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## Influences of Personal Standards and Perceived Parental Expectations on Worry for Asian American and White American College Students

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### Abstract

The current study examined perceptions of living up to parental expectations and personal standards as possible mediators of the relationship between ethnicity and worry in a sample of 836 Asian American and 856 White American college students. Asian Americans reported higher frequency of academic- and family-related worry, but they did not report higher levels of global tendency to worry. Perceptions of living up to parental expectations of current academic performance and personal standards for preparation for a future career partially explained ethnic differences in frequency of academic worry. Personal standards and perceptions of living up to parental expectations for respect for the family partially explained ethnic differences in frequency of family worry. The findings highlight the importance of targeting domain-specific personal standards and perceived parental expectations to reduce worry among Asian Americans.

### Keywords

Asians; Racial and Ethnic Differences; anxiety; goal setting; parental expectations; college students

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Asian American college students exhibit high levels of worry across many domains, and there is evidence to suggest that they may worry more frequently than other ethnic groups (Scott, Eng, & Heimberg, 2002). The present research examined whether elevated levels of worrying among Asian American college students, in two particularly relevant life domains (school and family), could be accounted for by elevated levels of personal standards and perceptions of not living up to their parents' standards. Such findings would be expected based on Berenbaum's (2010) proposal that personal standards play a role in the initiation of worrying.

The limited research on ethnic differences in worry varies regarding whether Asian Americans worry more or less than White Americans. A self-report study of college students

found that Asian Americans do not differ from other ethnic groups, including White Americans, in global tendency to worry (as measured by the Penn State Worry Questionnaire) but worry more frequently than other groups (as measured by the Worry Domains Questionnaire); however, due to the small sample size of Asian Americans ( $n = 61$ ) the authors were unable to determine whether these were statistically significant ethnic differences (Scott et al., 2002). In contrast, a recent study using data from the Collaborative Psychiatric Epidemiology Studies (CPES) indicated that whereas the lifetime prevalence for generalized anxiety disorder (GAD) among White Americans is 8.6%, that same rate is only 2.1% for Asian Americans (Asnaani, Richey, Dimaite, Hinton, & Hofmann, 2010). Whereas the Scott et al. (2002) study included only college students at one Northeastern US university, the CPES study—which included the National Latino and Asian American Study (NLAAS) dataset—was nationally representative and included non-institutionalized adults with an average age of 41.3 years ( $SE = 0.88$ ). Prevalence estimates for GAD and other psychiatric disorders were derived from semi-structured diagnostic clinical interviews. Given these disparate findings in the literature, the present study sought to examine whether ethnic differences on both global tendency to worry and worry frequency among college students exist and what may account for these differences with larger samples of Asian Americans.

Berenbaum's (2010) initiation-termination (IT) two-phase model of worrying provides a theoretical framework for understanding how and why Asian Americans may differ from White Americans in terms of worry. Berenbaum proposed that worry is initiated by perceptions of threat and terminated by acceptance of the prospect of that threat. Perceptions of threat are partially influenced by perceptions of costs, which in turn are influenced by one's standards, goal investment, and tendency to catastrophize. In previous studies, Berenbaum and his colleagues (e.g., Berenbaum, Thompson, & Bredemeier, 2007; Berenbaum, Thompson, & Pomerantz, 2007) demonstrated that standards are related to worry and mediated by perceptions of cost.

Despite their potential importance to Asian Americans' experiences with worry, personal standards and parental expectations perhaps receive less attention compared to other factors that have been implicated in the research and theoretical literature on worry. That personal standards and perceptions of living up to family members' standards may contribute to elevated worrying for Asian Americans is consistent with the view expressed by some researchers that the higher frequency of distress for Asian Americans compared to other ethnic groups is due to pressures and expectations based on cultural values (Lee et al., 2008; Qin, 2008). For example, previous research on Asian American young adults has suggested that they experience high levels of pressure for academic success (Eaton & Dembo, 1997; Zusho, Pintrich, & Cortina, 2005), 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 (Kobayashi, 2006). Perceptions of parental expectations and criticisms have also been linked to worry (Stober & Joorman, 2001). The potential importance of personal standards and parental expectations to worry is also supported by Higgins' (1987) self-discrepancy theory. Higgins (1987) suggested that discrepancies between *actual* (who a person believes they actually are) and *ought* (who a person believes they should be) representations of the self result in agitation-related emotions (e.g., fear, worry) because the person feels they are not living up to expectations or obligations of what they or significant others believe they should be doing, and they consequently fear punishment.

Although vast heterogeneity exists within the Asian American college student population, it is important to consider that there are also many cultural similarities across different Asian ethnic groups, and likely, Asians living in other countries. 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 (i.e., a set of attitudes and behaviors related to respect and care for parents into their old age), 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). 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. 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.

The aims of the present study were to examine ethnic differences between Asian American and White American college students in: (a) worry frequency in two salient life domains, school and family; as well as (b) the global tendency to worry. In addition, we tested whether two proposed contributors to worry, perceptions of living up to parental expectations and personal standards, would explain ethnic differences in worry. Based on the research supporting the high value placed on school and family for Asian Americans, we expected that: (a) compared to White Americans, Asian Americans would have higher standards and lower perceptions of living up to parental expectations; and (b) standards and perceptions of living up to parental expectations would explain ethnic differences in worry.

## Method

### Participants and Procedure

A total of 1,692 college students (67.6% female, 32.4% male) from the University of California, Davis and the University of Illinois at Urbana-Champaign participated in the study. The mean age of the sample was 19.3 years ( $SD = 1.7$ , range from 17–40). 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. Family socioeconomic status (SES) was assessed using the Nam-Powers-Boyd Occupational Status Scale (OSS; Nam & Boyd, 2004). For the entire sample, the mean OSS score, after taking the higher score for each individual participant's parents, was 75.7 ( $SD = 24.3$ , range from 4–100), indicating middle class status. Ethnic differences on OSS scores were found,  $F(1, 1,641) = 76.05$ ,  $p < .001$ ,  $d = .43$ , 95% CI = .33–.53; for Asian American participants, the mean OSS was 80.65 ( $SD = 18.58$ ), whereas for White American participants, the mean OSS was 70.43 ( $SD = 28.17$ ). Therefore, all analyses included family SES as a covariate.

Participants were recruited through the psychology department subject pools at each data collection site. After providing informed consent, participants completed the measures described below and a demographic questionnaire 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

**Worry frequency**—We measured worry frequency in specific domains using scales modeled after the Worry Domains Questionnaire (Tallis et al., 1992). Participants were asked how frequently they worried (0=not at all; 4=extremely) about specific potential outcomes related to school and family. Worry in the academic domain was measured using the same five items (e.g., “That I leave schoolwork unfinished”) used by Berenbaum, Thompson, and Bredemeier (2007). Worry in the family domain was measured using seven items (e.g., “That my family would be disappointed in me”) developed for this study. Internal consistency was adequate for each subscale: Academic ( $\alpha = .89$ ; for Asian Americans,  $\alpha = .89$ , for White Americans,  $\alpha = .88$ ), and Family ( $\alpha = .93$ ; for Asian Americans,  $\alpha = .92$ , for White Americans,  $\alpha = .91$ ).

**Global tendency to worry**—The Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990) is a widely used 16-item questionnaire designed to measure global tendency to 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 ( $\alpha = .80$ ), for Asian American participants ( $\alpha = .81$ ), for White American participants ( $\alpha = .79$ ).

**Standards**—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; 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 (Wang & Heppner, 2002). Five items (e.g., “perform better academically than most of my classmates”) measured current academic performance standards (Asian American  $\alpha = .85$ , White American  $\alpha = .83$ ), and three items (e.g., “pursue a prestigious career (e.g., doctor, lawyer, engineer)”) measured standards for preparing for future career (Asian American  $\alpha = .85$ , White American  $\alpha = .86$ ).

Standards for the domain of family role obligations were adapted from the Family Obligations Scale (Fuligni et al., 1999; Fuligni, Yip, & Tseng, 2002). Six items (e.g., “always treat my parents with great respect”) measured standards for respecting family (Asian American  $\alpha = .83$ , White American  $\alpha = .80$ ), and seven items (e.g., “spend at least half my free time at home with my family”) measured standards for spending time with the family (Asian American  $\alpha = .87$ , White American  $\alpha = .82$ ).

**Perceptions of living up to parental expectations**—To assess perceptions of living up to parental expectations (LPE), 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; 5=very often/very much so). Internal consistencies for the perceptions of living up to parental expectations domains are as follows: (1) current academic performance: Asian American  $\alpha = .88$ , White American  $\alpha = .83$ ; (2) preparing for future career: Asian American  $\alpha = .89$ , White American  $\alpha = .86$ ; (3) respecting family: Asian American  $\alpha = .85$ , White American  $\alpha = .83$ ; and (4) spending time with the family: Asian American  $\alpha = .89$ , White American  $\alpha = .86$ .

## Results

### Tests for Group Differences

A series of multivariate analyses of variance (MANOVA) and estimated effect sizes (i.e., Cohen's  $d$ ) with 95% confidence intervals were conducted to examine possible site and gender differences. No site differences were found; therefore, participants from both sites were combined in subsequent analyses.<sup>1</sup> Women tended to report greater worry about school,  $F(2, 1,659) = 19.08, p < .001, d = .23, 95\% \text{ CI} = .12-.33$ ). All subsequent analyses included gender as a covariate.

As hypothesized, Asian Americans reported significantly higher academic and family worry. In contrast, Asian Americans and White Americans did not differ in terms of global worry on the PSWQ. Also as hypothesized, compared to White Americans, Asian Americans reported having: (a) higher standards in the domains of school and family; and (b) lower perceptions of living up to parental expectations in the domains of school and respect for the family. Descriptive statistics, the results of ANCOVAs (controlling for gender and family SES), and effect sizes comparing the Asian American and White American subsamples are displayed in Table 2.

### Correlational Analyses

Correlations between worry and both standards and perceptions of living up to parental expectations, conducted separately for Asian Americans and White Americans and controlling for gender and family SES, are displayed in Table 3. For both Asian Americans and White Americans, standards in the domains of school and family were related to worry frequency in the school and family domains. 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.

### Mediational Analyses

**Simple mediational analyses**—Simple mediation analyses were conducted to test whether each potential mediator alone would mediate ethnic differences in worry frequency in the academic and family domains using the non-parametric bootstrapping procedure recommended by Hayes (2009). First, mediators of ethnic differences in academic worry were tested. Academic worry was entered as the dependent variable, ethnicity (Asian = 1, White = 0) was entered as the independent variable, and four potential mediators were tested in separate analyses: 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. As shown in Table 4, 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 simple mediators. Next, mediators of ethnic differences in family worry were tested. Family worry was entered as the dependent variable, ethnicity (Asian = 1, White = 0) was entered as the independent variable, and four potential mediators were tested in separate analyses: perceptions of living

<sup>1</sup>A series of multivariate analyses of variance (MANOVA) were conducted to examine possible site and gender 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.



up to parental expectations for respect for family, perceptions of living up to parental expectations for spending time with family, personal standards for respect for family, and personal standards for spending time with family. As shown in Table 5, perceptions of living up to parental expectations for respect for family, personal standards for respect for family, and personal standards for spending time with family were simple mediators.

**Multiple mediational analyses**—We next conducted two multiple mediation analyses to examine ethnic differences in worry about school and family. We estimated direct and indirect effects of multiple mediators (perceptions of living up to parental expectations and standards) using the non-parametric bootstrapping procedure recommended by Preacher and 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 Mplus 6.12.

**Ethnic differences in academic worry:** In the first set of mediational analyses examining ethnic differences in academic worry, academic worry was entered as the dependent variable, ethnicity (Asian = 1, White = 0) 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 and family socioeconomic status were entered as control variables on the dependent variable.

As illustrated in Figure 1, the bootstrap analysis indicated that, as hypothesized, perceptions of living up to parental expectations for current academic performance and standards for preparing for a future career partially mediated the link between ethnic group membership and academic worry. Ethnicity and gender continued to play a statistically significant role on the dependent variable even with the mediators in the model. Specifically, the results of the bootstrap tests showed that the total effect of ethnic group membership on academic worry was attenuated but remained significant when the mediators were included in the model. The specific indirect effects of each proposed mediator indicated that living up to parental expectations for current academic performance and standards for preparation for future career were unique mediators. In contrast, perceptions of living up to parental expectations for future career—which was a simple mediator—and standards for current academic performance did not add to the overall model. Point estimates and bias-corrected 95% confidence intervals are provided in Table 4.

**Ethnic differences in family worry:** In the multiple mediational analysis examining ethnic differences in family worry, family worry was entered as the dependent variable, ethnicity (Asian = 1, White = 0) 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 and family socioeconomic status were entered as control variables on the dependent variable.

As hypothesized, the bootstrap analyses indicated that perceptions of living up to parental expectations for respecting the family and personal standards for respecting the family partially mediated the link between ethnic group membership and family worry (Figure 2). Ethnicity, gender, and family socioeconomic status continued to play a statistically significant role on the dependent variable even with the mediators in the model. Specifically, the total effect of ethnic group membership on family worry was attenuated but remained

significant when the mediators were included in the model. The specific indirect effects of each proposed mediator showed that only perceptions of living up to parental expectations for respecting the family and personal standards for respecting the family were unique mediators. In contrast, perceptions of living up to parental expectations for spending time with family and standards for family time did not add to the overall model. Point estimates and bias-corrected 95% confidence intervals are provided in Table 5.

## Discussion

The results of this study suggest that Asian American college students worry more about school and family than do White Americans but that the two groups do not differ in terms of the global tendency to worry. Two factors partially account for ethnic differences in academic and family worry: (1) personal standards and (2) perceptions of living up to parental expectations—specifically, perceptions of living up to parental expectations regarding current academic performance and standards for preparation for a future career partially mediated the relationship between ethnic group membership and worry about school; perceptions of living up to parental expectations for respecting the family and personal standards for respecting the family partially mediated the relationship between ethnic group membership and worry about the family. These findings provide some support for Berenbaum et al. (2007) and Berenbaum's (2010) two-phase initiation-termination model of worry. These results are also consistent with previous research on Asian American young adults showing that two particular areas of importance are family and school. Concern about and commitment to school and family for Asian Americans were also reflected in ethnic differences in personal standards and perceptions of living up to parental expectations for Asian Americans compared with White Americans.

As hypothesized, Asian Americans reported that they felt they were not living up to their parents' expectations as much as did White Americans in the domains of family and school. 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 hypothesized ethnic differences in school standards suggested in previous work may be found in more academically diverse samples. Further, the two groups did not differ with respect to perceptions of living up to parental expectations for family time. This may be because many students at the recruitment sites were living away from their families; family time was less feasible. 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 ethnic/cultural contexts.

As hypothesized, personal standards and perceptions of living up to parental expectations played a role in explaining ethnic differences in worry frequency. Specifically, respect for the family partially mediated ethnic differences in family worry frequency. Perception of living up to parental expectations regarding current academic performance and personal standards for preparing for future career also partially mediated ethnic differences in frequency of academic worry. Only partial mediation was established, indicating that other factors contribute to ethnic differences in frequency of worry about school and family. For example, intolerance of uncertainty (Dugas, Ganon, Ladouceur, & Freeston, 1998), negative problem orientation (Dugas, Freeston, & Ladouceur, 1997), and maladaptive beliefs about worry (Ruscio & Borkovec, 2004) may play roles in explaining ethnic differences.

Perfectionism and coping styles (e.g., behavioral inhibition vs. activation) (Chang et al., 2007) are other potential contributors to these ethnic differences.

Whereas perceptions of living up to parental expectations and personal standards for respecting the family partially mediated ethnic differences in worry about the family, perceptions of living up to parental expectations and personal standards for spending time with the family did not. As noted previously, this may be because most participants in the study were living away from their families, they were less able to spend time with the families. The items related to spending time with the family were adapted Fuligni et al.'s Family Obligations Scale (Fuligni et al., 1999; Fuligni, Yip, & Tseng, 2002), which was developed for high school youth. It is possible that the relationship between spending time with family and worry about the family is stronger before or after college than during college years. Whereas perceptions of living up to parental expectations regarding current academic performance partially mediated ethnic differences in academic worry in both simple and multiple mediation models, perceptions of living up to parental expectations regarding preparing for future career was only a significant mediator in simple analyses but not in the multiple mediational analysis. It may be the case, given the strong correlation between perceptions of living up to parental expectations regarding preparing for future career and current academic performance, that preparing for future career was accounted for in the multiple mediational model by the current academic performance.

It is worth noting that whereas Asian Americans reported more frequent worries in the academic and family domains than did White Americans, there were no ethnic differences in reports of global worry as measured by the PSWQ. There are several potential explanations for this pattern that ought to be explored in future research. One possibility is that Asian Americans worry less frequently than do White Americans in life domains other than school and family. Alternatively, it is possible that their emphasis on familial bonds leads Asian Americans to have greater interpersonal resources than White Americans, which enables them to cope more successfully with their worries. As a result, even if they worry more frequently than White Americans, the impact of worrying on the lives of Asian Americans is similar to the impact of worrying on the lives of White Americans. This finding may provide some explanation for the low prevalence rates of GAD for Asian Americans compared to members of other racial/ethnic groups. Data from the Collaborative Psychiatric Epidemiology Studies indicate that whereas the lifetime prevalence for GAD among White Americans is 8.6%, that same rate is only 2.1% for Asian Americans (Asnaani, Richey, Dimaite, Hinton, & Hofmann, 2010).

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 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. 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 current study assessed only college students' perceptions of their parents' expectations, however, parents and their college-aged children all play active roles in generating expectations about family, school, and other important life domains, and evaluating whether or not these expectations are met. Therefore, future research should examine expectations from the parents' perspectives as well as perceptions of these expectations from the students' perspectives. Furthermore, standards and expectations are not static; rather, they



are shaped by past performance and assessments of future performance (Bandura, 1986). 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).

The results of the present study have several implications for the treatment of worry among Asian Americans, and likely Asians living countries. 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. In addition, the results suggest that efforts to reduce worry among Asian Americans might benefit from targeting their expectations and those of significant others (e.g., parents, spouses, other family members). There is growing support for the 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 (2011) 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 significant others' values and expectations and in turn motivate the client to pursue these values through value-based behaviors. In line with Berenbaum's (2010) model of worry, cognitive and behavioral treatments can be directed toward reducing the perceived costs of failing oneself or one's significant others.

## Acknowledgments

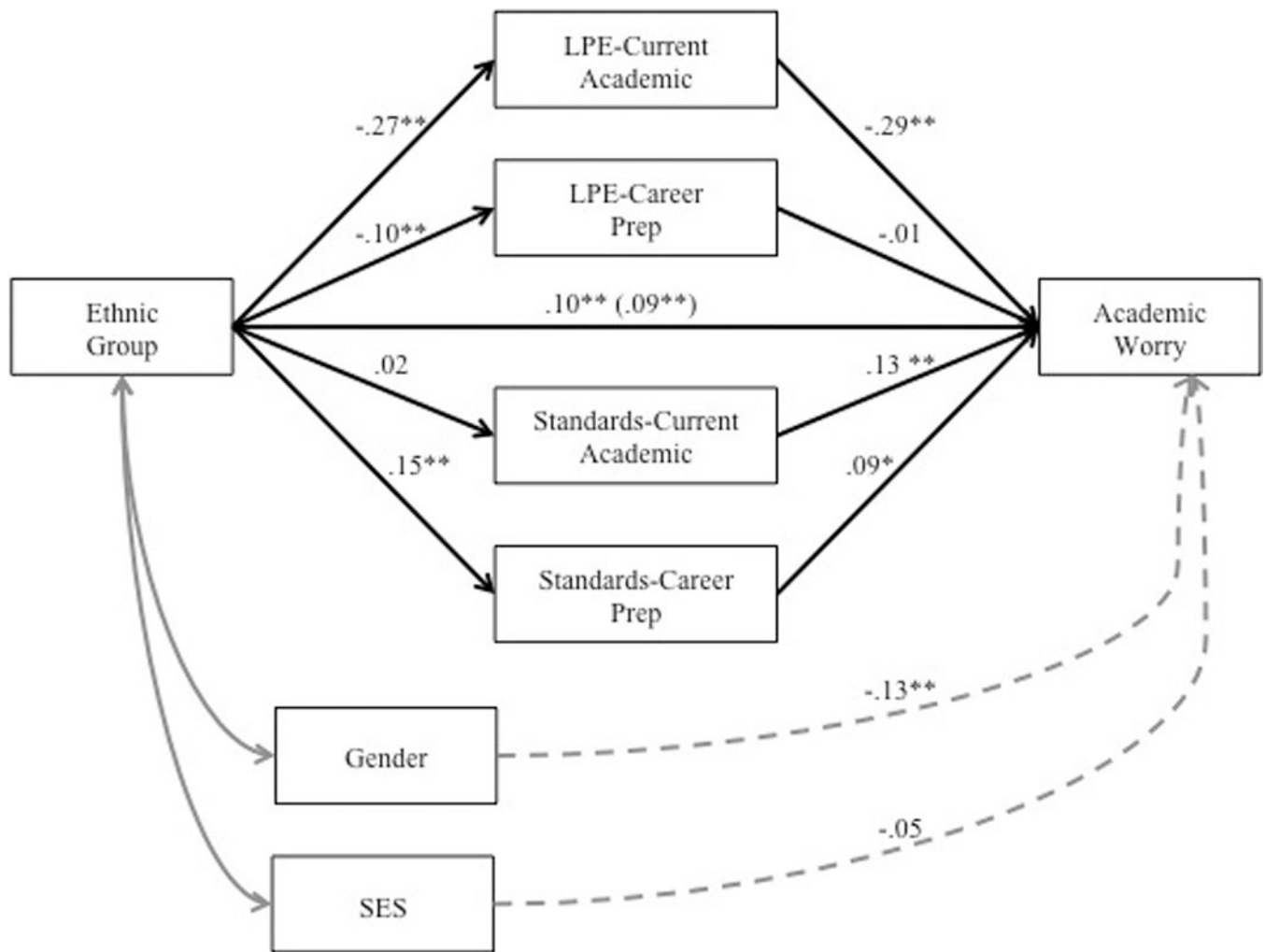
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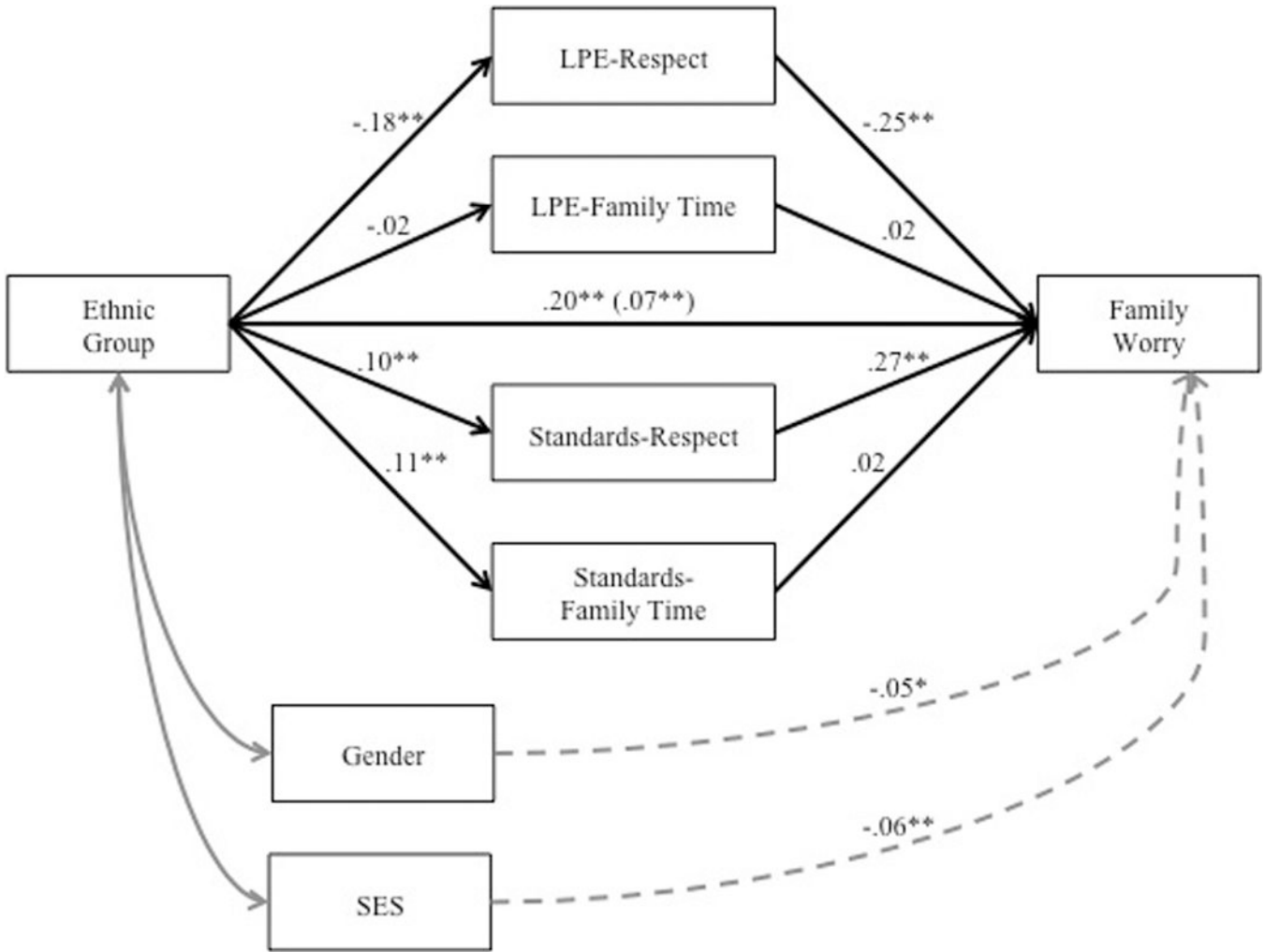
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**Figure 1.** Mediating effects of perceptions of living up to parental expectations and standards for school on the relationship between ethnicity and academic worry. Path values represent standardized regression coefficients. The value outside of the parentheses represents the total effect of ethnic 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 ethnic group membership on academic worry after the mediators are included. \* $p < .05$ . \*\* $p < .01$ . For ethnic group membership, Asian = 1, White = 0. 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 ethnicity and family worry. Path values represent standardized regression coefficients. The value outside of the parentheses represents the total effect of ethnic 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 ethnic group membership on family worry after the mediators are included. \* $p < .05$ . \*\* $p < .01$ . For ethnic group membership, Asian = 1, White = 0. For gender, female = 0, male = 1.



Table 1

## Ethnicity and Generational Status of Participants

|                  | Generation Status |     |                 |                 |                 | Total <i>n</i> |       |
|------------------|-------------------|-----|-----------------|-----------------|-----------------|----------------|-------|
|                  | 1 <sup>st</sup>   | 1.5 | 2 <sup>nd</sup> | 3 <sup>rd</sup> | 4 <sup>th</sup> |                | Other |
| Chinese          | 55                | 81  | 207             | 34              | 9               | 3              | 389   |
| Multietnic 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 <i>n</i>   | 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**  
Ethnic Differences in Predictor and Outcome Measures, Controlling for Gender and Family SES

|                     | Asian Americans |               | White Americans |               | <i>F</i> | Cohen's <i>d</i> (CI) |
|---------------------|-----------------|---------------|-----------------|---------------|----------|-----------------------|
|                     | Range           | Mean (SD)     | Range           | Mean (SD)     |          |                       |
| LPE                 |                 |               |                 |               |          |                       |
| Academic            |                 |               |                 |               |          |                       |
| Current Academic    | 1-5             | 3.01 (1.02)   | 1-5             | 3.60 (.89)    | 122.60*  | .55 (.45, .65)        |
| Career Prep         | 1-5             | 3.14 (1.14)   | 1-5             | 3.38 (1.10)   | 15.52*   | .20 (.10, .30)        |
| Family              |                 |               |                 |               |          |                       |
| Respect for Family  | 1-5             | 3.25 (.82)    | 1-5             | 3.55 (.74)    | 49.07*   | .35 (.25, .45)        |
| Family Time         | 1-5             | 3.11 (.94)    | 1-5             | 3.20 (.89)    | 1.47     | .06 (-.04, .16)       |
| Standards           |                 |               |                 |               |          |                       |
| Academic            |                 |               |                 |               |          |                       |
| Current Academic    | 1-5             | 3.84 (.88)    | 1-5             | 3.85 (.75)    | .41      | .03 (-.06, .12)       |
| Career Prep         | 1-5             | 3.60 (1.10)   | 1-5             | 3.26 (1.10)   | 37.15*   | .30 (.20, .40)        |
| Family              |                 |               |                 |               |          |                       |
| Respect for Family  | 1-5             | 3.56 (.75)    | 1-5             | 3.42 (.68)    | 16.36*   | .20 (.10, .30)        |
| Family Time         | 1-5             | 3.36 (.84)    | 1-5             | 3.20 (.76)    | 17.22*   | .21 (.11, .31)        |
| Global Worry (PSWQ) | 8-70            | 39.86 (12.69) | 6-70            | 38.84 (14.55) | 5.02     | .07 (.02, .17)        |
| Worry Frequency     |                 |               |                 |               |          |                       |
| Academic            | 0-20            | 11.11 (5.13)  | 0-20            | 9.12 (4.92)   | 61.28*   | .39 (.29, .48)        |
| Family              | 0-28            | 10.32 (7.23)  | 0-28            | 6.28 (6.12)   | 133.74*  | .57 (.47, .67)        |

Note. LPE = Perceptions of living up to parental expectations. PSWQ = Penn State Worry Questionnaire.

\* Using a Bonferroni correction, *F* tests were significant if  $p < .005$ . CI = 95% confidence interval.

**Table 3**

Partial Correlations among Predictor and Outcome Variables, Controlling for Gender and SES, 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. Global Worry            | -     | .33**  | .25**  | -.01   | .01   | .04   | .06   | .07*  | .06   | .10** | .10** |
| 2. Academic Worry          | .48** | -      | .57**  | -.16** | -.05  | -.04  | -.02  | .14** | .13** | .13** | .05   |
| 3. Family Worry            | .40** | .58**  | -      | -.11** | -.03  | .05   | .01   | .12** | .12** | .22** | .14** |
| 4. LPE-Current Academic    | .06   | -.29** | -.18** | -      | .61** | .60** | .34** | .32** | .20** | .15** | .12** |
| 5. LPE-Career Prep         | .02   | -.08*  | -.12** | .44    | -     | .54** | .36** | .32** | .51** | .29** | .25** |
| 6. LPE-Respect             | .04   | -.15** | -.16** | .48**  | .42** | -     | .68** | .24** | .23** | .50** | .40** |
| 7. LPE-Family Time         | .05   | -.01   | -.06   | .24**  | .26** | .65** | -     | .14** | .17** | .42** | .57** |
| 8. Standards-Current Acad. | .16** | .00    | .02    | .50**  | .29** | .22** | .09** | -     | .65** | .57** | .41** |
| 9. Standards-Career Prep   | .11** | .12**  | .11**  | .05    | .56** | .07** | .02   | .42** | -     | .52** | .37** |
| 10. Standards-Respect      | .17** | .11**  | .18**  | .13**  | .17** | .53** | .37** | .32** | .26** | -     | .70** |
| 11. Standards-Family Time  | .14** | .11**  | .10**  | .11**  | .16** | .40** | .56** | .26** | .20** | .65** | -     |

\*  $p < .05$ .

\*\*  $p < .01$ .

**Table 4**

Simple and Multiple Mediation of Indirect Effects of Ethnic Group Membership on Academic Worry through Perceptions of Living Up to Parental Expectations and Standards regarding Current Academic Performance and Preparation for Future Career (5,000 bootstrap samples)

|                              | Point Estimate | 95% CI |       |
|------------------------------|----------------|--------|-------|
|                              |                | Lower  | Upper |
| Simple indirect effects      |                |        |       |
| LPE-Current Academic         | .065           | .047   | .083  |
| LPE-Career Preparation       | .008           | .002   | .015  |
| Standards-Current Academic   | -.007          | -.055  | .025  |
| Standards-Career Preparation | .035           | .017   | .054  |
| Multiple indirect effects    |                |        |       |
| LPE-Current Academic         | .077           | .055   | .098  |
| LPE-Career Preparation       | .001           | -.006  | .008  |
| Standards-Current Academic   | .002           | -.005  | .009  |
| Standards-Career Preparation | .013           | .002   | .024  |
| Total                        | .073           | .093   | .113  |

*Note.* LPE = Perceptions of living up to parental expectations. Confidence Intervals (CIs) that do not include zero indicate a significant indirect effect.

**Table 5**

Simple and Multiple Mediation of Indirect Effects of Ethnic Group Membership on Family Worry through Perceptions of Living Up to Parental Expectations and Standards regarding Respect and Family Time (5,000 bootstrap samples)

|                           | Point Estimate | 95% CI |       |
|---------------------------|----------------|--------|-------|
|                           |                | Lower  | Upper |
| Simple indirect effects   |                |        |       |
| LPE-Respect               | .017           | .006   | .028  |
| LPE-Family Time           | .001           | -.002  | .004  |
| Standards-Respect         | .231           | .117   | .379  |
| Standards-Family Time     | .013           | .005   | .020  |
| Multiple indirect effects |                |        |       |
| LPE-Respect               | .045           | .028   | .062  |
| LPE-Family Time           | .001           | -.003  | .002  |
| Standards-Respect         | .027           | .013   | .041  |
| Standards-Family Time     | .002           | -.006  | .010  |
| Total                     | .093           | .073   | .109  |

*Note.* LPE = Perceptions of living up to parental expectations. Confidence Intervals (CIs) that do not include zero indicate a significant indirect effect.