INFLUENCES OF PERSONAL STANDARDS AND PERCEIVED PARENTAL EXPECTATIONS ON WORRY FOR ASIAN AMERICAN AND WHITE AMERICAN COLLEGE STUDENTS

BY

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DISSERTATION

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ABSTRACT

Previous research suggests that Asian American college students experience higher levels of pressure for academic success and higher levels of parental expectations and criticism compared to White Americans. Moreover, perceived discrepancies between parental expectations and academic outcome have been found to be related to psychological distress for Asian Americans. In studies with White Americans, discrepancies between expectations and outcome have been specifically connected to worry, a central feature of Generalized Anxiety Disorder. However, worry remains an understudied psychological phenomenon in Asian Americans, who may be particularly vulnerable to this form of distress. The current study examines perceptions of living up to parental expectations and personal standards as possible mediators of the relationship between race and worry in a sample of 836 Asian Americans and 856 White Americans. Results indicate that Asian Americans and White Americans do not differ in levels of pathological worry as measured by the Penn State Worry Questionnaire, but Asian Americans report higher frequency of worry across multiple domains as measured by the Worry Domains Questionnaire. Perceptions of living up to parental expectations of current academic performance and personal standards for preparation for a future career partially explain racial differences in frequency of worry about school. Standards for respect for the family partially explain racial differences in frequency of worry about the family. The findings highlight the importance of considering personal and perceived parental expectations to understand Asian Americans' worry.

To My Ah Ma

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CHAPTER 1

INTRODUCTION AND LITERATURE REVIEW

Several years ago, an independent ethnic media service, Pacific News Service, published an article in the *San Francisco Chronicle*, entitled "Inside the Asian Pressure Cooker" (Vongs, 2005). This article suggested that Asian American parenting and cultural practices are resulting in impossibly high expectations for children and that these expectations are leading to psychological distress, and in extreme cases, suicide, among Asian American adolescents and young adults. Other news outlets have highlighted similar concerns about the psychological costs Asian American students pay because of the academic pressure placed on them by their parents. For example, in a 2009 article published in the *San Jose Mercury News,* "High Grades, High Stress for Asian American Students in the Bay Area", Noguchi wrote: "Many Asian parents, especially well-educated immigrants, set sky-high expectations for their children. And while that drive to achieve has put Asian students as a group at the top of the class, it's also forcing some uncomfortable conversations within the Asian community about the damage those demands may cause." A 2005 *Wall Street Journal* article entitled "New White Flight" similarly pointed to "new immigrant parents, particularly those from countries such as China and India, who often put a lot of academic pressure on their children" (Hwang, 2005). Indictments of Asian American parents of this severity, coming from within and outside of Asian American communities, deserve empirical investigation. Psychological research is needed to better understand this phenomenon to provide valuable information for those serving Asian American communities. How might families serve as "pressure cookers" for Asian American young adults? For Asian American young adults, what are the psychosocial impacts of personal standards and parental

expectations in particular life domains such as school or family? Do parental expectations differentially impact Asian Americans compared to White Americans?

Previous research on Asian American young adults have suggested that they experience high levels of pressure for academic success (Eaton & Dembo, 1997), high levels of parental expectations and criticism compared to White Americans (Chang, 1998), and that discrepancies between perceived parental expectations and perceived performance is related to anxiety and depression for Asian Americans (Kobayashi, 2006). Indeed, both popular media and ethnic minority psychology research have tended to focus on the impact of family and community pressures on Asian American experiences of depression and related problems such as suicide risk. However, perceptions of parental expectations and criticisms have also been linked to worry, a central feature of generalized anxiety disorder and other anxiety disorders (Stober & Joorman, 1998). Experiences of worry among Asian Americans remain an understudied topic that may potentially involve a far greater number of Asian American students than depression and suicide. Worry is a common and pervasive human experience (Borkovec, Ray, & Stober, 1998; Borkovec, Alcaine, & Behar, 2004). In addition, there is evidence to suggest that worry is a pervasive form of psychological distress for Asian American college students (Scott, Eng, & Heimberg, 2002). Previous research suggests that Asian American college students exhibit high levels of worry across many domains, such as the future, finances, and relationships (Scott et al., 2002). The current study examines potential explanatory factors for racial differences between Asian Americans and White Americans in experiences of worry.

Asian American College Students

Asian Americans represent a heterogeneous group comprised of individuals with origins in East Asia, Southeast Asia, and the Indian subcontinent (Reeves & Bennett, 2004). The 2000

US Census recognized 25 distinct ethnic/cultural groups. Whereas two-thirds of Asian Americans are immigrants to the United States, the other third represent a diverse set of individuals ranging from those with immigrant parents to those whose families have lived in the United States for two centuries. Among Asian American college students, this diversity extends to other sociodemographic factors, such as language proficiency, income level, and parents' academic achievement (Hune, 2002), as well as to psychological factors, such as cultural orientation (Tsai, Ying, & Lee, 2000) and the centrality of racial and ethnic identities (Chen, 2006; Chen, LePhuoc, Guzmán, Rude, & Dodd, 2006).

Although vast heterogeneity exists within the Asian American college student population, it is important to consider that there are also many similarities across different ethnic groups. Kim, Yang, Atkinson, Wolfe, and Hong (2001) found that different Asian American ethnic groups share common cultural values of collectivism, conformity to norms, emotional self-control, family recognition through achievement, filial piety, and humility. These cultural values suggest that family roles and academic achievement are important to many Asian Americans. Compared to White American parents, Asian American parents tend to place greater emphasis on their children's academic achievement and filial piety (Chao, 2000; Lin & Fu, 1990). Social scientists have argued that Asian Americans, especially immigrant Asian Americans, perceive educational success as the primary pathway for social mobility in the US (e.g., Sue & Okazaki, 1990; Xie & Goyette, 2003). Furthermore, many Asian Americans perceive respecting and maintaining family roles as central to the preservation of their ethnic culture (e.g., Pyke, 2000; Ying, Coombs, & Lee, 1999). Given the high investments and the threats associated with failure in the domains of school and family, Asian Americans may be particularly vulnerable to experiencing worry in these areas. Theories of worry that account for how individuals process

and respond to threats serve as a foundational basis for understanding worry among Asian Americans.

Conceptual Models of Worry

Models of worry and generalized anxiety disorder in the general population focus on cognitive and motivational factors. Specifically, models of worry emphasize four key contributors: cognitive avoidance, intolerance of uncertainty, maladaptive worry beliefs, and negative problem orientation. Borkovec and colleagues (Borkovec et al., 2004; Roemer, Salters, Raffa, & Orsillo, 2005) suggest that worry functions as a cognitive mechanism to avoid perceived threat and suppress negative emotional experiences. When faced with perceived threat, individuals with pathological worry engage in thought activity to reduce emotional and physiological distress. Referencing Foa and Kozak's (1986) model of emotional processing of fear, Borkovec et al. (2004) argue that because worriers avoid, rather than process, emotional and physiological reactions to perceived threat, this avoidance serves to maintain their anxiety.

Dugas and colleagues (Dugas, Gagnon, Ladouceur, & Freeston, 1998) propose that intolerance of uncertainty is central to worry. Intolerance of uncertainty is defined as an excessive tendency to perceive uncertain situations as unacceptable (Dugas, Gosselin, & Landouceur, 2001; Dugas et al., 1998). Berenbaum, Bredemeier, and Thompson (2008) found that intolerance of uncertainty, as measured by the Intolerance of Uncertainty Scale (Buhr & Dugas, 2002), is comprised of the following dimensions: desire for predictability, tendency to be paralyzed by uncertainty, tendency to respond to uncertainty with distress, and inflexible uncertainty beliefs. Intolerance of uncertainty has been shown to predict worry above and beyond intolerance of ambiguity, perfectionism, and perceived control (Buhr & Dugas, 2006).

Several researchers have suggested that positive beliefs about worry contribute to the development and maintenance of worry (Borkovec & Roemer, 1995; Borkovec, Hazlett-Stevens, & Diaz, 1999; Davey, Tallis, & Capuzzo, 1996; Wells, 1999). These beliefs were summarized by Borkovec, Hazlett-Stevens, and Diaz (1999) as follows: (1) worrying helps the individual figure out how to avoid or prevent bad events from happening, (2) worrying actually prevents bad events from happening, (3) worrying prevents future, more emotionally evocative worrying, (4) worrying serves to prepare the individual for when bad events do happen, (5) worrying motivates the individual to get things done, and (6) worrying is an effective problem-solving strategy. These maladaptive beliefs have been found to be shared across worriers, regardless of their worry severity and whether they met criteria for GAD (Ruscio & Borkovec, 2004). Although pathological worriers believe that worry is beneficial to them, it actually serves to maintain their worry and the negative consequences associated with worry, because, as Borkovec and colleagues (Borkovec et al., 2004) have suggested, it is a form of cognitive avoidance.

Negative problem orientation, described as a set of cognitive-affective schemas that reflect how one views their problems in living (D'Zurilla & Nezu, 1990), is characterized by doubts about one's problem-solving ability, perceptions of problems as threats to one's well-being, and pessimism about problem-solving outcomes. Negative problem orientation is related to GAD independent of anxiety and depression (Dugas, Freeston, & Ladouceur, 1997). Whereas the four factors described above are critical to our general understanding of worry and generalized anxiety disorder, motivational, interpersonal, and cultural factors are also important to our understanding of worry and generalized anxiety as worry content tends to be focused on one's ability to successfully function in multiple life domains.

Motivational Contributors to Worry

Higgins' self-discrepancy theory (Higgins, 1987) suggests that anxiety is the affective consequence of discrepancies between particular domains of self-representations, specifically, the *actual* self (who a person believes he or she actually is) and the *ought* self (who a person believes he or she should be). Higgins and his colleagues demonstrated the effect of this self-discrepancy in predicting anxiety with correlational studies (Higgins, Klein, & Strauman, 1985), priming studies (Higgins, Bond, Klein, & Strauman, 1986), and longitudinal studies (Strauman & Higgins, 1988). Higgins (1987) suggested that discrepancies between actual and ought representations of the self result in agitation-related emotions (e.g., fear, worry, agitation) because the person feels he or she is not living up to expectations or obligations of what he or she or significant others believe he or she should be doing, and fears punishment. Higgins (1987) further hypothesized that individuals with actual-ought discrepancies may have had negative parental interactions in which their parents criticized or punished them for not fulfilling expectations. In support of this idea, Stober and Joormann (2001) and Chang (1998) found a relationship between parental expectations/criticisms and worry.

Higgins' self-discrepancy theory posits that ought self-representations are in fact internalized standards that motivate one's behavior (Higgins, 1987). Two studies by Berenbaum and colleagues provide insight as to how standards contribute to anxiety, specifically, worry. Berenbaum, Thompson, and Bredemeier (2007) found that the relationship between standards and worry is mediated by perceived costs. That is to say, having high standards leads to worry because one perceives the cost of failing to meet these standards threatening and a cause for worry. A study by Supinski and Berenbaum (2007) suggests that it is not high standards in and of themselves, but rather contextualized standards (i.e., unreasonably high standards given one's resources and/or abilities) that are associated with worry. For example, hitting an eagle (i.e., two

strokes below par) in golf may be a high standard for everyone but is a much higher contextualized standard for someone who plays golf as a hobby than for Tiger Woods, an accomplished professional golfer.

In sum, theories of worry have mainly focused on maladaptive cognitions (specifically, cognitive avoidance, maladaptive beliefs about worry, and intolerance of uncertainty) and motivations (specifically, the inability to live up to standards and goal investment). Although these factors have great explanatory and predictive power, contextual factors can add to our understanding of worry because the models reviewed above, as well as models that more broadly examine the influence of information processing on anxiety (e.g., Beck & Clark, 1997), conceptualize worry as maladaptive responses to threatening stimuli. Evidence of cross-ethnic variations in the types and levels of threats and the types of coping strategies utilized in response to threats that provoke anxiety among Asian Americans suggests that Asian Americans may differ from other racial groups with regards to the contents of their worry and the frequency with which they worry in multiple domains. For example, interpersonal interactions may be more threatening for Asian Americans than they are for other ethnic groups (Okazaki, 1997; Lee, Okazaki, & Yoo, 2006). Chang (2001) showed that Asian Americans engage in greater problem avoidance and social avoidance strategies compared to White Americans. In addition, Chang (1998) found that Asian Americans engage in more negative problem orientation than White Americans, which Dugas and colleagues (2006) have suggested is a strong predictor of worry severity. In light of the evidence that anxiety among Asian Americans may also be driven by cultural factors, it would be important to examine whether Asian Americans differ in their experiences of worry compared to members of other cultural groups, and if so, to examine what may account for such group differences.

Experiences of Worry for Asian Americans

Little research has been conducted examining rates of generalized anxiety disorder (GAD) or other forms of anxiety (e.g., worry) among Asian Americans. In fact, clinical research on Asian Americans has focused specifically on social anxiety and not on generalized anxiety. However, a study by Scott, Eng, and Heimberg (2002) found that Asian American university students reported similar levels of pathological worry (as measured by the Penn State Worry Questionnaire; PSWQ) as students from other racial/ethnic groups, but Asian Americans experience higher levels of worry across multiple domains than White Americans and African Americans. These domains, measured by the Worry Domains Questionnaire (WDQ; Tallis, Eysenck, & Mathews, 1992), were: relationships, lack of confidence, aimless future, work incompetence, and financial. Scott and colleagues (2002) found that Asian Americans reported more worries than White Americans in the aimless future domain (sample items include: "I worry that my life may have no purpose" and "I worry that I'll never achieve my ambitions)," though because of their small Asian American subsample (n = 61), they were unable to determine whether the racial difference in worry frequency was statistically significant. However, the researchers interpreted these racial differences as being consistent with other data that suggested that Asian American students focus on academic success more and fear academic failure to a greater extent than students from other racial groups (Eaton & Dembo,1997; Zusho, Pintrich, & Cortina, 2005).

It has been suggested that the PSWQ measures pathological worry (i.e., the general propensity to engage in pathological worry) (Molina & Borkovec, 1994; p. 273) and the WDQ measures non-pathological worry (Tallis, Eysenck, & Mathews, 1992). Other theorists have argued that both the PSWQ and WDQ measure pathological worry but that the WDQ is distinct

from the PSWQ in that it also captures "task-oriented constructive worrying" (Davey, 1993). A study by Verkuil, Brost, and Thayer (2007) found that PSWQ predicts the perseverance of worry (across several days and from day into night) better than the WDQ. Given that the two measures appear to cover distinct aspects of worry, Asian American-White American differences or similarities in these measures may point to racial and cultural differences in perfectionism, coping styles, and the function of worry as pathological or non-pathological (and potentially adaptive) (Chang et al. 2007).

Potential Influences on Worry for Asian Americans

Due to their cultural and racialized experiences in the United States, Asian Americans' experiences with worry may be influenced by their perceptions of their parents' expectations for academic achievement and maintenance of family roles and obligations. Chao's (1994) work on Asian American parenting suggests that Asian American parents are highly invested in their children's academic success and personal maturity. Chao has suggested that Chinese American parents (especially mothers) and teachers, use *guan* (translated as "to care for" or "to govern") to ensure that children understand and meet parents' and teachers' standards and expectations. In an interview study with Chinese American immigrant mothers (Chao, 1995), mothers reported being highly invested in their children. Several key themes were identified in their goals for their children: fostering and maintaining a lifelong, loving parent-child relationship; ensuring that their children attend the best schools so that they can have future financial/career success and honor their family; instilling understanding of the importance of obedience to parents; teaching respect and care for others; fostering an easy-going and adaptive personality; instilling good moral character; and maintaining ethnic culture. Chao's research focuses specifically on Chinese American parenting, but research on Korean American and Indian American families suggest

that parental investment in academic success and family roles (e.g., filial piety) is high among all three ethnic groups (Kim & Roehner, 2002; Jambunathan, Burts, & Pierce, 2000; Tewari, Inman, & Sandhu, 2003).

Academic/career achievement and family role obligations are particular important domains for Asian Americans. In the study by Scott et al. (2002), the aimless future domain (as measured by the Worry Domains Questionnaire) was the domain in which Asian Americans reported the most worry. This finding is believed to reflect the high importance placed in academic and career achievement by Asian Americans, which has been documented in numerous studies (e.g., Chen & Stevenson, 1995; Eaton & Dembo, 1997). Research on Asian Americans suggests that family role obligations are also of particular significance. Research by Fuligni and colleagues suggest that East Asian Americans are highly invested in their role in the family and that they may have higher standards for their family role compared to White Americans. Specifically, East Asian American high school students place higher value and expectations on their role in assisting, supporting, and respecting their family compared to their White American peers (Fuligni, Tseng, & Lam, 1999) and this sense of family obligation increases after high school (Fuligni & Pedersen, 2002). Inman and Tewari (2003) also documented the importance of family role obligations among Asian Indian Americans.

To summarize, further research is needed to understand Asian Americans' experiences with worry. Much of the existing research on worry has focused primarily on White American populations, but there is some evidence to suggest that Asian Americans worry more than White Americans. Perceptions of living up to parental expectations (i.e., perceived discrepancies between one's performance and parental standards) and personal standards may explain possible

racial differences in worry frequency between Asian Americans and White Americans given the particular pressures placed upon Asian Americans in the domains of school and family.

CHAPTER 2

HYPOTHESES

The current study tests the following specific hypotheses:

1. Congruent with past studies examining ethnic/racial differences in worry, Asian Americans will report higher frequency of worry in the domains of school and family measured compared to White Americans but not differ from White Americans in levels of pathological worry (as measured by the Penn State Worry Questionnaire; PSWQ).
2. For both Asian Americans and White Americans, their perceptions of living up to their parents' expectations will be negatively related to pathological worry (as measured by the PSWQ) and worry frequency in domains of school and family (as measured by the Worry Domains Questionnaire; WDQ).
3. Standards will be positively related to pathological worry (as measured by the PSWQ) and worry frequency in the domains of school and family (as measured by the WDQ) for both Asian American and White American groups.
4. Perceptions of living up to parental expectations will be higher for White Americans than Asian Americans in the domains of school and family.
5. Standards will be higher for Asian Americans than White Americans in the domains of school and family.
6. Standards and perceptions of living up to parental expectations will mediate racial differences in worry frequency in specific domains of school and family.

CHAPTER 3

METHOD

Participants and Procedure

A total of 1,692 college students (67.6% female, 32.4% male) from University of California, Davis (UCD) and University of Illinois at Urbana-Champaign (UIUC) participated in the study. The rationale for collecting data at these two sites is that, though UCD and UIUC are similar in terms of being large, public universities, UCD has significantly more Asian American undergraduates as compared to UIUC (41% compared to 8%; University of California, Davis, 2007; University of Illinois at Urbana-Champaign, 2007). Of the 1,040 participants from UCD's participant pool, 1,035 reported attending UCD, 1 reported attending University of California, Santa Cruz, and 1 reported attending University of California, Berkeley during the regular academic year (data was collected during the summer quarter at UCD). All of the 652 participants from the UIUC participant pool reported attending UIUC. The mean age of the sample was 19.25 years (*SD* = 1.73, range from 17-40). Family socioeconomic status was assessed using the Nam-Powers-Boyd Occupational Status Scale (OSS; Nam & Boyd, 2004)[1]. For the entire sample, the mean OSS score, after taking the higher score for each individual participants' parents, was 75.69 (*SD* = 24.26, range from 4-100), indicating middle class status.

[1] The Nam-Powers-Boyd Occupational Status Scale (OSS) is based on educational and income of certain occupations from the 2000 U.S. Census. Scores range from 1 to 100, with 100 being the highest socioeconomic status level. 100 on the OSS correspond to the occupations of dentists, physicians, and surgeons, and 1 on the OSS correspond to the occupations of counter coffee shop, cafeteria, and dining room attendants and dishwashers. The OSS scores were coded by separate individuals, and discrepant scores were recoded after group discussion.

Examples of occupations that are scored a 75 or 76 on the OSS are: loan officer, computer support specialist, community or social service counselor, and writer/author. The UCD sample reported lower parental occupational status than the UIUC sample (72.65 vs. 80.38), $t(1641) = -6.39$, $p < .001$. There were differences between recruitment sites such that UCD had proportionately more women (70.7%) participants than the UIUC sample (62.6%), χ^2 (1, $N = 1692$) = 11.99, $p = .001$, $\varphi^2 = .08$. The UCD sample was slightly older than the UIUC sample (19.41 years, $SD = 1.98$ vs. 18.99 years, $SD = 1.17$), $t(1690) = 4.89$, $p < .001$. Of the total sample, 836 participants identified as Asian American and 856 identified as White American. Table 1 displays the ethnicities and generational statuses of the participants. Ethnic background was not collected for White American participants.

Participants were recruited through the psychology department subject pools at each data collection site. Participants completed the measures described below over the Internet from a computer of their choice. Some researchers have suggested that internet surveys may be vulnerable to responder and sampling biases, but others have found that such surveys are comparable to paper-and-pencil methods (Birnbaum, 2004; Kraut et al., 2004) or even linked to higher response rates to sensitive questions and decreased socially desirable responding compared to paper-and-pencil methods (Joinson, Woodley et al., 2007; Tourangeau and Yan, 2007). Participants were given course credit after completion of the study.

Measures

Demographics Questionnaire (Appendix A). A demographics questionnaire was used to assess participants' age, ethnicity, gender, generation status, parents' occupations (used to find their socioeconomic status according to the Nam-Powers-Boyd Occupational Status Scale; Nam & Boyd, 2004).

Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990). The PSWQ is a widely used 16-item questionnaire designed to measure pathological worry. Sample items include: "My worries overwhelm me" and "I've been a worrier all my life." In the present study, internal consistency was high for the total sample (α=.80), for Asian American participants (α=.81), for White American participants (α=.79).

Worry Domains Questionnaire (WDQ; Tallis et al., 1992). The WDQ is a 25-item questionnaire designed to measure worry in particular content domains. Initial validation and subsequent studies using this measure demonstrated excellent psychometric properties (Tallis et al., 1992; Stober, 1998). The WDQ measures worry in the following domains: Relationships (e.g., "That I am not loved"), Lack of Confidence (e.g., "That others will not approve of me"), Aimless Future (e.g., "That I'll never achieve my ambitions"), Work Incompetence (e.g., "That I don't work hard enough"), and Financial (e.g., "That my money will run out"). An additional 5 items, created by Berenbaum, Thompson, and Bredemeier (2007) were added to tap into worry in the school domain (e.g., "That I leave schoolwork unfinished"). An additional 7 items were created for this study to tap into worry in the family domains (see Appendix B for items). Internal consistency was adequate for each subscale: Relationships (α=.80; for Asian Americans, α=.80, for White Americans, α=.80), Lack of Confidence (α=.90; for Asian Americans, α=.91, for White Americans, α=.90), Aimless Future (α=.88; for Asian Americans, α=.88, for White Americans, α=.87), Work Incompetence (α=.86; for Asian Americans, α=.86, for White Americans, α=.85), Financial (α=.90; for Asian Americans, α=.90, for White Americans, α=.90), School (α=.89; for Asian Americans, α=.89, for White Americans, α=.88), and Family (α=.93; for Asian Americans, α=.92, for White Americans, α=.91). The results described below focus primarily on the domains of school and family.

Standards (Appendix C). Standards were assessed in the domains of academic/career achievement and family role obligations. Participants were asked to rate to what extent they believe they should do each of the items listed (1=not at all/never, 2=once in a while/a little, 3=sometimes/somewhat, 4=frequently/pretty much, 5=very often/very much so). Standards for the domain of academic/career achievement were adapted from the academic achievement subdomain of the Living Up to Parental Expectations Inventory (LPEI; Wang & Heppner, 2002). Sample items from the Wang and Heppner (2000) scale include: "study hard to get a high-paying job in the future" and "perform better than others academically." The original LPEI had good psychometric properties for a sample of Taiwanese college students. Standards for the domain of family role obligations were adapted from Family Obligations Scale (Fuligni et al., 1999; Fuligni, Yip, & Tseng, 2002), a 25-item scale examining standards for assisting, supporting, and respecting the family. Sample items include: "help out around the house" and "treat your parents with great respect." The original Family Obligations Scale demonstrated good psychometric properties for multiracial (i.e., Mexican American, Latin American, African American, East Asian American, Filipino American, and White American) high school (Fuligni et al., 1999; Fuligni et al., 2002) and college samples (Fuligni & Pedersen, 2002).

Perceptions of Living up to Parental Expectations. To assess for perceptions of living up to parental expectations, participants were provided the same items as the standards measure but were instead asked to rate to what extent they believe they are meeting their parents' expectations (1=not at all/never, 2=once in a while/a little, 3=sometimes/somewhat, 4=frequently/pretty much, 5=very often/very much so).

CHAPTER 4

RESULTS

Tests for Group Differences

To test for recruitment site, gender, and racial differences among the outcome variables, I conducted a series of multivariate analyses of variance (MANOVA) and estimated effect sizes (i.e., Cohen's *d*) with 95% confidence intervals. Table 2 displays the means, standard deviations, ranges for the UCD and UIUC subsamples and ANOVAs of site differences. No site differences were found between participants from UC Davis and those from UIUC on any of the outcome measures, therefore, participants from both sites were combined in subsequent analyses. There were gender differences such that women tended to report greater worry. Table 3 displays the means, standard deviations, ranges for the female and male subsamples and ANOVAs and effect sizes of gender differences. Gender differences were found on the PSWQ and worry about school, but not for worry about family. Subsequent analyses with worry about school as the outcome variable included gender as a covariate. A significant gender x race interaction was found for PSWQ, $F(1, 1688) = 4.56$, $p < .05$, but not for worry about family or school.

As hypothesized (Hypothesis 1), Asian Americans reported significantly higher worry frequency in the domains of school and family as measured by the WDQ but did not differ in terms of pathological worry as measured by the PSWQ. Also as hypothesized (Hypothesis 4), perceptions of living up to parental expectations in the domains of school and respect for the family were higher for White Americans than for Asian Americans. In addition, the hypothesis that Asian Americans would report higher standards in the domains of school and family (Hypothesis 5) was supported. Table 4 displays the displays the means, standard deviations, ranges for the Asian American and White American subsamples and ANCOVAs (controlling for

gender) and effect sizes of racial differences for the outcome variables and Table 5 displays the displays the means, standard deviations, ranges for the Asian American and White American subsamples and ANCOVAs (controlling for gender) and effect sizes of racial differences for the predictor variables.

Exploratory Factor Analysis of Standards Measure

Because the standards measure used in the present study was adapted from existing measures to tap into several proposed standards domains, I conducted a principal components analysis with a varimax rotation to determine its factor structure. Using a traditional cutoff of .40 for the factor loadings, five factors emerged, which explained 61.74% of the variance. These factors mapped onto: (1) current academic performance standards (5 items; Asian American α=.85, White American α=.83), (2) standards for preparing for future career (3 items; Asian American α=.85, White American α=.86), (3) standards for living with the family in the future (2 items; Asian American α=.66, White American α=.54), (4) standards for respecting family (6 items; Asian American α=.83, White American α=.80), and (5) standards for spending time with the family (7 items; Asian American α=.87, White American α=.82). The percentages of variance accounted for by these five factors were: 32.89, 12.25, 7.32, 4.84, and 4.44. See Table 6 for the items making up each factor and Table 5 for the correlations between factors.

A principal components analysis yielded similar loadings on five factors for the perceptions of living up to parental expectations measure. The reliability estimates for the perceptions of living up to parental expectations domain are as follows: (1) current academic performance (Asian American α=.88, White American α=.83), (2) preparing for future career (Asian American α=.89, White American α=.86), (3) living with the family in the future (Asian American α=.87, White American α=.85), (4) respecting family (Asian American α=.85, White

American α=.83), and (5) spending time with the family (Asian American α=.89, White American α=.86). The subscale of living with the family in the future was dropped in subsequent analyses because of its poor reliability estimates on the standards measure.

Correlational Analyses

To examine the hypotheses that perceptions of living up to parental expectations is negatively related to worry (Hypothesis 2) and standards are positively related to worry (Hypothesis 3), controlling for gender, I conducted correlations between the proposed predictors of worry (i.e., perceptions of living up to parental expectations and personal standards) and worry as measured by the PSWQ and the WDQ. In a previous study, Berenbaum, Thompson, and Bredemeier (2007) computed a composite worry score of standardized PSWQ and WDQ scores because of the large correlation between these two measures. However, in the present study, an examination of the difference between the magnitude of correlations for Asian and White Americans revealed that the associations between PSWQ and WDQ (*r*s = .37 vs. .54, respectively, $z = -4.33$, $p < .001$) were significantly weaker in the former compared with the latter ethnic group; therefore, a composite worry score from PSWQ and WDQ scores was not computed. Further, because some of the predictors in this study (i.e., standards and perceptions of living up to parental expectations) were focused in specific domains (i.e., family and school), analyses to examine the predictors' potential impacts on the worry the domains examined were conducted using individual WDQ subscale scores (specifically, School and Family) rather than a composite WDQ score. Results of the correlational analyses, conducted separately for Asian Americans and White Americans are displayed in Table 5.

I hypothesized that perceptions of living up to parental expectations would be negatively related to worry about school and family, that is to say, the more individuals perceive that they

are living up to their parents' expectations, the less they will worry (Hypothesis 2). As Table 5 shows, for both Asian Americans and White Americans, perceptions of living up to parental expectations in these domains were not related to pathological worry. This hypothesis was partially supported for worry associated with school and family. Specifically, for Asian Americans, perceptions of living up to parental expectations of current academic performance was modestly related to worry about school and family, but perceptions of living up to parental expectations of preparation for future career, respect for the family, and family time were not related to worry about school or family. For White Americans, perceptions of living up to parental expectations of current academic performance, preparation for future career, and respect for the family were all modestly negatively related to worry about school and family.

I hypothesized that standards about school and family would be related to worry for both Asian Americans and White Americans (Hypothesis 3). Standards about school (current academic performance and preparation for future career) and family (respect for family and spending time with family) were modestly correlated with pathological worry for both Asian Americans and White Americans. That is to say, those with higher standards tended to endorse more pathological worry. For both Asian Americans and White Americans, standards in the domains of school and family were also related to worry frequency in the school and family domains as measured by the WDQ.

Mediational Analyses

Multiple mediation analyses were conducted to test the hypotheses that perceptions of living up to parental expectations and personal standards would mediate racial differences in worry frequency in the school and family domains (Hypothesis 6). As recommended by Baron and Kenny (1986), to establish mediation, regression equations must be conducted to verify

significant relationships between the independent variable and the mediator, the independent and dependent variable, and the mediator and dependent variable after controlling for the effects of the independent variable. In addition to meeting these conditions, a substantial reduction in the effect of the independent variable on the dependent variable must occur when the mediator is added.

I conducted two multiple mediation analyses to look at (a) racial differences in worry about school, and (b) racial differences in worry about family. I estimated direct and indirect effects of multiple mediators (perceptions of living up to parental expectations and standards) using the non-parametric bootstrapping procedure as recommended by Preacher & Hayes (2008). This statistical method has several advantages: (1) it allows for multiple mediators to be tested simultaneously; (2) it allows for non-normality of the sampling distribution; (3) it has higher power than traditional tests of mediation, such as the Sobel test; and (4) it reduces Type I error because fewer inferential tests are needed. Analyses were conducted using the SPSS macros provided by Preacher and Hayes (2008).

Racial differences in worry about school. In the first set of meditational analyses examining racial differences in worry about school, worry about school was entered as the dependent variable, race (Asian = 0, White = 1) was entered as the independent variable, and perceptions of living up to parental expectations for current academic performance, perceptions of living up to parental expectations for preparing for future career, personal standards for current academic performance, and personal standards for preparing for future career were entered as potential mediators. Gender was entered as a control variable on the dependent variable.

The hypothesis that perceptions of living up to parental expectations and standards would

explain racial differences in worry about school (Hypothesis 6) was supported. Results of the bootstrap tests showed that the total effect of racial group membership on worry about school (total effect = -2.14, $p < .001$) was attenuated but remained significant when the mediators were included in the model (direct effect of race = -1.12, $p < .001$). The specific indirect effects of each proposed mediator showed that living up to parental expectations for current academic performance, with a point estimate of -.85 and 99% Bias-corrected accelerated (BCa) CI of -1.21, -.55 and standards for preparation for future career, with a point estimate of -.15 and 99% BCa CI of -.35, -.01 were all unique mediators; whereas perceptions of living up to parental expectations for future career, with a point estimate of -.02 and 99% BCa CI of -.12, .09, and standards for current academic performance, with a point estimate of .0019 and 99% BCa CI of –.080, .10, did not add to the overall model.

In sum, the bootstrap analyses indicate that perceptions of living up to parental expectations for current academic performance and standards for preparing for a future career partially mediate the link between racial group membership and worry about school. Race and gender (the control variable) continued to play a statistically significant role on the dependent variable even with the mediators in the model (see Figure 1 for full mediational model).

Racial differences in worry about family. In the multiple meditational analyses examining racial differences in worry about family, worry about family was entered as the dependent variable, race (Asian = 0, White = 1) was entered as the independent variable, and perceptions of living up to parental expectations for family respect, perceptions of living up to parental expectations for spending time with family, personal standards for family respect, and personal standards for spending time with family were entered as potential mediators. Gender was entered as a control variable on the dependent variable.

My hypothesis that perceptions of living up to parental expectations and standards would explain racial differences in worry about family (Hypothesis 6) was supported. Results of the bootstrap test showed that the total effect of racial group membership on worry about school (total effect = -4.15, $p < .001$) was attenuated but remained significant when the mediators were included in the model (direct effect of race = -3.12, $p < .001$). The specific indirect effects of each proposed mediator showed that only standards for respecting the family, with a point estimate of -.80 and 99% BCa CI of -1.20, -.54 was a unique mediator; whereas perceptions of living up to parental expectations for respecting the family, with a point estimate of -.18 and 99% BCa CI of -.38, .02; perceptions of living up to parental expectations for spending time with family, with a point estimate of -.01 and 99% BCa CI of -.11, .04, and standards for family time, with a point estimate of -.04 and 99% BCa CI of –.22, .11, did not add to the overall model.

In sum, the bootstrap analyses indicate that standards for respecting the family partially mediate the link between racial group membership and worry about school. Race and gender (the control variable) continued to play a statistically significant role on the dependent variable even with the mediators in the model (see Figure 2 for full mediational model).

CHAPTER 5

DISCUSSION

The results of the present study add to existing literature on racial/cultural variations in the experiences of worry between Asian Americans and White Americans (e.g., Scott, Eng, & Heimberg, 2002). This research indicates that Asian Americans do not differ from White Americans in terms of severity of pathological worry but point to the specific domains of school and family in which Asian Americans worry more than White Americans. The results of this study suggest that two factors account for racial differences in worry frequency in these specific domains: (1) personal standards, and (2) perceptions of living up to parental expectations.

The findings that Asian American and White American college students do not differ in terms of self-reported pathological worry but that Asian Americans report higher frequency of worry across multiple domains compared to White Americans are consistent with previous results examining racial differences in worry (Scott et al., 2002). In a previous study with a smaller sample utilizing similar measures of worry (i.e., PSWQ and WDQ), Scott et al. (2002) found no significant differences in pathological worry but higher frequency of worry among Asian Americans compared to White Americans. However, because of their small Asian American subsample, Scott et al. were unable to determine whether the racial difference in worry frequency was statistically significant. In the present study, effect size and confidence interval estimates in the medium range suggest that these racial differences are robust.

Of note, Asian Americans reported higher frequency of worry in domains related to family and school—two areas of particular importance to Asian American young adults given their age and racial/ethnic/cultural and immigrant backgrounds. Asian American students report greater fear of academic failure compared to other groups (Eaton & Dembo, 1997; Zusho,

Pintrich, & Cortina, 2005). This may be reflective of a high cost, all-or-nothing mentality about education and other limited paths to social and economic success for Asian Americans (see Xie & Goyette, 2003 for a review of theories of social mobility processes for Asian Americans). Asian Americans' emphasis on and concern for family have been noted in the work of various scholars. For example, a qualitative study conducted by Pyke (2000) on Korean Americans and Vietnamese Americans found that these Asian Americans perceived themselves to be concerned about and committed to the care of their families more so than White Americans. Concern about and commitment to school and family for Asian Americans were also reflected in racial differences in personal standards and perceptions of living up to parental expectations for Asian Americans compared with White Americans.

Consistent with hypotheses, Asian Americans reported that they felt they were not living up to their parents' expectations as much as did the White Americans in the domains of family and school. This finding is consistent with a study conducted by Chang (1998), who found that among 89 Asian American and 96 White American college students, Asian Americans reported significantly higher parental expectations. The finding that Asian Americans reported higher standards regarding respect for family but not school is somewhat surprising. Despite previous research indicating that Asian Americans place greater emphasis on academics than White Americans (e.g., Chen & Stevenson, 1995; Eaton & Dembo, 1997), the two groups in this study did not differ in their standards for school. It is possible that this is reflective of the prestigious and competitive nature of both recruitment sites and that expected racial differences in school standards suggested in previous work may be found in more academically diverse samples. What these results indicate is that perceptions of living up to parental expectations and personal

standards are domain-specific and vary depending on a person's environmental and racial/cultural contexts.

As hypothesized, personal standards and perceptions of living up to parental expectations partially mediated racial differences in worry frequency in the domain of respect for the family. Perception of living up to parental expectations also partially mediated racial differences in frequency of worry about school. These findings support Higgins' self-discrepancy theory and suggest that Asian Americans worry more compared to White Americans because they have high standards and low perceptions that they are meeting their parents' expectations. Only partial mediation was established, indicating that other factors contribute to racial differences in frequency of worry about school and family. For example, intolerance of uncertainty, negative problem orientation, and maladaptive beliefs about worry, all found to predict pathological worry, may play roles in explaining racial differences. Perfectionism and coping styles (such as behavioral inhibition vs. activation) are other potential contributors to these racial differences.

That Asian Americans and White Americans differ in worry frequency but not pathological worry sparks several measurement and theoretical issues. Despite past research showing a strong relationship between the PSWQ, a measure of pathological worry, and the WDQ, a measure of non-pathological worry, this study failed to demonstrate such a relationship among Asian Americans. This finding may be an indication that the measures used are more valid for Asian Americans than for White Americans given that these measures are designed to capture different types of worry—pathological (i.e., distressing and difficult to control) and non-pathological (i.e., everyday concerns)—and as such are not expected to be highly correlated. Given that the WDQ does not define worry, the construct is open to participants' interpretation.

It may be the case that as a group, Asian Americans are interpreting worry on the WDQ as less pathological than are White Americans.

This finding also suggests that the nature of worry for Asian Americans may not be, as is typically conceptualized, pathological. That is to say, worry may be an adaptive and culturally appropriate strategy for managing stress and anxiety for Asian Americans. Norem (2008)'s concept of defensive pessimism suggests that individuals may manage their anxieties about failure by being pessimistic (i.e., setting low expectations) while worrying (i.e., mentally rehearsing potential negative outcomes) and that defensive pessimism can be adaptive in the long term by motivating individuals to set goals and problem solve to meet those goals (Norem & Cantor, 1986). The application of Norem's work for Asian Americans has empirical support through a study by Chang (1996), who found that Asian Americans tend to be more pessimistic than White Americans, and that pessimism is correlated with problem-solving strategies. Norem (2008) argues that defensive pessimism may be appropriate in cultures that value self-criticism over self-promotion, such as Asian and Asian American cultures.

Several limitations should be noted as they provide caution for interpretations of the findings and suggest opportunities for further research. The present study was conducted with an academically homogenous group of high-achieving undergraduate students. The impact of perceptions of living up to parental expectations and personal standards on worry frequency in the domains of school and family may be substantially different with other Asian Americans and White Americans. This study focused on two specific domains of worry for Asian Americans and White Americans. Further research is needed to explore other specific domains of worry for both Asian Americans and White Americans. Conducting further studies examining worry with older Asian Americans will also prove valuable, as several studies have suggested that Asian

American adults are less prone to worry and other types of anxiety than their White American counterparts (Watari & Brodbeck, 2000; Yamamoto et al., 1985). The study's conclusions would be strengthened were there an acculturation measure, as it is possible that orientations to Asian ethnic or American cultures moderate the impact of perceptions of living up to parental expectations and personal standards on worry frequency. The reliance on self-report measures may obscure the negotiation parents and their college-age children must play in generating and meeting expectations for the family, school, and other important domains. Future research would benefit from examining the reciprocal and dynamic nature of negotiating expectations longitudinally and using multiple informants (e.g., both parents and children). Finally, this study points to potentially differential functions of worry for White Americans than for White Americans. Future research is needed to understand what are those functions (e.g., Is worry an adaptive coping style for Asian Americans and under what conditions?).

The results of the present study have several implications for the treatment of worry among Asian Americans. Clinicians working with Asian Americans who report frequent worries must assess their clients' impairment in functioning due to worry, as worry frequency alone does not imply dysfunction. This study suggests that efforts to reduce worry among Asian American college students must target their and their parents' expectations. There is growing support for clinical efficacy of acceptance-based therapies, considered the third wave of cognitive and behavioral therapies, in the treatment of anxiety and depression (Hayes, 2004). Hall, Hong, Zane, and Meyer (2010) suggest that acceptance-based therapies show promise for application to Asian Americans given their Eastern-based roots, and at the same, may still need to be adapted for better cultural syntonicity. Using Hall et al.'s guidelines, an acceptance-based treatment for worry may emphasize understanding and accepting both the client's and their parents' values of

and expectations for family and academic achievement and in turn motivate the client to pursue these values through value-based behaviors.

This study was the first to demonstrate that perceptions of living up to parental expectations and standards account for racial differences in worry about family and school between Asian Americans and White Americans. Specifically, Asian Americans reported feeling that they were living up to parental expectations to a lesser degree than White Americans; at the same time, Asian Americans tended to report higher standards for preparing for a future career and for respecting and spending time with their family. The current study suggests that Asian American college students may be setting high standards for themselves with regards to how they must respect and support their families and concurrently, or as a consequence, worry frequently about their families. In addition, Asian Americans' worry about school may be partly a result of their perceptions of not living up to their parents' expectations for their current academic performance as well as their own standards for how they must prepare for a future career. However, the finding that these high standards, combined with feeling that they are not quite living up to parental expectations and with more frequent worries, did not necessarily translate into more pathological forms of worrying for Asian Americans. These patterns of findings suggest that worrying may serve differential functions for Asian Americans than for White Americans and that worrying about family and school may be a normal and perhaps beneficial coping strategy for Asian Americans compared to White Americans. This study points to the importance of examining how individuals' personal standards and the internalization of parental expectations influence cognitive processes of worry.

TABLES AND FIGURES

Table 1

Ethnicity and Generational Status of Participants

	Generation Status						
	1st	1.5	2nd	3rd	4th	Other	Total *n*
Chinese	55	81	207	34	9	3	389
Multiethnic Asian	12	28	88	11	3	5	147
South Asian	15	48	118	5	1	0	187
Korean	12	14	32	2	0	4	64
Japanese	0	1	1	1	2	0	5
Filipino	0	0	3	0	0	0	3
Southeast Asian	5	7	19	3	1	0	35
White	8	36	77	195	534	4	854
Total *n*	107	215	545	251	550	16	1684

Note. Multiethnic Asian comprises Asian Americans with parents from distinct Asian ethnic groups (e.g., Chinese and Korean) or who have one Asian ethnic parent and one parent who is not Asian (e.g., White, Mexican). South Asian comprises self-identified Asian Americans with parents from India or Pakistan. Southeast Asian comprises self-identified Asian Americans with parents from Southeast Asia (e.g., Vietnam, Cambodia).

Table 2

Site Differences in Distress Measures

	UCD (*n* = 1040)		UIUC (*n* = 652)		
	Range	*Mean (SD)*	Range	*Mean (SD)*	*F*
PSWQ	6-70	39.41 (13.54)	6-70	39.25 (13.88)	.06
WDQ- School	0-20	10.27 (5.13)	0-20	9.85 (5.10)	2.67
WDQ- Family	0-28	8.49 (7.22)	0-28	7.92 (6.60)	2.63

Note. PSWQ – Penn State Worry Questionnaire. WDQ – Worry Domains Questionnaire. * p < .05.

Table 3

Gender Differences in Distress Measures

	Females (n = 1143)		Males (n = 549)			
	Range	*Mean (SD)*	Range	*Mean (SD)*	*F*	Cohen's *d* (CI)
PSWQ	6-70	41.58 (13.43)	6-70	34.69 (12.96)	100.04***	.52 (.42, .62)
WDQ- School	0-20	10.48 (5.18)	0-20	9.33 (4.91)	19.08***	.23 (.12, .33)
WDQ- Family	0-28	8.47 (7.18)	0-28	7.86 (6.55)	2.87	.09 (.01, .19)

Note. PSWQ – Penn State Worry Questionnaire. WDQ – Worry Domains Questionnaire. * $p <$ .05. ** $p <$ .01. *** $p <$ .001. CI = 95% confidence interval.

Table 4

Racial Differences in Distress Measures

	Asian Americans (n = 836)		White Americans (n = 856)			
	Range	*Mean (SD)*	Range	*Mean (SD)*	*F*	Cohen's *d* (CI)
PSWQ	8-70	39.86 (12.69)	6-70	38.84 (14.55)	2.37	.07 (.02, 0.17)
WDQ- School	0-20	11.12 (5.13)	0-20	9.12 (4.92)	67.00*	.40 (.30, .49)
WDQ- Family	0-28	10.32 (7.23)	0-28	6.28 (6.12)	155.41*	.60 (.51, .70)

Note. PSWQ – Penn State Worry Questionnaire. WDQ – Worry Domains Questionnaire. * $p <$ .001. CI = 95% confidence interval.

Table 5

Partial Correlations among Predictor and Outcome Variables Controlling for Gender for Asian Americans (above the diagonal) and White Americans (below the diagonal)

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Pathological Worry	-	.33**	.25**	.00	.02	.06	.07	.07*	.08*	.09**	.11**
2. Worry about School	.48**	-	.58**	-.17**	-.06	-.01	-.03	.13**	.13**	.13**	.05
3. Worry about Family	.39**	.58**	-	-.12**	-.04	.01	.00	.11**	.12**	.22**	.16**
4. LPE-Current Academic	.06	-.28**	-.18**	-	.62**	.45**	.34**	.33**	.21**	.13**	.12**
5. LPE-Career Prep	.03	-.08*	-.12**	.44**	-	.49**	.37**	.33**	.51**	.27**	.25**
6. LPE-Respect	.03	-.08*	-.11**	.36**	.40**	-	.69**	.24**	.25**	.57**	.45**
7. LPE-Family Time	.05	-.02	-.06	.24**	.26**	.68**	-	.15**	.17**	.44**	.58**
8. Standards-Current Acad.	.16**	.00	.02	.50**	.30**	.18**	.10**	-	.65**	.46**	.41**
9. Standards-Career Prep	.11**	.12**	.11**	.05	.56**	.11**	.03	.42**	-	.47**	.38**
10. Standards-Respect	.16**	.12**	.18**	.10**	.16**	.54**	.39**	.23**	.23**	-	.69**
11. Standards-Family Time	.14**	.11**	.10**	.11**	.16**	.40**	.56**	.25**	.20**	.66**	-

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

Table 6

Five-Factor Correlated Solution for the Standards Scale Items

Subscale and Item	Factor Loadings 1	2	3	4	5
Factor 1 (Standards for Spending Time with Family)					
spend at least half of my free time with my grandparents, cousins, aunts, and uncles)	.76	-.01	-.21	.16	-.15
spend at least half my free time at home with my family	.84	.03	-.11	.06	-.06
run errands that the family needs done without them asking	.71	.04	.09	-.11	-.01
spend every holiday with my family	.48	.02	.38	-.29	.01
help out around the house	.58	.11	.32	-.20	.06
spend time with my family on most weekends	.76	.01	-.12	.00	.00
eat more than half my meals with my family whenever I'm home	.45	.11	.02	-.27	.12
Factor 2 (Current Academic Standards)					
have at least a 3.7 GPA every semester	.02	.86	-.11	.14	-.00
make my parents proud of my academic performance	.07	.64	.17	-.20	-.02
perform better academically than most of my classmates	-.02	.63	-.01	.04	-.35
receive straight A's in my classes	.15	.79	-.15	.14	-.12
get a degree in a reasonable amount of time (e.g., a bachelor's degree in four years or less)	-.06	.62	.09	-.12	.01
Factor 3 (Standards for Living with Parents in the Future)					
live at home with my parents until I am married	.17	-.05	-.68	-.19	-.06
have my parents live with me when I get older	.17	.11	-.64	-.28	.08
Factor 4 (Standards for Respecting the Family)					
always treat my parents with great respect	.09	.14	.27	-.66	.08
do well in all aspects of my life for the sake of my family	.13	-.08	-.09	-.61	-.14
always follow my parents' advice about choosing friends	.05	.06	-.06	-.67	-.15
always follow my parents' advice about choosing a job or major in college	.05	-.12	-.22	-.54	-.27
always make sacrifices for my family	.15	-.06	-.02	-.67	-.07
support my parents financially in the future	-.05	.17	-.31	-.62	.07
Factor 5 (Standards for Preparing for Future Career)					
study hard to get a six figure annual salary (i.e., at least $100,000) within 5-10 years	-.06	.24	-.02	-.13	-.62
pursue a prestigious career (e.g., doctor, lawyer, engineer)	.02	.06	.09	-.03	-.89
study a prestigious major in school (e.g., engineering, pre-medicine)	.06	.00	.05	-.03	-.89

Table 7

Racial Differences in Proposed Predictors of Worry Controlling for Gender

	Asian Americans (*n* = 836)		White Americans (*n* = 856)			
	Range	*Mean (SD)*	Range	*Mean (SD)*	*F*	Cohen's *d* (CI)
LPE-Current Academic	1-5	3.01 (1.02)	1-5	3.60 (.89)	152.27**	.62 (.52, .71)
LPE-Career Prep	1-5	3.14 (1.14)	1-5	3.37 (1.10)	20.54**	.21 (.11, .30)
LPE-Respect for Family	1-5	3.29 (.85)	1-5	3.39 (.82)	6.24*	.12 (.02, .22)
LPE-Family Time	1-5	3.12 (.94)	1-5	3.20 (.89)	2.44	.09 (.01, .18)
Standards-Current Academic	1-5	3.82 (.88)	1-5	3.84 (.75)	.03	.02 (.07, .12)
Standards-Career Prep	1-5	3.59 (1.09)	1-5	3.25 (1.09)	37.15**	.31 (.22, .41)
Standards-Respect for Family	1-5	3.58 (.76)	1-5	3.30 (.73)	62.89**	.38 (.28, .47)
Standards-Family Time	1-5	3.36 (.84)	1-5	3.20 (.76)	21.33**	.20 (.10, .30)

Note. LPE = Perceptions of living up to parental expectations. * $p < .05$, ** $p < .001$. CI = 95% confidence interval.

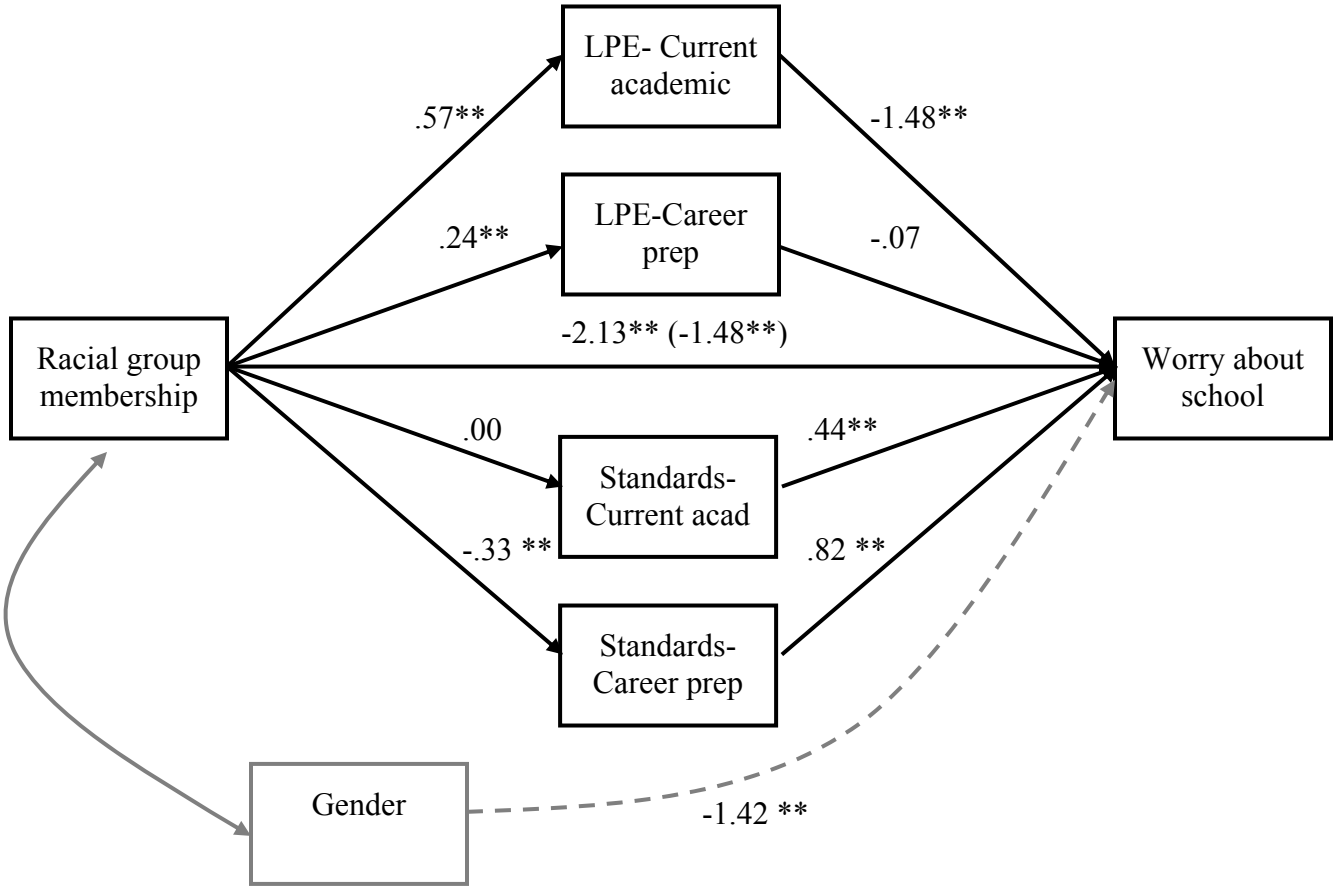

Figure 1. Mediating effects of perceptions of living up to parental expectations and standards for school on the relationship between race and worry about school.

Note. Path values represent unstandardized regression coefficients. The value outside of the parentheses represents the total effect of racial group membership on worry about school prior to the inclusion of the mediating variables. Value in parentheses represents the direct effect, from bootstrapping analyses, of racial group membership on worry about school after the mediators are included. *p < .05. **p < .01. For racial group membership, Asian = 0, White = 1. For gender, female = 0, male = 1.

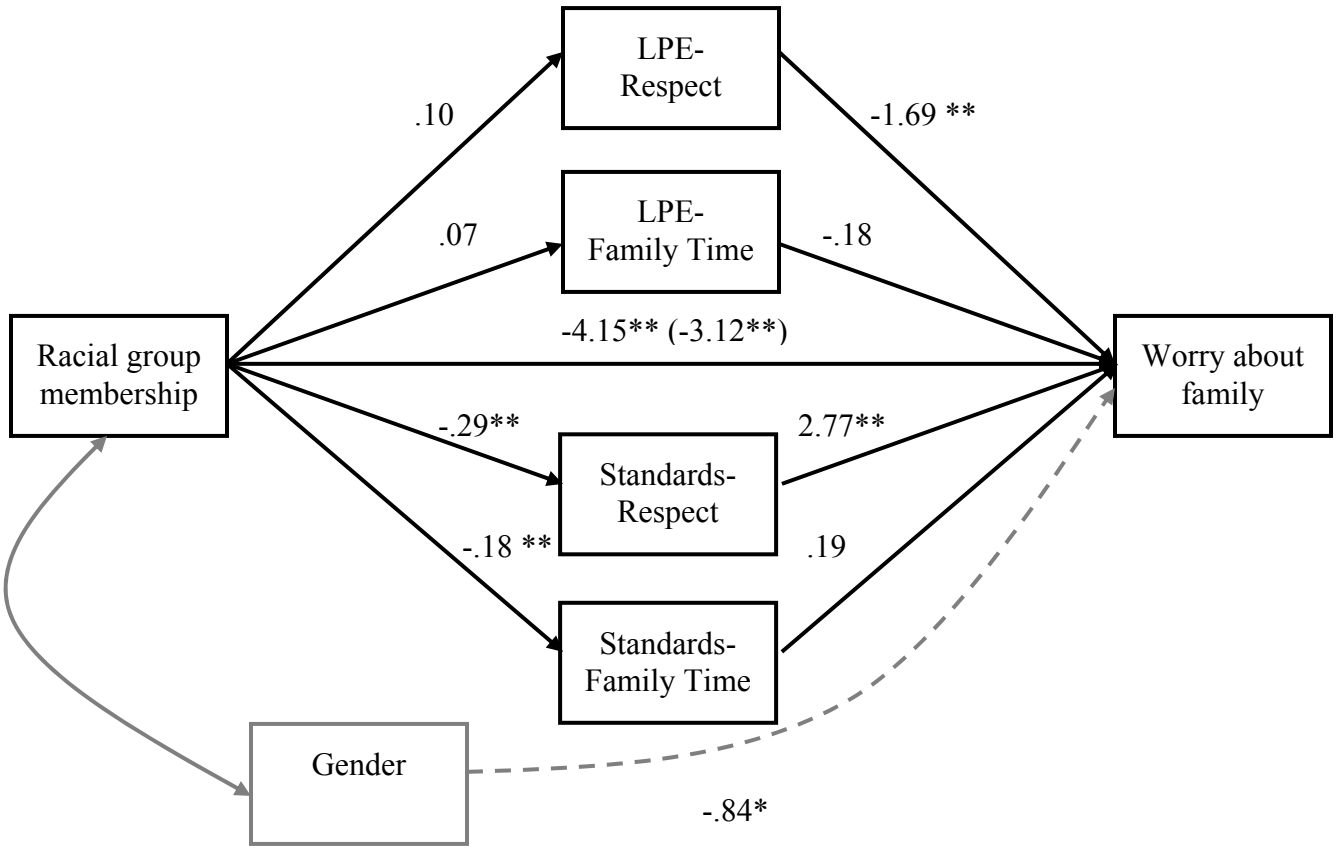

Figure 2. Mediating effects of perceptions of living up to parental expectations and standards for family on the relationship between race and worry about family.

Note. Path values represent unstandardized regression coefficients. The value outside of the parentheses represents the total effect of racial group membership on worry about family prior to the inclusion of the mediating variables. Value in parentheses represents the direct effect, from bootstrapping analyses, of racial group membership on worry about family after the mediators are included. *p < .05. **p < .01. For racial group membership, Asian = 0, White = 1. For gender, female = 0, male = 1.

REFERENCES

Beck, A. T., & Clark, D. A. (1997). An information processing model of anxiety: Automatic and strategic processes. *Behaviour Research and Therapy, 35,* 49-58.

Berenbaum, H., Bredemeier, K., & Thompson, R. J. (2008). Intolerance of uncertainty: Exploring its dimensionality and associations with need for cognitive closure, psychopathology, and personality. *Journal of Anxiety Disorders, 22,* 117-125.

Berenbaum, H., Thompson, R. J., & Bredemeier, K. (2007). Perceived threat: Exploring its association with worry and its hypothesized antecedents. *Behaviour Research and Therapy, 45*, 2473-2482.

Birnbaum, M. H. (2004). Human research and data collection via the internet. *Annual Review of Psychology, 55*, 803-832.

Bollen, K. (1989). *Structural equations with latent variables*. New York: John Wiley.

Borkovec, T. D., Alcaine, O. M., & Behar, E. (2004). Avoidance theory of worry and generalized anxiety disorder. In R. G. Heimberg, C. L. Turk & D. S. Mennin (Eds.), *Generalized anxiety disorder: Advances in research and practice* (pp. 77-108). New York: Guilford Publications.

Borkovec, T. D., Hazlett-Stevens, H., & Diaz, M. L. (1999). The role of positive beliefs about worry in generalized anxiety disorder and its treatment. *Clinical Psychology & Psychotherapy, 6*, 126-138.

Borkovec, T. D., & Roemer, L. (1995). Perceived functions of worry among generalized anxiety disorder subjects: Distraction from more emotionally distressing topics? *Journal of Behavior Therapy and Experimental Psychiatry, 26*, 25-30.

Buhr, K., & Dugas, M. J. (2002). The intolerance of uncertainty scale: Psychometric properties of the English version. *Behaviour Research and Therapy, 40*(8), 931-945.

Buhr, K., & Dugas, M. J. (2006). Investigating the construct validity of intolerance of uncertainty and its unique relationship with worry. *Journal of Anxiety Disorders, 20*, 222-236.

Chang, E. C. (1998). Cultural differences, perfectionism, and suicidal risk in a college population: Does social problem solving still matter? *Cognitive Therapy and Research, 22*, 237-254.

Chang, E. C. (2001). A look at the coping strategies and styles of Asian Americans: Similar and different? In C. R. Snyder (Ed.), *Coping with stress: Effective people and processes* (pp. 222-239). New York: Oxford University Press.

Chang, E. C., Zumberg, K. M., Sanna, L. J., Girz, L. P., Kade, A. M., Shair, S. R., et al. (2007). Relationship between perfectionism and domains of worry in a college student population: Considering the role of BIS/BAS motives. *Personality and Individual Differences, 43,* 925-936.

Chao, R. K. (1994). Beyond parental control and authoritarian parenting style: Understanding Chinese parenting through the cultural notion of training. *Child Development, 65*, 1111-1119.

Chen, C., & Stevenson, H. W. (1995). Motivation and mathematics achievement: A comparative study of Asian American, Caucasian American, and East Asian high school students. *Child Development, 66,* 1215-1234.

Chen, G. A., LePhuoc, P., Guzmán, M. R., Rude, S. S., & Dodd, B. G. (2006). Exploring Asian American racial identity. *Cultural Diversity & Ethnic Minority Psychology, 12*, 461-476.

Chen, G. A. (2006). The complexity of "Asian American identities": The intersection of multiple social identities. Unpublished doctoral dissertation, University of Texas, Austin.

Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. *Journal of Abnormal Psychology, 100*, 316-336.

Davey, G. C. L., Tallis, F., & Capuzzo, N. (1996). Beliefs about the consequences of worrying. *Cognitive Therapy and Research, 20*, 499-520.

Dugas, M. J., Freeston, M. H., & Ladouceur, R. (1997). Intolerance of uncertainty and problem orientation in worry. *Cognitive Therapy and Research, 21,* 593–606.

Dugas, M. J., Gagnon, F., Ladouceur, R., & Freeston, M. H. (1998). Generalized anxiety disorder: A preliminary test of a conceptual model. *Behaviour Research and Therapy, 36*, 215-226.

Dugas, M. J., Gosselin, P., & Landouceur, R. (2001). Intolerance of uncertainty and worry: Investigating specificity in a nonclinical sample. *Cognitive Therapy & Research, 25*, 551-558.

Dugas, M. J., Savard, P., Gaudet, A., Turcotte, J., Laugesen, N., Rochibaud, M., et al. (2006). Can the components of a cognitive model predict the severity of generalized anxiety disorder? *Behavior Therapy, 38,* 169-178.

D'Zurilla, T. J., & Nezu, A. M. (1990). Development and preliminary evaluation of the Social Problem-Solving Inventory (SPSI). *Psychological Assessment*, *2*, 156-163.

Eaton, M. J., & Dembo, M. H. (1997). Differences in the motivational beliefs of Asian American and non-Asian students. *Journal of Educational Psychology, 89*, 433-440.

Emmons, R. A. (1986). Personal strivings: An approach to personality and subjective well-being. *Journal of Personality and Social Psychology, 51*, 1058-1068.

Fabrigar, L. R., Wegner, D. T., MacCallum, R. C. & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods,* 4, 272-299.

Foa, E. B., & Kozak, M. J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin, 99*, 20-35.

Freeston, M. H., Rhéaume, J., Letarte, H., Dugas, M. J., & Ladouceur, R. (1994). Why do people worry? *Personality and Individual Differences, 17*, 791-802.

Fuligni, A. J., & Pedersen, S. (2002). Family obligation and the transition to young adulthood. *Developmental Psychology, 38*, 856-868.

Fuligni, A. J., Tseng, V., & Lam, M. (1999). Attitudes toward family obligations among American adolescents with Asian, Latin American, and European backgrounds. *Child Development, 70*, 1030-1044.

Fuligni, A. J., Yip, T., & Tseng, V. (2002). The impact of family obligation on the daily activities and psychological well-being of Chinese American adolescents. *Child Development, 73*, 302-314.

Gosselin, P., Ladouceur, R., Langlois, F., Freeston, M. H., Dugas, M. J., & Bertrand, J. (2003). Développement et validation d'un nouvel instrument évaluant les croyances erronées à l'égard des inquiétudes. [Development and validation of a new measure of erroneous beliefs about worry]. *Revue Européenne de Psychologie Appliquée, 53*(3-4),199-211.

Grant, B. F., Hasin, D. S., Stinson, F. S., Dawson, D. A., Ruan, W. J., Goldstein, R. B., et al. (2005). Prevalence, correlates, co-morbidity, and comparative disability of DSM-IV generalized anxiety disorder in the USA: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Psychological Medicine, 35,* 1747-1759.

Greenberg, M. S. (1980). A theory of indebtedness. In K. J. Gergen, M. S. Greenberg, & R. H. Wills (Eds.), *Social exchange: Advances in theory and research*. New York: Plenum.

Hall, G. C. N., Hong, J. J., Zane, N. W. S., Meyer, O. L. (2010). *Culturally-competent treatments for Asian Americans: The relevance of mindfulness and acceptance-based psychotherapies.* Manuscript submitted for publication.

Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior Therapy, 35,* 639-665.

Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review, 94*, 319-340.

Higgins, E. T., Bond, R. N., Klein, R., & Strauman, T. (1986). Self-discrepancies and emotional vulnerability: How magnitude, accessibility, and type of discrepancy influence affect. *Journal of Personality and Social Psychology, 51*, 5-15.

Higgins, E. T., Klein, R., & Strauman, T. (1985). Self-concept discrepancy theory: A psychological model for distinguishing among different aspects of depression and anxiety. *Social Cognition, 3*, 51-76.

Holowka, D. W., Dugas, M. J., Francis, K., & Laugesen, N. (2000). Measuring beliefs about worry: A psychometric evaluation of the Why Worry-II questionnaire. Association for Advancement of Behavior Therapy: New Orleans, LO.

Hune, S. (2002). Demographics and diversity of Asian American college students. *New Directions for Student Services,* 97, 11.

Hwang, B., Grant, B. F., Dawson, D. A., Stinson, F. S., Chou, S. P., Saha, T. D., et al. (2006). Race-ethnicity and the prevalence and co-occurrence of Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, alcohol and drug use disorders and Axis I and II disorders: United States, 2001 to 2002. *Comprehensive Psychiatry, 47*, 252-257.

Hwang, S. (2005, November 19). The new white flight. *The Wall Street Journal.* Retrieved from http://wsj.com

Inman, A. G., & Tewari, N. (2003). The power of context: Counseling South Asians within a family context. In G. Roysircar, D. S. Sandhu, & V. B. Bibbins (Eds.), *A guidebook: Practices of multicultural competencies* (pp. 97–107). Alexandria, VA: ACA publishers.

Jambunathan, S., Burts, D. C. & Pierce, S. (2000). Comparisons of parenting attitudes among five ethnic groups in the United States. *Journal of Comparative Family Studies,* 31, 395-406.

Joinson, A. N., A. Woodley, et al. (2007). "Personalization, authentication and self-disclosure in self-administered Internet surveys." *Computers in Human Behavior 23*, 275-285.

Kim, B. K., Li, L. C., & Ng, G. F. (2005). The Asian American values scale--Multidimensional: Development, reliability, and validity. *Cultural Diversity and Ethnic Minority Psychology, 11*, 187-201.

Kim, B. S. K., Yang, P. H., Atkinson, D. R., Wolfe, M. M., & Hong, S. (2001). Cultural value similarities and differences among Asian American ethnic groups. *Cultural Diversity and Ethnic Minority Psychology, 7*, 343-361.

Kobayashi, E. (2006). Perceived parental expectations among Chinese American college students: The role of perceived discrepancy and culture in psychological distress. Unpublished doctoral dissertation, Pennsylvania State University.

Kraut, R., Olson, J., Banaji, M., Bruckman, A., Cohen, J., & Couper, M. (2004). Psychological research online: Report of board of scientific affairs' advisory group on the conduct of research on the internet. *American Psychologist, 59*, 105-117.

Lee, M. R., Okazaki, S., Yoo, H. C. (2006). Frequency and intensity of social anxiety in Asian Americans and European Americans. *Cultural Diversity and Ethnic Minority Psychology, 12,* 291-305.

Lin, C.-Y. C., & Fu, V. R. (1990). A comparison of child-rearing practices among Chinese, immigrant Chinese, and Caucasian American parents. *Child Development, 61,* 429-433/

MacCallum, R.C., Browne, M.W., & Cai, L. (2006). Testing differences between nested covariance structure models: Power analysis and null hypotheses. *Psychological Methods, 11,* 19-35.

MacKinnon, D. P. (2000). Contrasts in multiple mediator models. In J. S. Rose, L. Chassin, C. C. Presson, & S. J. Sherman (Eds.), Multivariate applications in substance use research (pp. 141-160). Mahwah, NJ: Erlbaum.

Meyer, T. J., Miller, M. L., Metzger, R. L., & Borkovec, T. D. (1990). Development and validation of the Penn State Worry Questionnaire. *Behaviour Research and Therapy, 28*, 487-495.

Molina, S., & Borkovec, T.D. (1994). The Penn State Worry Questionnaire: Psychometric properties and associated characteristics. In G. C. L. Davey & F. Tallis, (Eds.), *Worrying. Perspectives on theory, assessment, and treatment*, pp. 265–283. New York: Wiley.

Nam, C. B., & Boyd, M. (2004). Occupational status in 2000: Over a century of census-based measurement. *Population Research and Policy Review, 23*, 327-358.

Nam, V. (Ed.) (2001). *Yell-oh girls!* New York: HarperCollins.

Noguchi, S. (2009, January 4). High grades, high stress for Asian-American students in Bay Area. *San Jose Mercury News*. Retrieved from www.mercurynews.com

Norem, J. K. (2008). Defensive pessimism, anxiety, and the complexity of evaluating self-regulation. *Social and Personality Psychology Compass, 2/1,* 121-134.

Norem, J. K., & Cantor, N. (1986). Defensive pessimism: Harnessing anxiety as motivation. *Journal of Personality and Social Psychology, 51,* 1208-1217.

Okazaki, S. (1997). Sources of ethnic differences between Asian American and White American college students on measures of depression and social anxiety. *Journal of Abnormal Psychology,* 106, 52-60.

Oyserman, D., & Sakamoto, I. (1997). Being Asian American: Identity, cultural constructs, and stereotype perception. *Journal of Applied Behavioral Science, 33*, 435-453.

Pomerantz, E. M., Saxon, J. L., & Oishi, S. (2000). The psychological trade-offs of goal investment. *Journal of Personality and Social Psychology, 79*, 617-630.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*, 879-891.

Pyke, K. (2000). "The normal American family" as an interpretive structure of family life among grown children of Korean and Vietnamese immigrants. *Journal of Marriage & the Family, 62,* 240-255.

Quintana, S.M., & Maxwell, S. E. (1999). Implications of recent developments in structural equations modeling for counseling psychology. *The Counseling Psychologist, 27*, 485-527.

Rappaport, J. (1995). Empowerment meets narrative: Listening to stories and creating settings. *American Journal of Community Psychology, 23,* 795-807.

Rappaport, J. (2000). Community narratives: Tales of terror and joy. *American Journal of Community Psychology, 28,* 1–24.

Reeves, T., & Bennett, C. (2004). *We the people: Asians in the United States, CENSR-17.* Washington, DC: US Census Bureau.

Roemer, L., Salters, K., Raffa, S. D., & Orsillo, S. M. (2005). Fear and avoidance of internal experiences in GAD: Preliminary tests of a conceptual model. *Cognitive Therapy & Research, 29*, 71-88.

Ruscio, A. M., & Borkovec, T. D. (2004). Experience and appraisal of worry among high worriers with and without generalized anxiety disorder. *Behaviour Research and Therapy, 42*, 1469-1482.

Saw, A., & Okazaki, S. (2007). Asian American immigrant stories: Cultural narratives of hardship and sacrifice. Manuscript in preparation.

Scott, E. L., Eng, W., & Heimberg, R. G. (2002). Ethnic differences in worry in a nonclinical population. *Depression and Anxiety, 15*, 79-82.

Strauman, T. J., & Higgins, E. T. (1988). Self-discrepancies as predictors of vulnerability to distinct syndromes of chronic emotional distress. *Journal of Personality, 56*, 685-707.

Sue, S., & Okazaki, S. (1990). Asian-American educational achievements: A phenomenon in search of an explanation. *American Psychologist 45,* 913–920.

Supinski, K., & Berenbaum, H. (2007). *The role of goal-setting in worry: Do goal investment and standards predict worry?* Manuscript submitted for publication.

Takaki, R. (1998). *Strangers from a different shore: A history of Asian Americans.* New York: Back Bay.

Takeuchi, D. T., Zane, N., Hong, S., Chae, D. H., Gong, F., Gee, G. C., et al. (2007). Immigration-related factors and mental disorders among Asian Americans. *American Journal of Public Health, 97,* 84-90.

Tallis, F., Eysenck, M. W., & Mathews, A. (1992). A questionnaire for the measurement of nonpathological worry. *Personality and Individual Differences, 13*, 161-168.

Tewari, N., Inman, A. G., & Sandhu, D. S. (2003). South Asian Americans: Culture, concerns and therapeutic strategies. In J. Mio & G. Iwamasa (Eds.), *Culturally diverse mental health: The challenges of research and resistance* (pp. 191-209). New York: Brunner-Routledge.

Tourangeau, R. and T. Yan (2007). "Sensitive questions in surveys." *Psychological Bulletin, 133*, 859-883.

Tsai, J. L., Ying, Y., & Lee, P. A. (2000). The meaning of "being Chinese" and "being American: Variation among Chinese American young adults. *Journal of Cross-Cultural Psychology, 31*, 302-332.

University of California, Davis. (2007, November). *Student headcount by ethnicity, Fall 2007.* Retrieved March 17, 2008, from the UC Davis News Service Web site: http://facts.ucdavis.edu/student_headcount_ethnicity.lasso

University of Illinois at Urbana-Champaign. (2007, November). *Common data set.* Retrieved from the University of Illinois Office of Public Affairs Web site: http://www.publicaffairs.uiuc.edu/survey_resources/cds_2007_2008.htm

Verkuil, TB., Brosschot, J. F., & Thayer, J. F. (2007). Capturing worry in daily life: Are trait questionnaires sufficient? *Behaviour Research and Therapy, 45,* 1835-1844.

Vongs, P. (2005, August 27). Inside the Asian pressure cooker. *San Francisco Chronicle*. Retrieved from http://sfgate.com.

Watari, K. F., & Brodbeck, C. (2000). Culture, health, and financial appraisals; Comparison of worry in older Japanese Americans and European Americans. *Journal of Clinical Geropsychology, 6,* 25-39.

Watson, D., Weber, K., Assenheimer, J. S., Clark, L. A., Strauss, M. E., & McCormick, R. A. (1995). Testing a tripartite model: I. evaluating the convergent and discriminant validity of anxiety and depression symptom scales. *Journal of Abnormal Psychology, 104*, 3-14.

Wells, A. (1999). A cognitive model of generalized anxiety disorder. *Behavior Modification, 23*, 526-555.

Wu, F. H. (2002). *Yellow: Race in America beyond black and white.* New York: Basic Books.

Xie, Y., & Goyette, K. (2003). Social mobility and the educational choices of Asian Americans. *Social Science Research, 32,* 467-498.

Yamamoto, J., Machizawa, S., Araki, F., Reece, S., Steinberg, A., Leung, J. and Cater, C. (1985). Mental health of elderly Asian Americans in Los Angeles. *The American Journal of Social Psychiatry, 5,* pp. 37–46.

Ying, Y., Coombs, M., & Lee, P. A. (1999). Family intergenerational relationship of Asian American adolescents. *Cultural Diversity & Ethnic Minority Psychology, 5*, 350-363.

Zusho, A., Pintrich, P. R., & Cortina, K. S. (2005). Motives, goals, and adaptive patterns of performance in Asian American and Anglo American students. *Learning and Individual Differences, 15,*141-158.

APPENDIX A

DEMOGRAPHIC QUESTIONNAIRE

Age: _____ **Sex:** _____

Are you adopted? ☐ Y ☐ N **Zip Code of Home Where You Grew Up:** _____

Where do you currently live?

☐ At home with parents

☐ At school (either on-campus or off-campus)

☐ Other, please specify: _____

Name of your high school: _____

Which of these groups best describe your background? (Check all that apply)

☐ Cambodian	☐ Chinese	☐ Filipino/a
☐ Hmong	☐ Indian	☐ Indonesian
☐ Japanese	☐ Lao	☐ Multiracial Asian
☐ Pakastani	☐ Thai	☐ Vietnamese
☐ Other Southeast Asian	☐ Other South Asian	☐ Other Asian

☐ Other, please specify: _____

What is your generation status?

☐ 1st: you immigrated to the US after age 12

☐ 1.5: you immigrated to the US at or before age 12

☐ 2nd: at least one of your parents immigrated to the US

☐ 3rd: at least one of your grandparents immigrated to the US

☐ 4th and above

☐ Other, please specify: _____

What was/is the occupation of your father/primary male caretaker?

If he is retired or deceased, indicate his former occupation. Please be as specific as possible. Write N/A if you do not have a father/primary male caretaker. EXAMPLE: BANKER is too general BANK TELLER is specific.

_____

DEMOGRAPHIC QUESTIONNAIRE (CONT.)

What was/is the occupation of your mother/primary female caretaker?
If she is retired or deceased, indicate her former occupation. Please be as specific as possible. Write N/A if you do not have a mother/primary female caretaker. EXAMPLE: BANKER is too general BANK TELLER is specific.

_____

What is your religious affiliation?

☐ Buddhist ☐ Catholic ☐ Hindu ☐ Jewish

☐ Muslim ☐ Protestant ☐ None – Agnostic ☐ None - Atheist

☐ Other, please specify: _____

What was your mother's country of origin?

_____

What was your father's country of origin?

_____

Since immigrating to the United States from their country/countries of origin, my parents' socioeconomic status (financial position, career) has:

☐ Improved tremendously

☐ Improved a little

☐ Stayed the same

☐ Become a little worse

☐ Become much worse

☐ Other, please specify: _____

DEMOGRAPHIC QUESTIONNAIRE (CONT.)

What is your mother's academic background?

☐ Less than high school degree
☐ High school degree
☐ Community college/some college
☐ Bachelor's degree
☐ Graduate/professional degree
☐ Other, please specify: _____

What is your fathers's academic background?

☐ Less than high school degree
☐ High school degree
☐ Community college/some college
☐ Bachelor's degree
☐ Graduate/professional degree
☐ Other, please specify: _____

When you were applying to colleges, what school did you HOPE to get into: _____

Number of siblings: _____

In the space provided, please type the age, gender, and academic progress for each sibling. If your siblings is attending or has attended college, please indicate the school they attend or attended and their field(s) of study. Please be as specific as possible. Three examples are provided below:

	Age	**Gender (M/F)**	**Academic Progress**
Example:	9	F	Currently in 3rd grade
Example:	23	M	attending San Francisco City College (general education)
Example:	30	F	Attended UIUC; Currently attending UIC (medicine)

APPENDIX B

WORRY DOMAINS QUESTIONNAIRE – FAMILY

1. That my family would be disappointed in me.

2. That my family thinks I don't help them enough.

3. That my family thinks I don't make enough sacrifices for them.

4. That I do not spend enough time with my family.

5. That I am disobeying my elders' wishes for me.

APPENDIX C

STANDARDS INVENTORY

Instructions: Please rate the extent to which you believe you **should** do each of the following using the rating scale provided:

1	2	3	4	5
not at all/never	once in a while/ a little	sometimes/ somewhat	frequently/ pretty much	very often/ very much so

I should…

1. have excellent academic performance
2. make others proud of my academic performance
3. study hard to get a high-paying job in the future
4. perform better than others academically
5. study at a prestigious college/university
6. pursue a prestigious career (e.g., doctor, lawyer, engineer)
7. study a prestigious major in school (e.g., engineering, pre-medicine)
8. receive straight A's in my classes
9. get a degree in a reasonable amount of time (e.g., a bachelor's degree in four years or less)
10. spend time with my grandparents, cousins, aunts, and uncles
11. spend time at home with my family
12. run errands that the family needs done
13. help my brothers or sisters with their homework

STANDARDS INVENTORY (CONT.)

14. spend holidays with my family

15. help out around the house

16. spend time with my family on weekends

17. help take care of my brothers and sisters

18. eat meals with my family

19. help take care of my grandparents

20. do things together with my brothers and sisters

21. treat my parents with great respect

22. follow my parents' advice about choosing friends

23. do well for the sake of my family

24. follow my parents' advice about choosing a job or major in college

25. treat my grandparents with great respect

26. respect my older brothers and sisters

27. make sacrifices for my family

28. live at home with my parents until I am married

29. spend time with my parents even after I no longer live with them

30. have my parents live with me when I get older

APPENDIX D

PERCEPTIONS OF LIVING UP TO PARENTAL EXPECTATIONS INVENTORY

Instructions: Please rate the extent to which you believe you are **currently living up to your parents' expectations** for each of the following using the rating scale provided:

1	2	3	4	5
not at all/never	once in a while/ a little	sometimes/ somewhat	frequently/ pretty much	very often/ very much so

I believe I am currently living up to my parents' expectations regarding…

1. having excellent academic performance
2. making others proud of my academic performance
3. studying hard to get a high-paying job in the future
4. performing better than others academically
5. studying at a college/university my parents consider prestigious
6. pursuing a career my parents consider prestigious (e.g., doctor, lawyer, engineer)
7. studying a major in school my parents consider prestigious (e.g., engineering, pre-medicine)
8. receiving straight A's in my classes
9. getting a degree in an amount of time my parents consider reasonable (e.g., a bachelor's degree in four years or less)
10. spending time with my grandparents, cousins, aunts, and uncles
11. spending time at home with my family
12. running errands that the family needs done

PERCEPTIONS OF LIVING UP TO PARENTAL EXPECTATIONS INVENTORY

(CONT.)

13. helping my brothers or sisters with their homework
14. spending holidays with my family
15. helping out around the house
16. spending time with my family on weekends
17. helping take care of my brothers and sisters
18. eating meals with my family
19. helping take care of my grandparents
20. doing things together with my brothers and sisters
21. treating my parents with great respect
22. following my parents' advice about choosing friends
23. doing well for the sake of my family
24. following my parents' advice about choosing a job or major in college
25. treating my grandparents with great respect
26. respecting my older brothers and sisters
27. making sacrifices for my family

AUTHOR'S BIOGRAPHY

Anne Saw was born and raised in San Francisco, California. She graduated from University of California, Berkeley in 2002 with a Bachelor of Arts's degree in Psychology and a minor in Asian American Studies. In 2003, she began her graduate studies in Clinical/ Community Psychology at the University of Illinois at Urbana-Champaign. She complete in M.A. in Psychology from the University of Illinois in 2005. In 2009-2010, she completed a clinical fellowship at Harvard Medical School/McLean Hospital in Belmont, Massachusetts. In July 2010, she began as the associate director for the Asian American Center on Disparities Research at University of California, Davis.