustment is because of this additional transition and adaptation related stress burden (Abe & Zane, 1990; Kuo, 1984; Yeh, 2003; Ying, 1988). The impact of acculturative stress on immigrants can be moderated by a number of factors, including the nature of the host environment, the nature of the acculturating group, the person's mode of acculturation (i.e., assimilation, separation, marginalization, or integration), and the psychosocial characteristics of the individual (Berry et al., 1987). Unfortunately, acculturative stress may continue to negatively impact immigrants across time as they become more acculturated and even across immigrant generations (e.g., continued experiences with discrimination, intergenerational family conflict), which might help explain why many epidemiological studies find that more acculturated individuals experience greater maladjustment (Berry, 1998; Burnam, Hough, Karno, Escobar, & Telles, 1987; Escobar, 1998; Escobar & Vega, 2000; Hwang et al., 2005; Kessler et al., 1994; Rogler, Cortes, & Malgady, 1991; Vega et al., 1998).

Although a number of studies have confirmed the relationship between acculturative stress and poor mental health for Latino immigrants (Gil, Vega, & Dimas, 1994; Hovey, 2000; Hovey, & King, 1996; Rodriguez, Myers, Bingham Mira, Flores, & Garcia-Hernandez, 2002; Salgado de Snyder, 1987), few empirical studies have examined this relationship in Asian immigrants. To further complicate the matter, the few studies that have been conducted on Asian Americans yield mixed results. For example, Thomas and Choi (2006) found that acculturative stress was positively associated with maladjustment in Asian Americans. Constantine, Okazaki, and Utsey (2004) found that acculturative stress was also associated with poor mental health among Asian international students, but this group is distinctly different than Asian Americans. Other studies, however, found a nonsignificant relationship between acculturation stress and psychological distress (Kim & Omizo, 2005, 2006; Shin, 1993). These mixed findings may partially be because of differences in participant characteristics, sampling techniques, assessment instruments, analytic techniques, and covariates included in the models.

As we progress forward, we need to understand not only the relationship between acculturation groups and risk for maladjustment, but also the reasons why certain acculturation groups evidence greater risk. This is important because level of acculturation's relationship with mental health outcomes varies greatly depending on the background characteristics of sample. It may be the case that level of acculturation as an identifier of group membership tells us little about why Asian American youth and college students evidence higher risk for maladjustment than European Americans. Unfortunately, no studies on Asian Americans have studied the simultaneous effects of both level of acculturation and acculturative stress on mental health. Perhaps more proximal risk factors such as acculturative stress drive the relationship between level of acculturation and psychological maladjustment. Failing to include both variables in etiological models, therefore, may yield an incomplete picture of the true relationship between these variables and mental health outcomes.

As one of the fastest growing immigrant groups in the U.S., it is important for us to understand what factors might increase risk for poor mental health in Asian Americans (Larsen, 2004). Identifying

more proximal mechanisms of risk can help highlight potential foci for prevention and intervention efforts. Moreover, clarifying the relationship between level of acculturation and poor mental health will help us better understand why specific populations of Asian Americans may be at greater risk. This paper examines the relationship between level of acculturation, acculturative stress, and the mental health status (as measured by psychological distress and clinical depression) of Asian American college students. Given that many nonepidemiolgocal studies find that less acculturated Asian American students tend to have worse mental health (Abe & Zane, 1990; Kuo, 1984; Yeh, 2003; Ying, 1988), we hypothesize that lower levels of acculturation to the U.S. culture will be associated with greater psychological maladjustment. Second, we hypothesize that the relationship between level of acculturation and mental health outcomes will be lost once more proximal predictors of risk such as acculturative stress are identified and accounted for. Finally, we hypothesize that acculturative stress is a distinct form of stress and will make an independent contribution to mental health outcomes even after general perceived stress is accounted for.

Method

Data were collected from 107 Asian American ($n = 107$) college students from a university located in the Rocky Mountain region of the U.S. The sample consisted of 71 Asian American women and 36 Asian American men. The five largest ethnic groups were Chinese Americans ($n = 34$), Vietnamese Americans ($n = 20$), Japanese Americans ($n = 15$), Taiwanese Americans ($n = 12$), and Korean Americans ($n = 10$). Students represented various years in college (1st year = 28%, 2nd year = 15%, 3rd year = 23%, 4th year = 14%, 5th year = 10%, 6th year or more = 9%). Thirty-nine percent ($n = 42$) of the students were born abroad and their mean length of residence in the U.S. was 12.89 years ($SD = 6.55$). International students were not included in this study. Students responded to IRB-approved advertisements sent through email inviting them to participate in an Internet-based research study on student health. Identifying information was collected and students were compensated $10 for their participation. Descriptives of the sample are presented in Table 1.

Table 1
Characteristics of Independent and Dependent Variables

Variable	Mean or *n*	*SD* or percent	Range
Gender			
Women	71	66.4	
Men	36	33.6	
Years in school	2.92	1.64	1–6
Financial stress	2.40	1.03	1–5
Perceived stress	18.37	6.04	2.00–38.00
Level of acculturation (heritage)	67.95	12.21	33.00–90.00
Level of acculturation (mainstream)	70.08	10.78	35.00–90.00
Acculturative stress	18.60	4.40	11.00–36.00
Psychological distress	0.70	0.54	0.00–2.26
Clinical depression			
Not depressed	92	86.0	
Depressed	15	14.0	

Psychological Distress

The Brief Symptom Inventory (BSI) is a well-validated 53 item self-report measure of psychological distress (Derogatis & Melisaratos, 1983). Participants were asked to indicate how much each of the symptoms described has bothered them in the past 7 days. The BSI uses a 5-point Likert scale ranging from "not at all" to "extremely." The BSI is scored along nine primary symptom dimensions (somatization, obsessive–compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism) and three global indices of distress (global severity index, positive symptom distress index, and positive symptom total). The present study used the global severity index because it is the most sensitive of the three global indices (Derogatis & Melisaratos, 1983). This scale has been found to have high internal consistency (α ranging for subscales ranging from 0.71 to 0.85) and convergent validity (Derogatis & Melisaratos, 1983). The BSI and its predecessor the longer Symptom Checklist-90 have been previously used for research in Asian and Asian American populations and demonstrated strong reliability (Cronbach's alpha = .70-.88) and validity (Cheng, Leong, & Geist, 1993; Hwang, Myers, & Takeuchi, 2000; Wang & Mallinckrodt, 2006). In this study, BSI scores also evidenced strong reliability ($\alpha = .97$).

Clinical Depression

The Hamilton Depression Inventory (HDI) is a 23 item self-report inventory version of the Hamilton Depression Rating Scale (HDRS), which is one of the most widely used interview-based measures of depression (Hamilton, 1960, 1967; Reynolds & Kobak, 1995). There is strong support for the reliability and validity of the HDI in assessing the severity of depression in multiethnic samples (Dozois, 2003; Reynolds & Kobak, 1995). The HDI evidenced good internal consistency (Cronbach's alpha = .93), test–retest reliability ($r = .95$), and validity (content, criterion, and convergent) in its development study (Dozois, 2003; Reynolds & Kobak, 1995). In this study, Cronbach's alpha was .82. The HDI uses clinical cutoff scores to indicate the severity of depression over the past 2 weeks. A clinical cutoff score of 19 maximizes the hit rate (98.2%), sensitivity (99.3%), and specificity (95.9%) in differentiating between nonreferred community adults and psychiatric outpatients diagnosed with major depression (Reynolds & Kobak, 1995). Although the HDI has been used in multiethnic samples, the psychometric properties and clinical cutoffs have not been specifically studied in Asian or Asian American populations and should be further studied.

Financial Stress

Students were asked to rate their financial need on a scale ranging from 1 "no financial need" to 5 "severely needy."

Perceived Stress

The Perceived Stress Scale (PSS) is one of the most commonly used measures to assess general perceived stress (Cohen, Kamarck, & Mermelstein, 1983; Cohen & Williamson, 1988). The PSS assesses stress during the past month using a four point Likert scale ranging from "never" to 'very often.' It measures different

domains of stress including how uncontrollable, unpredictable, and overloaded one feels. It has been found to demonstrate high internal consistency (coefficient $\alpha = .78$) (Cohen & Williamson, 1988), which was also confirmed in this study (coefficient $\alpha = .87$). PSS scores also demonstrate strong internal consistency (Cronbach's alpha = .93) and validity in studies of Chinese and Chinese Americans (Chen, Tseng, Chou, & Wang, 2000; Lee & Crocket, 1994; Taylor-Piliae, Haskels, Waters & Froelicher, 2006).

Level of Acculturation

The Vancouver Index of Acculturation (VIA) is a bidimensional measure of acculturation (Ryder et al., 2000). This 20-item measure provides two subscale scores for each participant, degree of affiliation with their heritage culture and with the mainstream culture. Items in the VAI assess ethnic and mainstream behavior, participation, enjoyment, values, and social affiliation. Responses are answered on a 9-point Likert scale ranging from "strongly disagree" to "strongly agree." This scale has been found to have strong internal consistency for the heritage (Cronbach's alpha = .79-.92) and mainstream dimensions (Cronbach's alpha = .75-.89), as well as strong concurrent validity with proxies of acculturation, including percentage of time residing in a Western country, percentage of time educated in the West, generational status, plans to remain in the West (vs. return to home country), English as a first language (vs. second language), and self-rated Western identification. Moreover, the measure also demonstrated good concurrent validity with scores on the Suinn-Lew Asian Self-Identity Acculturation Scale (Suinn, Ahuna, & Khoo, 1992; Suinn, Rickard-Figueroa, Lew, & Vigil, 1987), a unidimensional measure of acculturation. Coefficient alpha's for affiliation to mainstream and heritage cultures in this study were both .89.

Acculturative Stress

An 11-item questionnaire was used to measure acculturative stress (Gil, Vega, & Dimas, 1994; Vega, Gil, Warheit, Apospori, & Zimmerman, 1993a; Vega, Gil, Warheit, Apospori, & Zimmerman, 1993b). Questions tapped into five domains, including language conflict, social conflict, perceived discrimination, perceptions of a closed society, and perceived acculturation gap between the student and parents. Items were developed through focus groups and pilot tests and evidence good criterion validity and reliability (Vega et al., 1993b). The acculturative stress scale evidenced a Cronbach's alpha of .81 in this sample, but has not been confirmed in other studies of Asian Americans.

Results

Descriptive Statistics

Correlations coefficients were calculated to assess the interrelationships between variables of interest. As shown in Table 2, results indicate a significant correlation between perceived stress and having more ties with one's heritage culture, psychological distress, and clinical depression. Moreover, fewer years in school was correlated with higher psychological distress. Results indicated that there was a significant correlation between heritage and mainstream acculturation. However, the correlation coefficient was moderately large and suggested that the two dimensions of acculturation share common and unique variance. Being less acculturated to mainstream U.S. culture was also significantly correlated with clinical depression. Acculturative stress was significantly correlated with psychological distress and clinical depression, but was not significantly correlated with level of acculturation (heritage or mainstream), suggesting that acculturative stress is distinct from acculturation.

Regression Analyses

Hierarchical regression analyses were conducted to examine the relationship between independent variables and psychological distress as measured by the BSI (see Table 3). Blocks were ordered such that demographic variables were entered first (i.e., gender and years in school), followed by stress variables (i.e., financial stress and perceived stress), level of acculturation (heritage and mainstream), and acculturative stress. The goal was to examine whether level of acculturation was associated with mental health after more general demographic and risk factors were accounted for. Acculturative stress was entered last to determine whether the relationship between level of acculturation and outcomes would change after a more proximal cultural risk factor was introduced into the model.

Block 1 accounted for 11% of the variance in the model and indicated that fewer years in school was significantly associated

Table 2
Correlation Matrix for all Measured Variables Used in the Model

Variable	1	2	3	4	5	6	7	8	9
1. Sex (1 = male, 2 = female)	—								
2. Years in school	−.16	—							
3. Financial stress	.03	−.02	—						
4. Perceived stress	.02	−.15	.14	—					
5. Acculturation heritage	−.02	−.15	.05	.20*	—				
6. Acculturation mainstream	−.08	−.10	.04	−.01	.44**	—			
7. Acculturative stress	−.11	−.18	−.05	.18	.14	−.16	—		
8. Psychological distress	−.10	−.29**	.10	.65**	.18	−.10	.46**	—	
9. Clinical depression	−.17	−.06	−.08	.41**	.02	−.21*	.28**	.62**	—

Note. $N = 186$.
* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 3
Hierarchical Regression Model for Psychological Distress

Variables	*B*	β	*t*	R^2	ΔR^2
Block 1				.11	.11**
Demographics					
Gender	−0.17	−0.15	−1.61†		
Years in school	−0.10	−0.31	−3.32**		
Block 2				.48	.37**
Stress					
Financial stress	0.01	0.01	0.18		
Perceived stress	0.06	0.61	8.37**		
Block 3				.50	.02
Level of acculturation					
Heritage	0.01	0.10	1.28		
Mainstream	−0.01	−0.17	−2.16*		
Block 4				.58	.08**
Acculturative stress	0.04	0.30	4.22**		

† $p < .10$. * $p < .05$. ** $p < .01$.

with higher psychological distress. Block 2 accounted for an additional 37% of variance and indicated that perceived stress was strongly positively associated with psychological distress. The addition of level of acculturation indicated that those who were less acculturated to the mainstream culture experienced significantly greater psychological distress, but this degree of association with one's heritage culture was not. However, this accounted for only an additional 2% of variance explained by the model. Higher acculturative stress was significantly associated greater psychological distress and accounted for an additional 8% of model variance when added in Block 4.

Hierarchical logistic regression analyses were used to determine the relationship between the variables of interest and clinical depression (see Table 4). Variables were entered in the same block order as described above. In Block 2, perceived stress evidenced a significant relationship with clinical depression, indicating that with every one unit increase in perceived stress the odds of becoming depressed increased by 1.37. Greater association with mainstream U.S. culture was associated with reduced risk for clinical depression in Block 3, indicating that with every one unit increase in identification with mainstream culture, risk for depressed decreased by an odds ratio of 0.91. However, this relationship dropped out of significance when acculturative stress was introduced in Block 4. With every one-point increase in acculturative stress, the odds of becoming depressed increased by 1.24. This suggests that acculturative stress was significantly associated with clinical depression above and beyond the effects of general perceived stress, and that the effect that level of acculturation to mainstream culture has with clinical depression is impacted by its relation with acculturative stress.

Discussion

This study provides evidence in support of the idea that acculturation-related processes can increase risk for maladjustment in Asian Americans. All three of our study hypotheses were confirmed. First, being less identified with mainstream U.S. culture was associated with increased psychological distress and risk for clinical depression, whereas retention or relinquishing of one's heritage culture did not evidence a significant relationship with mental health outcomes. This finding supports the idea that regardless of the degree to which one subscribes to their heritage culture, one's ability to maneuver successfully within the dominant society may be associated with one's psychological well-being (Ryder et al., 2000; Wang & Mallinckrodt, 2006). Those who are less able to adapt to mainstream culture also tend to be more distressed. Second, the fact that identification with the U.S. culture lost significance with both psychological distress and clinical depression when acculturative stress was introduced into the model suggests that acculturative stress may be a more proximal risk factor for psychological maladjustment for Asian Americans. That is, regardless of an individual's level of acculturation, the degree of stress associated with the acculturative process evidences a stronger relationship with psychological well-being. Additionally, this finding suggests that level of acculturation may be better described as a more distal identifier of group risk than as a mechanism of risk. Finally, findings also suggest that acculturative stress is associated with mental health outcomes above and beyond the effects of general perceived stress. To better understand problem development among Asian Americans, an analysis of both mainstream and culture-related risk factors is necessary (Berry, 1989).

The results from this study contribute to the acculturation-health literature in a number of ways. First, although a number of theoretical papers highlighting the importance of bidimensional models of acculturation have been popularized (Abe-Kim, Okazaki, & Goto, 2001; Berry, 1998, 2003; Ryder, Alden, & Paulhus, 2000; Tsai, Ying, & Lee, 2000; Wang & Mallinckrodt, 2006), relatively few studies have empirically examined the relationship between bidimensional acculturation and mental health outcomes among Asian Americans. Findings from this study indicated that the retention or relinquishing of one's heritage culture was not associated with maladjustment. Rather, it was the lack of identification with mainstream U.S. culture that was associated with maladjustment in this group. This finding is consistent with that of Ryder and colleagues' (2000) research on Asian Canadians and Wang & Mallinckrodt's work with Chinese international students and has a number of clinical implications. Results suggest that it may be beneficial to help immigrants adjust by facilitating cultural acquisition or bicultural competence. For example, increased fluency of

Table 4
Hierarchical Logistic Regression for Clinical Depression

Variable	OR (95% CI)
Block 1	
Gender	
Female	4.21 (0.88–20.17)
Male	
Years in school	0.84 (0.59–1.21)
Block 2	
Financial stress	0.53 (0.26–1.08)†
Perceived stress	1.37 (1.16–1.63)**
Block 3	
Heritage culture	1.02 (0.95–1.10)
Mainstream culture	0.91 (0.84–0.99)*
Block 4	
Acculturative stress	1.24 (1.03–1.50)*

† $p < .10$. * $p < .05$. ** $p < .01$.

English may reduce the stress associated with accessing public services, finding competitive jobs, and increasing one's social support network. Being able to more successfully navigate the culture of the host environment may also lead to less cultural alienation and increase one's feelings of belonging. A better understanding of the host culture may also help immigrant parents improve relations with their children who grow up in a different cultural environment (Hwang, 2006a).

Findings from this study also suggest that acculturative stress is a more proximal risk factor for psychological maladjustment than level of acculturation, even after accounting for the effects of general perceived stress. Although the identification of at-risk groups may be beneficial for prevention and intervention purposes, developing therapeutic interventions that help Asian Americans cope with and reduce the amount of acculturative stress they experience is also an important endeavor. In addition, when working with Asian American college students, it may be important for clinicians to assess for acculturative stress and understand how this may contribute to clients' functioning. Results also suggest that Asian Americans may conceptualize and experience acculturative stress differently than the general stresses of everyday life. Stress management techniques that are adapted to address culturally related stresses may be more effective in improving the mental health of Asian Americans than more general techniques (Hwang, 2006b). For example, culturally adapted therapeutic interventions could help clients cope with the loss of social ties, develop skills for negotiating situations when they feel they are being discriminated against, or facilitate successful integration and learning of U.S. culture. Interventions that are more basic might include providing English language training for parents or helping children better adjust to English classroom settings by providing ESL tutors. Acculturation-related family conflicts between parents and children that are the result of decreased ability to communicate in the same language or growing disparities in values, also known as acculturative family distancing, should also be addressed (Hwang, 2006a).

Results also suggest that students in the earlier years in college are at higher risk for experiencing psychological distress and depression then students in their later years in college. This is consistent with previous mainstream research findings (Eberhart & Hammen, 2006; Hammen, 1980). The transition period from high school to college is a particularly stressful process for many people and therefore may lead to higher rates of depression in this group (Eberhart & Hammen, 2006; Hammen, 1980). Given that freshman college students tend to evidence higher rates of maladjustment, it may be important for university counseling centers to educate this particular group of students about the availability of support resources. These educational outreach programs could also serve to normalize the stress associated with adjustment process for students.

Although the findings from this study add to the existing literature on acculturation-related issues and mental health outcomes, a number of limitations deserve mention. First, data were collected on student samples from a Rocky Mountain region in the U.S. where there are strong religious influences. Our findings may not generalize to other age groups or Asian Americans living in more ethnically dense or religiously diverse areas. The advantage of collecting data from an area where there are relative fewer minorities is that acculturative effects are potentially enhanced in an area where Asian Americans are increasing. In addition, it is important to note that although Asian American immigrants, to some extent, share similar immigration and acculturation-related experiences, there are dozens of distinct Asian ethnic groups with different backgrounds, generational status, and experiences (Sue & Sue, 2003). Findings from this study may not equally apply to this heterogeneous population. Second, data were cross-sectional and causal implications cannot be drawn. Longitudinal studies may help us better understand the temporal relationship between predictor and dependent variables. Third, some may argue that participants in an online study may differ qualitatively from nononline participants. However, prior research findings have supported the use of the Internet as an effective means of obtaining data and provide support that Internet and traditional methods produce similar findings (Gosling, Vazire, Srivastava, & John, 2004). In addition, it is important to note that although our measure of acculturation has demonstrated good psychometric properties, different aspects of acculturation that may not have been more heavily weighted in the measure used (e.g., ethnic identity) may have a different relationship with psychological outcomes.

Despite the aforementioned limitations, a number of strengths of this study should be highlighted. To date, few studies examining the relationship between acculturation and health outcomes have included both level of acculturation and acculturative stress in their models of risk. In addition, most acculturation-related studies have examined symptomatic distress as the primary outcome, with very few examining clinical depression. Future studies should examine the simultaneous effects of both level of acculturation and acculturative stress in predicting health outcomes longitudinally and in community samples. Future studies should also use multiinformant and multimethod (self-report and face-to-face interview) reports to increase the validity and reliability of data gathered. In addition, more complex analyses of possible mediating and moderating relationships between and among acculturative variables and mainstream risk factors are needed. Unfortunately, the use of more sophisticated analytical techniques were not used in this study given the small sample size.

Many immigrants come to the U.S. in search of a better life for themselves and their families. Better understanding of how acculturation-related processes might exacerbate risk for mental health problems or facilitate healthier adjustment is a worthy endeavor, especially given the increasing Asian American population in the U.S. (Larsen, 2004). The present study offers suggestions on potential foci to address in prevention and intervention programs for Asian Americans. National programs that help facilitate healthy immigrant adaptation through psychoeducation and the targeting of acculturative-stress are sorely needed.

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