The Role of Parental Expectations and Self-Beliefs on Academic Stress and Depression among Asian American Undergraduates

by

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ABSTRACT

Despite high levels of academic achievement as a group (Ryan & Bauman, 2016), Asian American students face many challenges, including academic stress (Flatt, 2013; Liu, 2002) and depression (Aczon-Armstrong, Inouye, & Reyes-Salvail, 2013; Wang & Sheikh-Khalil, 2014). The purpose of this study was to examine self-beliefs (academic self-efficacy and independent self-construal) and family and cultural variables (perceived parental expectations for academic achievement and internalization of the model minority myth) that may affect the academic stress and depression experienced by Asian American undergraduates.

A national sample of 314 participants (221 female, 89 male, 4 nonbinary) who self-identified as Asian American undergraduates were recruited online and through word of mouth. They completed assessments of six constructs: Academic self-efficacy, independent self-construal, perceived parental expectations for academic achievement, internalization of the model minority myth, academic stress, and depression.

Hierarchical multiple regression analyses revealed that of the two self-beliefs, only academic self-efficacy was a predictor of academic stress and depression. The greater the students' academic self-efficacy, the less academic stress and depression they reported. Independent self-construal was not a significant predictor. Additionally, perceived parental expectations for academic achievement also predicted academic stress and depression. The more students perceived that their parents had high expectations for their academic achievement, the more they experienced academic stress and depression. The cultural variable, internalization of the model minority myth, was not a predictor of academic stress or depression. A moderated hierarchical regression examining whether

academic self-efficacy and independent self-construal moderated the relation between perceived parental expectations for academic achievement and academic stress and depression revealed no moderation effects.

The importance of academic self-efficacy is discussed in the context of cognitive theory that posits that thoughts and beliefs affect behaviors and emotions. In addition, cognitive theory is used to explain perceived parental expectations for academic achievement, as these are perceptions and beliefs about others, as related to one's self. That the internalization of the model minority myth was not related to depression and academic stress is discussed. Limitations and clinical implications for working with Asian Americans with academic stress and depression are also discussed.

DEDICATION

To my mother, Noriko Kamikihara, for her love and encouragement throughout my graduate school journey.

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TABLE OF CONTENTS

CHAPTER Page

Page

LIST OF TABLES

Table Page

LIST OF FIGURES

Figure Page

CHAPTER 1

THE PROBLEM IN PERSPECTIVE

The United States (U.S.) is a nation of immigrants with individuals from around the world seeking a home in America. In the mid to late 1960's, the majority of immigrants came from non-European countries such as Asia, Africa, and South and Central America, with children of Asian descent becoming the fastest growing population in American schools (Lew, 2006). According to the U.S. Census Bureau, 21.4 million Asians are estimated to live in the U.S., with 5.7% of the U.S. population in 2016 identifying as Asian alone (U.S. Census Bureau, Population Estimates Program, 2016; U.S. Census Bureau, Population Division, 2017). The U.S. census refers to *Asians* as members of a racial identification group regardless of nationality and *Asian American* as individuals who self-identify their national identities as Asian American (Wilf & Ridley-Kerr, 2012). For the current study, the term *Asian American* refers to individuals who self-identify as being of Asian descent (Chinese, Indian, Japanese, Korean, Filipino, Vietnamese, and other Southeast Asian groups). The current study did not include Pacific Islanders as the argument has been made against combining Pacific Islanders and Asian Americans due to their vastly distinct histories (Diaz, 2004).

The American Immigration Council (2012) reported that 66.5% of Asians living in America were born outside of the U.S. and that 57% of foreign-born Asians become naturalized American citizens. Of individuals who identify as belonging to only one Asian American subgroup, the largest Asian American subgroups are Chinese (3.3 million), Asian Indian (2.8 million), Filipino (2.6 million), Vietnamese (1.5 million), Korean (1.4 million), and Japanese (.7 million) (Profile America Facts for Features,

2011). As the fastest growing racial/ethnic minority population (as either Asian alone or in combination with one or more additional races) with 46% growth from 2000 to 2010 (Profile America Facts for Features, 2011), it is important to understand factors related to the welfare of this growing minority population, particularly their educational success.

Asian Americans and Academics

Of the Asian American population, 69% of those over the age of 18 have obtained at least some college education (U.S. Census Bureau, 2010). In comparison, 56% of the White American population, 48% of the Black population, and 34% of the Hispanic population over the age of 18 have attended at least some college (U.S. Census Bureau, 2010). When looking only at individuals in the typical college student age range, between the ages of 18 and 24, 68% of the Asian American population, 52% of the White population, 40% of the Black population, and 37% of the Hispanic population have some college education or more (U.S. Census Bureau, 2010). For individuals over the age of 25, 50.2% of the Asian American population, 29.3% of the White population, 17.7% of the Black population, and 13.0% of the Hispanic population have obtained a bachelor's degree or higher (Ogunwole, Drewery, & Rios-Vargas, 2012). It is evident that, when educational attainment rates in the U.S. population are taken into consideration, the Asian American population is the most educated racial group in the U.S.

Given the heterogeneity of the Asian American population, however, these statistics may mask the unique challenges faced by many Asian American college students. Dmitrieva, Chen, and Greenberger (2008) studied Asian American and European American high school and college students and found that although Asian American high school students had higher grade point averages (GPAs) than did

European Americans students, Asian American students reported a significantly greater decline in grades during their freshmen year of college as compared to European Americans, even after controlling for parental educational achievement and gender. Though there were no ethnic differences in grade declines in their sophomore year, Asian American college juniors reported significantly lower GPAs than did their European American counterparts. Furthermore, Asian American students who moved away from home reported a significant decline in their grades from high school to their freshmen year in college as compared to Asian American students who remained at home. Therefore, one unique challenge faced by Asian Americans appears to be the negative influence of living away from home on their college GPA. Given the potential importance of whether students live at home, this study controlled for whether the students lived with family at home.

Model Minority Myth

The model minority myth is the stereotype that all Asian Americans are hardworking, intelligent, reserved, and passive (Oyserman & Sakamoto, 1997; Thompson & Kiang, 2010). The myth characterizes Asian Americans as "overachievers" who study "law, math, or science" (Oyserman & Sakamoto, 1997, p. 446) and have high levels of academic achievement, upward economic and occupational mobility, and low rates of mental health distress and crime (Wong, Lai, Nagasawa, & Lin, 1998). This stereotype proposes that Asian Americans are "economically, academically, and socially successful, but they are somehow more successful than other racial minority groups" and that their successes are related to their "individual efforts and mobility" (Yoo, Burrola, & Steger, 2010, p. 17). Originating in the 1960's during the civil rights movement, the idea of

Asian Americans as a model minority was proposed to refute the demand of Black Americans for racial equality (Chun, 1980). The argument was made that despite facing discrimination, minorities could be successful by being diligent, hard-working, and submissive (Chun, 1980). Articles published in the 1960's *New York Times* and *U.S. News and World Report* that touted the successes of Japanese Americans and Chinese Americans helped promote this argument.

Previous studies have argued that this stereotype can be perceived positively and serve as a protective factor against discrimination. After Kibria (2002) found that Asian Americans perceived the model minority stereotype positively, she concluded that acceptance of this stereotype was due to the belief that fulfilling the stereotype was a way to fit in with American society. Analyzing data from a national survey of Asian Americans, Tran and Sangalang (2015) examined Asian Americans' perceptions of the functional effects of their race/ethnicity within the context of the model minority myth and Asian American well-being. Specifically, they found that the functional effect of race/ethnicity was perceived as helpful and served as a protective factor against the relation between discrimination and life satisfaction among Chinese American.

As noted earlier, half of the Asian American population has at least a bachelor's degree (Ogunwole et al., 2012). This academic achievement has been used to support the myth that minorities can achieve if they work hard enough (Ogunwole et al., 2012). Pertaining to the characterization that Asian Americans excel academically in areas such as mathematics (Chun, 1980), Kao (1995) found that Chinese, Korean, and Southeast Asian eighth grade students received higher math scores compared to the White students.

Past research examining the relation between the model minority myth and academic performance, however, has challenged the validity of the myth. For example, Toupin and Son (1991) examined Asian Americans' academic achievement and compared it to the achievement of their classmates from other racial/ethnic groups. Asian American students did not perform better than did their non-Asian classmates of similar socioeconomic and educational backgrounds. Similarly, Wong et al. (1998) studied the perceptions of Asian American college students as a model minority and found that while they perceived themselves as being more prepared and motivated to succeed academically compared to students from other racial/ethnic groups, their GPAs and college entrance exam scores were not significantly different from those of other racial/ethnic groups. Furthermore, according to the 2007-2009 American Community Survey, disaggregated data on educational attainment among Asian Americans estimated that Cambodian, Hmong, Laotian, and Vietnamese Americans have lower educational attainment rates that are similar to those of African Americans and Latino/a Americans (Asian American Center for Advancing Justice, 2011). Although 50% of Asian Americans have a bachelor's degree (Center for American Progress, 2015), only 25.8% of Vietnamese Americans and 14% of Cambodian Americans have earned a bachelor's degree (Center for Global Policy Solutions, 2014). In addition, Burmese, Cambodian, and Hmong Americans had the highest high school dropout rates compared to any other racial/ethnic group (Wong, 2015). It is evident that the model minority myth is not applicable to all Asian Americans and is challenged by these educational achievement data.

In addition to educational attainment, another factor also challenges stereotypes about Asian Americans. This factor is related to the disparities in socioeconomic status among Asian groups. For example, although the median household income of Asian Americans who identify as single race was $68,780 in 2009 (Profile America Facts for Features, 2011), there was great variation among Asian groups. For example, the median income for Asian Indian Americans was $90,429 as compared to the median income of $46,657 for Bangladeshis Americans. Asian Americans from Southeast Asia often face economic struggles with lower median household incomes, lower wage jobs, and lower educational achievement than that of other Asian Americans. Unemployment rates among Cambodian, Hmong, and Laotian Americans are higher than the national average (Asian American Center for Advancing Justice, 2011). For example, in 2010, the unemployment rates were 9.2% for Cambodians, 9.9% for Hmong, and 9.1% for Laotians (Weller, Ajinkya, & Farrell, 2012). From 2006-2010, the poverty rate was 27% for Hmong Americans and 21.1% for Bangladeshi Americans (Ramakrishnan & Ahmad, 2014). These economic challenges are exacerbated by 39% to 52% of Southeast Asian Americans having limited English proficiency (Southeast Asia Resource Action Center, 2011).

Looking at data from the March Supplement of the Census's 2010 Current Population Survey, Covarrubias and Liou (2014) compared White and Asian American average earnings by educational attainment and found that on average Asian Americans earned less than Whites did, with the exception of those with graduate/professional degrees. With respect to positions with upward mobility, while Asian Americans were highly represented in science and engineering careers, they were less likely to be in

management positions than were White and Black Americans (Tang, 1997). It is evident that it is inaccurate to claim that all Asian Americans are economically successful, which is a component of the model minority myth.

In addition, there are negative consequences related to the model minority myth. As noted earlier, the model minority myth has been used to promote the idea that in the U.S. all minorities can achieve and be successful if they strive and work as hard as Asian Americans do. This depiction pits Asian Americans against other racial/ethnic minorities, which can lead to feelings of resentment. In an ethnographic study of high school students, Lee (1996) found that African American students viewed Asian American students as a "threat" and resented them due to the stereotype of Asian Americans as high achievers (p. 99). In addition, Cheryan and Bodenhausen (2000) noted that the model minority myth about mathematical ability is perceived as pressure and interferes with mathematical performance among female Asian American undergraduates. In a review of the literature on Asian Americans and education, Ng, Lee, and Pak (2007) also found that the model minority stereotype could serve as pressure that interferes with the academic persistence of Asian American students.

Because of the assumption that Asian Americans are successful by virtue of working hard, they may be considered as an invisible minority, being overlooked for minority scholarships, financial aid, and employment opportunities, as well as for admission to universities (Chun, 1980). For example, racial quotas set by Ivy League universities have been referred to as an extension of the "bamboo ceiling," a term coined by Hyun (2006) about the lack of promotion of Asian Americans to corporate leadership positions. Bunzel and Au (1987) compared Asian American and White students admitted

to the prestigious universities of Brown, Harvard, Princeton, and Stanford and found that lower numbers of Asian American students were accepted despite academic and extracurricular activities comparable to those of White students who were accepted. Asian groups have filed lawsuits claiming that Asian students must obtain higher GPA's and Scholastic Aptitude Test (SAT) scores compared to their White, Hispanic, and Black counterparts to gain admission into these universities (English, 2015).

Thus, the model minority myth ignores the struggles that Asian Americans face in education and employment and posits that Asian Americans as a group are academically and economically more successful than other racial/ethnic minority groups (Yoo et al., 2010). The model minority myth can affect all Asian Americans, regardless of subgroup membership. Therefore, following the model established by Yoo et al. (2010) who studied Asian Americans as a group in the development of their Internalization of the Model Minority Myth measure, the current study examined Asian Americans as a group and the academic and psychological implications of the model minority myth for Asian American undergraduate students.

Previous literature has discussed the role of the family in maintaining the model minority myth. Specifically, Sue and Okazaki (1990) argued that families believe that hard work and high educational achievement are the means through which social mobility could be attained, which aligns with the model minority myth. Early studies have suggested that the academic achievement of Asian American students may be due to their family and cultural values (Fejgin, 1995; Hao & Bonstead-Bruns, 1998; Peng & Wright, 1994; Uba, 1994). Moreover, a recent study examining the internalization of Asian American stereotypes and occupational choice for Asian American college students

discussed how the students' occupational choice may be shaped by cultural values (Shen, Liao, Abraham, & Weng, 2014). Thus, the influences of Asian cultural and family values on Asian American students need to be examined further.

Asian Cultural and Family Values

Asian cultural and family values can affect Asian American students' academic performance. Cultural values can be defined as "universalistic statements about what we think is desirable or attractive" (Smith & Bond, 1994, p. 52). In the 1980's, Lee Kuan Yew, the first Prime Minister of Singapore, proposed Asian values as a counterargument to Western foreign policies, which Yew argued imposed their values on other countries (Asciutti, 2009). Yew asserted that Asian values include the view that the individual exists as a part of the family and the rights of the group are prioritized over those of the individual (Asciutti, 2009). Asian values have roots in Confucianism, namely the values of social order and harmony (Asciutti, 2009). Many Asian cultures share the same values, including hard work, emotional self-control, humility, collectivism, adherence to norms, harmony, deference to authority figures, and avoidance of conflict (Feldman & Rosenthal, 1991; Kim, Atkinson, & Yang, 1999; Mau, 1997; Yoshioka & Schustack, 2001). In developing the Asian Values Scale, Kim et al. (1999) identified six factors, based on Asian cultural values, that differentiate Asian Americans from European Americans. These six are collectivism, conformity to norms, family recognition through achievement, emotional self-control, humility, and filial piety.

The values most relevant to the academic success of Asian American students are collectivism, family recognition through achievement, and filial piety. Collectivism has been defined by Kim, Yang, Atkinson, Wolfe, and Hong (2001) as the "importance of

thinking about one's group before oneself…and viewing one's achievement as the family's achievement" (p. 345). In their study comparing Chinese and European American university students, Li, Costanzo, and Putallaz (2010) found that perceived collectivistic values were positively related to better socio-emotional adjustment among the Chinese American students. Studying male and female South Korean university students, Cho, Mallinckrodt, and Yune (2010) found that collectivism was positively correlated with academic adjustment. Overall, collectivism has been found to be positively associated with academics.

According to Kim et al. (2001), family recognition through achievement is the value placed on "not bringing shame to the family by avoiding occupational or educational failures and by achieving academically" (p. 345). Academic achievement of children is one way of bringing honor to the family (Dundes, Cho, & Kwak, 2009), and Kim et al. (2001) asserted that failing to achieve academically may be perceived by family members as bringing shame to the family's reputation. Liu (2013) reported that family recognition through achievement was a positive predictor of the choice to pursue a traditional career for male Asian American students. Another Asian family value related to not bringing shame to the family is filial piety. While the Asian value of filial piety has been discussed as similar to Hispanic family values associated with familism, Toyokawa and Toyokawa (2013) argue that they are different constructs. In Asian cultures, filial piety is the duty of helping and respecting the family (Fuligni, Tseng, & Lam, 1999) with children accepting family hierarchical structures and taking care of older family members (Toyokawa & Toyokawa, 2013). Filial piety emphasizes that children must express loyalty, obedience, and emotional and financial support towards

their parents, as well as not engaging in behaviors that will bring shame to the family (Feldman & Rosenthal, 1991; Ho, 1994). A behavioral manifestation of this value is one's academic and career choices (Dundes et al., 2009). Examining the role of filial piety in Asian American university students' academic and career choices, Dundes et al. (2009) discovered that Asian American university students were more likely to report their parents' influence on their choice of universities, academic majors, graduate schools, and careers, as compared to White students.

Family relationships, however, can also have negative academic consequences. Comparing Asian American university students with African American and European American students, Castro and Rice (2003) found that the Asian American students expressed higher perceived parental expectations for achievement and also reported more perceived parental criticisms. Asian American college students have also reported lower levels of perceived parental support and poorer college adjustment in comparison to what was reported by European Americans (Chang, Heckhausen, Greenberger, & Chen, 2010).

Not only do Asian American students perceive high parental expectations and pressures regarding their academic achievement, university staff members have made this observation as well. In a qualitative study with administrators at college counseling centers, some administrators perceived a recent trend of parents "hovering" or being over-involved in their children's education and suggested that as a result students may struggle with making their own decisions in college (Watkins, Hunt, & Eisenberg, 2011) and may find decision making to be stressful. It is evident that family plays an important role in academic life of Asian American students.

Academic Stress

Cultural and family values influence not only academic achievement and academic and career choices but also academic stress among Asian American college students. Academic stress has been shown to affect students from various racial/ethnic groups. For example, in a study with diverse racial/ethnic first year university students, Chemers, Hu, and Garcia (2001) found that academic performance had a direct effect on stress. In a study conducted with Norwegian adolescents, school stress was positively associated with depression and negatively associated with life satisfaction among students between the ages of 13 and 18 (Moksnes, Løhre, Lillefjell, Byrne, & Haugan, 2016). Furthermore, Phinney, Dennis, and Osorio (2006) reported that, compared to White students, racial/ethnic minority students face increased academic stress related to their racial/ethnic identities. Studying distress among African American university students at a predominately White university, Neville, Heppner, Ji, and Thye (2004) described perceptions of race-related stress, psychological/interpersonal stress, and academic stress as being positively associated with distress. Negative psychophysiological manifestations of academic stress that included fatigue, headaches, and difficulties with concentration and memories have also been identified (Pozos-Radillo, Preciado-Serrano, Plascencia-Campos, Valdez-Lopez, & Morales-Fernandez, 2016). Based on this literature, it is clear that academic stress affects students across diverse racial/ethnic groups.

With Asian and Asian American students in particular, academic stress can have negative costs to mental and physical health. For example, when examining chronic academic stress among Japanese medical students, Kurokawa et al. (2011) found that it significantly and negatively impacted mental health. In their study of Chinese

international students enrolled in universities in the U.S., Liao and Wei (2014) reported a negative correlation between academic stress and positive affect. Finally, in their comparison of Indian and Malaysian adolescents, Khan, Hamdan, Ahmad, Mustaffa, and Mahalle (2016) found that Indian students reported greater academic stress and suicidal ideation compared to their Malaysian peers. In each of these Asian cultures, students are expected to excel in school and not bring shame to the family by failing. Therefore, a particularly relevant source of academic stress for Asian American students might be perceived parental expectations and pressure for high academic achievement.

Academic Stress and Perceived Parental Expectations and Pressure

As mentioned previously, perceived parental expectations and pressure can affect students' academic stress. Although academic functioning and mental health among European American and African American high school students have been identified as having a positive relationship with perceived parental involvement (Wang & Sheikh-Khalil, 2014) and among Asian American college students with authoritative parenting style (Turner, Chandler, & Heffer, 2009), Wang and Sheikh-Khalil argued that parental expectations may be seen as pressure to achieve academically and can lead to increased depression levels among Asian American students. For example, studying high school students in India, Deb, Strodl, and Sun (2015) found that perceived parental pressure, academic stress, and psychological difficulties were all positively related. Sarma (2014) reported similar findings for university students in India. Higher perceived parental pressure was directly related to more academic stress.

In their study of Asian American college students, Gloria and Ho (2003) reported that 88% of the mothers and 81% of the fathers strongly supported and encouraged their

child to obtain a college education. Gloria and Ho noted that social support was the strongest positive predictor of academic persistence decisions. Concluding that Asian American students may see family support actually as pressure to succeed academically, they suggested that feelings of shame, guilt, inferiority, and loss of face may result from perceived family pressure to succeed academically, especially when students do not meet their families' ideals of academic success. Indeed, in a more recent qualitative study with young Burmese refugees, Koh, Liamputtong, and Walker (2013) reported that these refugees had various reactions to parental expectations about their academics, with some experiencing stress as a result of perceived parental expectations. Specifically studying Asian American men, Liu (2002) asserted that perceived parental pressure is positively associated with academic stress, poor self-image, and interpersonal difficulties. With a sample of undergraduate students between the ages of 18 and 25, Chang et al. (2010) described that over involvement or directedness by parents in their children's education had a significant negative correlation with their children's academic achievement. Furthermore, Watkins et al. (2011) noted that college counselors agreed that perceived parental pressure for academic achievement often led to mental health difficulties such as depression. Parental messages that pressure their children to perform academically at or above the level of other children, that remind them of their family sacrifices to promote their academic success, and that suggest that academic performance honors the family have been studied (Dundes et al., 2009). These perceived parental expectations and pressures related to academic achievement among Asian American students can serve as sources of not only academic stress but also depression.

Depression

Depression was defined by the World Health Organization (WHO, 2012) as a mental disorder marked by "depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration" (p. 6). According to the WHO, depression is estimated to affect 350 million people worldwide and is the leading cause of disability. The World Health Survey claimed that among 17 countries approximately 1 in 20 individuals experienced a depressive episode in the past year. Studies specifically conducted in Asia have found depression prevalent in university students in Singapore (O'Brien et al., 2008), in India (Deb et al., 2016), and in Malaysia (Shamsuddin et al., 2013), as well as among Chinese adolescents (Huang, Xia, Sun, Zhang, & Wu, 2009). It would appear that depression is a mental health concern that is ubiquitous across countries worldwide and in Asian countries.

Depression can affect anyone, regardless of race or ethnicity. The U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC, 2011) reported the prevalence rate of current depression as 9.4% among Asian Americans, Hawaiian/Pacific Islander, American Indian/Alaska Native, and multiple race individuals 18 years of age or older. While this rate is higher than the rate of current depression among White adults (7.5%), it is lower than the rate of current depression among Blacks (12.7%) and Hispanics (9.5%), groups less likely to be enrolled in higher education. Although depression occurs across racial/ethnic groups, psychosocial and cultural factors related to depression may differ by racial/ethnic group. Therefore, one purpose of the current study was to examine psychosocial (family) and cultural factors related to depressive symptomatology among Asian American college students.

Depression among Asian Americans. According to epidemiological data from the Collaborative Psychiatric Epidemiology Surveys (CPES, 2001-2003), Asian individuals born outside of the U.S. reported the lowest rates of depression compared to other racial/ethnic groups (Jackson et al., 2011). Examining specific Asian groups, Jackson et al. (2011) found that Chinese participants born in the U.S. reported depression at a level three times higher than that of their Chinese counterparts born outside of the U.S. Moreover, using community-based data, Chang (2002) examined studies comparing Asian Americans to other American racial/ethnic groups on the prevalence of mental disorders and revealed that though Asian Americans reported lower rates of most mental disorders compared to their European American peers, they reported higher rates of mood disorders, such as depression and anxiety, as compared to their counterparts in Asia.

In a study with Asian Americans 18 years of age and older living in Hawaii, Aczon-Armstrong et al. (2013) investigated the relationship between chronic illness and depression and explained that 24% of their participants reported depression levels ranging from mild to severe. Greater endorsement or internalization of the model minority stereotype by Asian Americans was positively associated with depression (Chen, 1995; Panelo, 2010), mental health difficulties (Lee et al., 2009), and psychological distress levels and negatively related to help-seeking behaviors (Gupta, Szymanski, & Leong, 2011). Reviewing the literature on depression in Asian Americans, Kalibatseva and Leong (2011) reported mixed findings. Specifically, they noted that according to the research reviewed a small percentage of Asian Americans reported having an affective disorder as compared to the percentages of Latino/a Americans and African Americans. They also noted, however, that other research has reported Asian

Americans as having equal or greater rates of depression as compared to European Americans, while still other studies noted that U.S. born Asian Americans reported a greater depression prevalence rate compared to non-U.S. born Asian Americans. In their discussion of these mixed findings, Kalibatseva and Leong noted that western conceptualizations of depression emphasize the affective domain whereas eastern conceptualizations focus on somatic symptoms, which may account for the different findings.

As noted earlier, Asian Americans can face negative psychological symptoms from endorsing the model minority myth, a cultural variable of stereotypes about Asian Americans. For example, Chan and Mendoza-Denton (2008) proposed that anxious expectations of facing discrimination and cultural stereotypes were positively associated with lower self-esteem, a correlate of depression. Furthermore, Gupta et al. (2011) indicated that internalization of stereotypes is not only positively correlated with psychological distress but interferes with help-seeking behaviors. These studies suggest that "eastern" culture plays a role in depression; therefore, cultural variables should be considered when studying depression among Asian Americans.

Academic Stress and Depression. Researchers have linked academic stress and depression among students. For example, Flatt (2013) identified academic stress as being positively related to college student mental health concerns such as depression, anxiety, and suicide. These mental health issues have become prevalent among students in universities world-wide. For example, in Singapore, which has a higher literacy rate than other countries in Southeast Asia (O'Brien et al., 2008), there is great pressure for students to achieve academically, making these students at risk for increased emotional

stress that may trigger depression and other mental health concerns. Examining perceived parental pressure among university students in India, Sarma (2014) found that parental pressure positively predicted academic stress that, in turn, positively predicted depression. Specifically studying the links among self-esteem (identified as a self-belief), academic stress, and depression among university undergraduates in the U.S., Dixon and Robinson Kurpius (2008) noted that self-esteem, along with sense of mattering, negatively predicted academic stress and that academic stress then positively predicted depression. They concluded that, in addition to demographics, self-beliefs and academic stress need to be considered when studying depression among undergraduates. Along with Asian cultural values related to family and expectations for behavior, of particular interest in the current study were self-beliefs as they related not only to academic stress but also to depressive symptomology. First, however, a theoretical framework for understanding depression and distress is needed.

Theories of Depression and Anxiety. One of the leading theories of depression, grounded in the western concepts of individuality, is cognitive theory. Based on cognitive theory that argues that the individual's dysfunctional thinking affects his or her emotions and behaviors, Cognitive Behavior Therapy (CBT; Beck, Rush, Shaw, & Emergy, 1979) has been used to treat depression and to change negative beliefs (Beck, 2011). To foster long-term behavioral changes, CBT focuses on changing a client's beliefs about the self, others, and the world. From a cognitive theory perspective, one's self-talk or beliefs need to be examined when trying to explain behavior. For example, beliefs about one's self have been studied in relation to college students' academic stress and their academic achievement (Abouserie, 1994; Gloria & Robinson Kurpius, 2001;

Valentine, Dubois, & Cooper, 2004). However, when trying to understand depression among Asian Americans, variables that are relevant to the challenges of being a racial/ethnic minority in the U.S. also need to be considered. Specifically, the internalization of stereotypes associated with one's racial/ethnic minority group should not be ignored. When students have negative cognitions and beliefs about themselves based on their racial/ethnic minority identity, according to CBT, this can result in emotional distress and anxiety, an emotional state that closely overlaps with stress and can reflect high levels of stress.

A theoretical framework that can be used to explain the role of stereotypes on distress is the rejection-sensitivity model. Developed by Mendoza-Denton, Downey, Purdie, Davis, and Pietrzak (2002), the rejection-sensitivity model is a process model that argues that experiences of rejection as a member of a marginalized group can lead to anxiety about expecting, perceiving, and reacting to rejection based on group membership. Among African American college students at a predominately White university, individuals who scored high on rejection-based sensitivity reported more discomfort in the college environment, greater difficulty in transitioning to college, and decreases in grades over 2-3 years (Mendoza-Denton et al., 2002). Chan and Mendoza-Denton (2008) extended this theory to Asian Americans and posited that the anxious anticipation of status-based rejection and seemingly positive stereotypes about Asian Americans such as the model minority myth can lead to increased internalizing symptoms such as low self-esteem, depression, and anxiety among Asian Americans. The anxious anticipation of status-based rejection can be an ongoing process that affects the demeanors of Asian Americans. This theory proposes that even the internalization of

stereotypes that present positive perceptions by others can influence psychological distress symptoms. Both cognitive theory and the rejection-sensitivity model were used as theoretical foundations for the current study to help understand how perceived parental expectations for academic achievement, internalization of the model minority myth, and self-beliefs are related to academic stress and depression.

Self-beliefs

According to cognitive theory, one's cognitions or beliefs influence one's behaviors. Two cognitions or self-beliefs that are particularly relevant to college students are academic self-efficacy and self-construals. Rooted in Albert Bandura's (1997) social cognitive theory, self-efficacy is the belief in one's ability to succeed in a certain domain. Academic self-efficacy is a specific type of self-efficacy that can be defined as "personal judgments of one's capability to organize and execute courses of action to attain designated types of educational performance" (Zimmerman, 1995, p. 203). Research has consistently supported a positive relation between self-efficacy and achievement. For example, in their meta-analysis of the extant literature, Valentine et al. (2004) reported that more positive self-beliefs promoted higher achievement. Chemers et al. (2001) found that academic self-efficacy had a positive direct effect on the academic performance of first-year college students.

Academic self-efficacy has been studied with the academic achievement of various racial/ethnic groups outside of the U.S. For Australian high school students, academic self-efficacy has a stronger positive relationship with academic achievement compared to the relation between academic aspirations and academic achievement (Bales, Pidgeon, Lo, Stapleton, & Magyar, 2015). A study of mathematics self-efficacy,

a construct similar to academic self-efficacy, among middle school students in Korea, the Philippines, and the U.S. found that students in the U.S. reported significantly greater mathematics self-efficacy (Ahn, Usher, Butz, & Bong, 2016). In another study conducted with Korean middle schoolers, Bong, Hwang, Noh, and Kim (2014) examined perfectionism, motivation, and academic achievement and found that academic self-efficacy was a positive mediator of the pathway between perfectionism and academic achievement.

Academic self-efficacy is particularly relevant not just abroad, but also among students in the U.S. Using a mixed-methods approach, Booth, Abercrombie, and Frey (2017) found that for adolescents from diverse racial/ethnic groups in the U.S. academic self-efficacy was a positive predictor of academic achievement. In particular, Buriel, Perez, de Ment, Chavez, & Moran (1998) found that academic self-efficacy was a significant positive predictor of academic performance among Latino/a adolescents from immigrant families. Turner et al. (2009) examined academic self-efficacy, achievement motivation, parenting styles, and academic performance and found that while the interaction between academic self-efficacy and parenting style was not a significant predictor of academic performance, academic efficacy was still a significant positive predictor of academic performance. Specifically for Asian American college students, their reports of academic self-efficacy were positively correlated with academic achievement (Cho, 2011). Similarly, Asian American community college students' academic self-efficacy was positive related to academic achievement as measured by GPA (Edman & Brazil, 2007).

In addition to academic performance, self-efficacy impacts academic stress. In a study of the relation among the variables of academic self-efficacy, coping skills for stress, and academic performance, Khan (2013) reported that academic-self efficacy was positively correlated with the stress coping skills of college students. Academic self-efficacy was positively associated with better college adjustment amongst African American female university students (Thomas et al., 2009). Examining the coping behaviors of first-generation ethnic minority college students, Phinney and Haas (2003) found that students who reported having greater academic self-efficacy, as well as more social support, more successfully coped with academic stress as compared to students who reported poorer coping with academic stress. Chee, Shorty, and Robinson Kurpius (2018) also found that academic self-efficacy, along with cultural fit on campus, was a powerful negative predictor of academic stress among Native American college students. Dixon Rayle, Robinson Kurpius, and Arredondo (2006) reported that among freshmen female college students, greater academic self-efficacy was associated with less academic stress. Torres and Solberg (2001) noted that academic self-efficacy had a negative relationship with academic stress among Latino/a college students. In their study of the connections between stress, illness, self-efficacy, locus of control, and use of health services, Roddenberry and Renk (2010) reported that academic self-efficacy and academic stress were negatively correlated. These studies indicated that when students had greater confidence in their abilities to do well academically, they were less likely to experience high levels of academic stress.

Self-beliefs have also been linked to academic persistence decisions across multiple groups. Gloria, Robinson Kurpius, Hamilton, and Wilson (1999) investigated

the effects of self-beliefs, social support, and university comfort on the academic persistence decisions of African American college students and found that the self-belief of academic self-efficacy was a significant positive predictor of persistence decisions. Similarly, in their study of Latino/a university students, Torres and Solberg (2001) noted that academic self-efficacy was a positive predictor of intentions to persist in college. Examining the academic self-efficacy, stress, and academic performance of nontraditional, immigrant, and minority first year students at an urban university, Zajacova, Lynch, and Espenshade (2005) reported that while both stress and academic self-efficacy were significant predictors of academic success, academic self-efficacy was a more robust and positive predictor of academic success. Gloria and Robinson Kurpius (2001) conducted a study on academic nonpersistence among Native American undergraduates and found that students with positive self-beliefs and with higher academic self-efficacy about their abilities to obtain a college degree were more likely to persist in college. Also studying Native American undergraduates, Chee (2008) noted that academic self-efficacy, as well as cultural congruity, accounted for almost 50% of these students' persistence decisions. In their study with over 1150 undergraduates, Rigali-Oiler and Robinson Kurpius (2013) reported that academic self-efficacy was positively associated with academic persistence decisions among both European American and racial/ethnic minority college students. Furthermore, investigating the academic persistence decisions of female students from different racial/ethnic groups, Dixon Rayle et al. (2006) found that there were no differences between European American and racial/ethnic minority, female, college students in their self-beliefs and that self-beliefs, in particular academic self-efficacy, had a positive association with academic

persistence decisions. Specifically, looking at Asian American university students, Gloria and Ho (2003) also noted that academic self-efficacy was a significant positive predictor of academic persistence decisions, as well as academic stress. Considerable research had examined academic self-efficacy across various racial/ethnic groups, including Asian Americans, and found academic self-efficacy was consistently relevant to academic persistence decisions.

A second self-belief that may also impact emotions and behaviors is independent self-construal. As defined by Markus and Kitayama (1991), self-construal, the view of one's self as being either connected to or separate from others, affects one's behaviors. They identified two types of self-construals. Independent self-construal emphasizes one's self-expression and being unique, and interdependent self-construal emphasizes others' needs over one's own and fitting in. In other words, self-construal is another type of self-message about how one perceives one's self and others. Self-construal is relevant to the current study as Markus and Kitayama (1991) posited that self-construal may impact one's psychological functioning. For example, using cognitive theory to study a college and community sample of Asian Americans and European Americans, Aoki, Mearns, and Robinson Kurpius (2017) found that independent self-construal was a significant positive predictor of assertiveness and negative predictor of social anxiety. Among Vietnamese American adolescents, Lam (2006) noted that the adolescents with high levels of independent self-construal reported better perceived psychological adjustments in the areas of depression, distress, and substance use, compared to individuals who reported low levels of independent self-construal.

Additional research found that academic self-efficacy and independent self-construal have negative relations with mental health. For example, Ehrenberg, Cox, and Koopman (1991) found that academic self-efficacy was negatively correlated with depression in a sample of adolescents. Norasakkunkit and Kalick (2002) noted that social anxiety and depression were negatively associated with independent self-construal. In addition, independent self-construal had a negative relationship with depression and this relationship was mediated by high self-esteem and social support (Lam, 2005). Examining African American and Asian American college students' reported distress and self-construal, Christopher and Skillman (2009) posited that independent self-construal was a negative predictor of distress. Comparing anxiety, depression, loneliness, and perfectionism among Asian American and European American college students, Chang (2013) found that independent self-construal was negatively associated with depressive symptoms. In another study that compared European American and Asian American university students, Mak, Law, and Teng (2011) reported the pathway from independent self-construal with anxiety and depression, with independent self-construal having a direct negative relationship to depression for both Asian Americans and European Americans. Similarly, Barry (2000) studied Asian and Asian Americans in the U.S. and found that individuals who reported high independent self-construal did not report significant psychological distress, such as anxiety or depression. Other studies focusing on Asian and Asian Americans reported negative associations between independent self-construal and depression among Korean American university students (Bae, 1999) and Korean immigrants in the U.S. (Hyun, 2000). A more recent study by Tran, Su, Chong, and Woei-Haur (2017) found that lower independent self-construal was a positive

predictor of perceived discrepancies between an individual's actual and ideal positive attributes, which in turn was associated with more psychological distress. It is clear from these studies that academic self-efficacy and independent self-construal are relevant constructs that should be considered in the studies of diverse racial ethnic groups' mental health experiences, which includes depression.

With regard to academic functioning and academic stress, prior studies have investigated self-construal and found a positive link with academic achievement in mathematics (Luo et al., 2006) and between independent self-construal and completing a puzzle task (Dowd & Artistico, 2016). Among Asian international graduate students, Cross (1990) found that the students who endorsed higher independent self-construal levels reported less stress compared to Asian American students who reported lower independent self-construal. In a study of diverse college students, Minnaar (2016) reported that independent self-construal had a negative relationship with distress and academic adjustment. Sheu et al. (2014) reported that independent self-construal was a direct negative predictor of academic stress. This literature provides support for the link between independent self-construal and academic stress.

Consistent with cognitive theory, an individual's cognitions and beliefs may affect one's emotional experiences, including academic stress (Chee et al., 2018; Cross, 1990) and depression (Muris, 2002). One's self beliefs, specifically self-efficacy, has also been consistently related to academic persistence decisions (Chee, 2008; Dixon Rayle et al., 2006; Gloria & Ho, 2003; Gloria et al., 1999; Rigali-Oiler & Robinson Kurpius, 2013; Torres & Solberg, 2001). Of particular interest in the current study were the self-beliefs of Asian American undergraduate students, as they may serve as

protective factors while contending with cultural variables of perceived parental expectations for academic achievement and internalization of the model minority myth. Given that research has highlighted the links between self-beliefs (academic self-efficacy and independent self-construal) and the academic and emotional well-being undergraduate students, the current study examined these variables for their role in academic stress and depression of Asian American undergraduates.

Summary and Purpose of Current Study

It is evident that despite being the fastest growing racial/ethnic group in the U.S. (Lew, 2006) and obtaining high education levels as a group overall (Ryan & Bauman, 2016), Asian American college students still face many challenges. These challenges include decreases in GPAs as they progress in college (Dmitrieva et al., 2008), academic stress (Flatt, 2013; Liu, 2002), anxiety about facing stereotypes based on group membership (Chan & Mendoza-Denton, 2008), and depression (Aczon-Armstrong et al., 2013; Wang & Sheikh-Khalil, 2014). Cultural and family values (Chan & Mendoza-Denton, 2008) and endorsement of the model minority myth (Cheryan & Bodenhausen, 2000; Gupta et al., 2011) can serve as positive predictors of these challenges. Specifically, the Asian cultural and family values of collectivism, family recognition through achievement, and filial piety, in addition to internalization of the model minority myth, may serve as sources of pressure for Asian American university students to succeed academically, which may then be experienced as increased academic stress and depression. The current study examined cultural factors that are particularly relevant to depression and academic stress among Asian American undergraduates. Specifically, this study examined whether perceived parental expectations for academic achievement

and endorsement of the model minority myth were positively related to academic stress and depression.

Of additional importance in the study of academic stress and depression among Asian Americans are self-beliefs. Prior research has shown the self-belief of academic self-efficacy is related to depression and academic stress among college students (Chee et al., 2018; Dixon Rayle & Chung, 2007; Dixon Rayle et al., 2006; Dixon & Robinson Kurpius, 2008; Ehrenberg et al., 1991; Gloria & Ho, 2003; Khan, 2013; Roddenberry & Renk, 2010; Torres & Solberg, 2001) and to perceived parental expectations about students' academic life (Chang et al., 2010; Koh et al., 2013; Lew, 2006; Sarma, 2014; Watkins et al., 2011). Although fewer studies have examined academic stress as it relates to the independent self-construal self-belief (Cross, 1990; Minnaar, 2016; Sheu et al., 2014), research has been conducted with independent self-construal and academic adjustment (Luo et al., 2006; Minnaar, 2016). Studies on anxiety and depression among Asian Americans have found that negative predictors of anxiety and depression include self-construal (specifically independent self-construal) (Aoki et al., 2017; Bae, 1999; Barry, 2000; Chang, 2013; Hyun, 2000; Lam, 2005; Mak et al., 2011; Norasakkunkit & Kalick, 2002). Therefore, these self-beliefs need to be considered along with the family and cultural variables when attempting to understand the experiences of academic stress and depression among Asian American college students.

Study Hypotheses

Based on theory and the literature reviewed above, the current study examined self-beliefs and family and cultural variables as possible predictors of academic stress and depression among Asian American students. It also examined whether academic self-

efficacy and independent self-construal moderate the relation between perceived parental expectations for academic achievement and depression.

The following hypotheses were proposed:

H1: The self-belief variables of academic self-efficacy and independent self-construal will negatively predict academic stress ($H1_a$), and the family and cultural variables of perceived parental expectations for academic achievement and internalization of the model minority myth will positively predict academic stress among Asian American undergraduate students over and above what would be predicted by the self-belief variables ($H1_b$). $H1_a$ is based on the findings of Chee et al. (2018) and Minnaar (2016); $H1_b$ is based on the work of Koh et al. (2013) and Ng et al. (2007).

H2: The self-belief variables of academic self-efficacy and independent self-construal will negatively predict depression ($H2_a$), and the family and cultural variables of perceived parental expectations for academic achievement and internalization of the model minority myth will positively predict depression among Asian American undergraduate students over and above what would be predicted by the self-belief variables ($H2_b$). $H2_a$ is based on the work of Mak et al. (2011) and Ehrenberg et al. (1991); $H2_b$ is based on the findings of Chan and Mendoza-Denton (2008) and Wang and Sheikh-Khalil (2014).

H3: The self-belief variables of academic self-efficacy and independent self-construal will moderate the effect of perceptions of parental expectations for academic achievement on academic stress and on depression among Asian American undergraduates. Among those reporting lower academic self-efficacy and lower independent self-construal, the association between perceived parental expectations for

academic achievement and academic stress and depression would be stronger than in those with high academic self-efficacy and high independent self-construal. This hypothesis is based on the work of Chang (2013).

CHAPTER 2

METHOD

Recruitment

Institutional Review Board (IRB) approval was obtained before the commencement of data collection (see Appendix A). Participants were recruited through emails, online postings, social media, and word of mouth. Professors in the Asian American Studies and engineering departments of universities with large Asian/Asian American student populations were sent emails requesting their help in disseminating the recruitment e-mail to their students. An e-mail containing the study's weblink was sent to the Asian American Psychological Association's list-serv, and weblinks to the study were posted on the social media websites of reddit.com and craigslist (see Appendix B for the recruitment email). Furthermore, participants were recruited through Amazon Mechanical Turk (Amazon MTURK) and Surveytandem.com. In addition, participants attending Arizona State University (ASU) were recruited through advertisements posted on myASU, recruitment e-mails to professors in the Asian Pacific American Studies program, and through extra credit opportunities for undergraduate students in career development and psychology classes. Flyers promoting the study were also posted at an Asian grocery store and bakery in the Phoenix area (see Appendix C).

Power Analysis

The power of a statistical test is the likelihood of it being able to reject correctly a null hypothesis when the hypothesis is false (Greene, 2000). According to Frazier, Tix, and Barron (2004), statistical power of a test is affected by factors such as effect size, sample size, and measures used. Park (2008) recommended that a power analysis be

conducted a priori to ensure a sufficient sample size for a study. Thus, an a priori power analysis was conducted before the commencement of data collection to consider the factors listed by Frazier et al. In the current study, G*Power was used to estimate the sample size needed to detect significant differences in a sample that reflect differences that actually exist in a population. Much of the social science literature assumes moderate effect sizes of .15 in the population. Using G*Power, with 4 predictor variables, an alpha of .05 and power of .95, the estimated minimum sample size necessary for this study was 129. However, despite a priori support for the associations among the study variables in the literature, if a low effect size of .05 was estimated in the population with a power of .90, the minimum sample needed is 313. To ensure adequate power for the current study, 313 participants were recruited to account for a possible conservative population effect size and to decrease the chances of making a Type II error.

Participants

Originally, data from 914 participants from across the U.S. were collected online. Data from 124 participants were omitted because they did not self-identify as Asian, from 373 participants because they did not self-identify as Asian American, and from 19 participants because they were not undergraduate students. Two forced response validity checks were utilized to decrease the likelihood of random responding from participants. The first forced response item instructed participants to "select strongly disagree for this question" and the second forced response item asked participants to "please select '4' for this question." Data from another 50 students were omitted because they failed to answer either the first or second forced response validity check item or both correctly.

The final sample consisted of 314 (221 female, 89 male, 4 nonbinary) undergraduate students from universities across the U.S. who self-identified as Asian American and who ranged in age from 18 to 25 years (M = 20.47, SD = 1.98). While most of the participants were born in the U.S. (n = 225; 71.66%), 19.75% (n = 62) of the sample were born outside of the U.S. and came to the U.S. before age 18. The majority of participants were from universities on the West Coast, with 42.04% (n = 132) of the participants attending a university in Arizona and 17.20% (n = 54) in California, with the rest representing 20 other states. The most prevalent ethnic groups in the sample were Chinese (n = 66; 21.02%), Filipino (n = 62; 19.75%), and Vietnamese (n = 42; 13.38%). Complete information on ethnicity is presented in Table 1.

The most frequently reported parental yearly income was $100,000 or higher. Participants' year in school included: 67 (21.4%) first year students in their second semester or quarter; 73 (23.3%) second year students; 88 (28.1%) third year students, 83 (26.5%) fourth year students; and 2 (0.6%) fifth- and sixth-year students. When asked place of residence, 88 (28%) reported living on-campus, 120 (38.2%) living off-campus, and 97 (30.9%) living at home with family. Over half of the participants' mothers and fathers had earned a bachelor's degree or higher (see Table 1 for complete demographics).

Table 1

Demographic Information

Variable	*n*	*%*
Race/Ethnicity		
Chinese	66	21.02
Filipino	62	19.75
Vietnamese	42	13.38
Indian	32	10.19
Korean	31	9.87
Japanese	28	8.92
Taiwanese	7	2.23
Cambodian	5	1.59
Bengali	4	1.27
Hmong	2	.64
Indonesian	2	.64
Lao	2	.64
Burmese	1	.32
Thai	1	.32
Multiethnic (Two or more Asian Ethnicities)	29	9.24
Income Level		
$0-19,999	24	7.64
$20,000-39,999	34	10.83
$40,000-59,999	52	16.56

Table 1 (continued)

Demographic Information

Variable	*n*	*%*
Income Level		
$60,000-79,999	47	14.97
$80,000-99,999	51	16.24
$100,000 and higher	106	33.76
Mother's Highest Educational Attainment		
Some High School	34	10.83
High School Diploma	41	13.06
Some College	61	19.43
Bachelor's Degree	100	31.85
Master's Degree	44	14.01
Doctoral Degree	19	6.06
Father's Highest Educational Attainment		
Some High School	23	7.32
High School Diploma	48	15.29
Some College	53	16.88
Bachelor's Degree	83	26.43
Master's Degree	53	16.88
Doctoral Degree	41	13.06

Measures

After reading an online informed consent (see Appendix D), in addition to a demographic survey, participants completed six instruments online. These instruments were the Educational Degree Behaviors Self-Efficacy Scale (Gloria et al., 1999), Self-Construal Scale (Singelis, 1994), Living-up-to-Parental Expectation Inventory (Wang & Heppner, 2002), Internalization of the Model Minority Myth Measure (Yoo et al., 2010), Daily Hassles Index for College Stress (Schafer, 1987), and the Center for Epidemiological Studies Depression Scale (Radloff, 1977). Copies of these instruments are presented in Appendices F-K.

Demographic Survey. Participants completed a demographic survey that asked about gender, race/ethnicity, age, current educational level, place of birth, generational status, number of years in the U.S., whether they identify as an international student, living situation, and primary language. Living situation was coded by whether or not they currently lived with their family (0 = *No*, 1= *Yes*). If participants were not born in the U.S., they were asked at what age they immigrated to the U.S. Parental information, including where parents were born, parents' annual income, and parents' education levels, were also asked. A copy of the demographic survey is in Appendix L.

Educational Degree Behaviors Self-Efficacy Scale (EDBSES). The EDBSES (Gloria et al., 1999) is a 14-item self-report measure of academic self-efficacy based on Lent, Brown, and Larkin's (1986) work studying science and engineering students' confidence in their abilities to do the tasks needed to obtain their degrees. A sample academic task is "Take good class notes." Each item is answered on a 7-point Likert-type scale ranging from 1 = *no confidence at all* to 7 = *complete confidence*. Responses

are summed and averaged to create an average scale score, with higher scores indicating more positive academic self-efficacy. For the current study, the scores ranged from 2.86 to 7. Scores on the EDBSES have been shown to have strong internal consistency for racial/ethnic minority college samples, with Cronbach's alphas of .93 for an African American sample (Gloria et al., 1999), .94 for a Latino/a sample (Gloria, Castellanos, Lopez, & Rosales, 2005), .91 for a Native American sample (Chee et al., 2018), and .93 for an Asian American sample (Gloria & Ho, 2003). In addition, the scale has been shown to have predictive validity for the academic persistence decisions of African Americans (Gloria et al., 1999), of Native Americans (Gloria & Robinson Kurpius, 2001), and of Asian Americans (Gloria & Ho, 2003). For the current study sample, the Cronbach's alpha was .90.

Self-Construal Scale (SCS). The SCS (Singelis, 1994) is a 30-item self-report measure of how participants' self-perceptions relate to how they see themselves in relation to other people, whether they see themselves as separate from or connected to others. The independent and interdependent subscales each consist of 15 items. This study only looked at independent self-construal as it is conceptualized as one's "internal abilities, thoughts, and feelings" (Singelis, 1994, p. 581) and this study focused on examining the role of one's beliefs related to personal thoughts and feelings. Furthermore, Singelis has asserted that independent and interdependent self-construals are orthogonal constructs. Sample items from the independent subscale are "I enjoy being unique and different from others in many respects" and "I can talk openly with a person who I meet for the first time, even when this person is much older than I am." Participants were asked how much they agreed with the statements on a 7-point Likert-

type scale (1 = *strongly disagree* to 7 = *strongly agree*). Subscale scores were derived by adding the item responses within each subscale and dividing by 15 to get a mean score for each subscale. A higher score reflects stronger independent self-construal. For the current study, scores ranged from 1.07 to 7. For European American and Asian American samples, Cronbach's alpha reliability coefficients were .69 and .70 for the independent subscale, respectively (Singelis, 1994). Park et al. (2011) reported a .76 internal consistency reliability for the independent self-construal subscale with an Asian American sample. Aoki et al. (2017) reported a .78 Cronbach's alpha for the Asian American and European American participants in their study. Gudykunst and Lee (2003) summarized studies that provided support for both the convergent and construct validity of this scale. Responses to the independent subscale yielded a Cronbach's alpha of .84 for this study.

Living-up-to-Parental Expectation Inventory (LPEI). The LPEI (Wang & Heppner, 2002) is a 64-item self-report measure of the degree to which an individual is living up to parental expectations. This measure consists of three subscales: Personal Maturity, Academic Achievement, and Dating Concerns. Because the current study was only interested in perceptions of parental expectations related to academic achievement, only the 9 items that assessed Perceived Parental Expectations on the Academic Achievement subscale were used. A sample item is "Parents expect me to perform better than others academically." Each item is rated on a 6-point Likert-type scale ranging from 1 = *Not at all* to 6 = *Entirely*. The Perceived Parental Expectation score is calculated by summing and dividing by the number of items, with higher mean scores indicating perceptions of greater parental expectations. For the current study, scores ranged from

1.22 to 6. Cronbach's alphas of .89 for Chinese students (Leung, Hou, Gati, & Li, 2011), .85 for Taiwanese students (Wang & Heppner, 2002), and .95 for Asian American students (Shen et al., 2014) have been reported for Perceived Parental Expectations on the Academic Achievement subscale. Wang and Heppner (2002) conducted exploratory factor analysis and found support for the construct validity of the LPEI scale. For the current study sample, the Cronbach's alpha for the Parental Expectations on the Academic Achievement subscale was .82.

Internalization of the Model Minority Myth Measure (IM-4). The IM-4 (Yoo et al., 2010) is a 15-item self-report measure of the internalization of the model minority myth. This scale consists of two subscales, the 10-item Model Minority Myth of Achievement Orientation (MM-Achievement Orientation) subscale and the 5-item Model Minority Myth of Unrestricted Mobility (MM-Unrestricted Mobility) subscale. The MM-Achievement Orientation subscale assesses the myth of Asian Americans having high perseverance, work ethic, and drive to succeed, and the MM-Unrestricted Mobility subscale assesses the myth that Asian Americans' success compared to other racial minority groups is due to a belief in being treated fairly and not experiencing racism. Because the current study was interested in the model minority myth as it relates to academic achievement, only the MM-Achievement Orientation subscale was utilized. Each item on the MM-Achievement Orientation subscale begins with "In comparison to other racial minorities (e.g., African Americans, Hispanics, and Native Americans) …" and is answered on 7-point Likert-type scale (1 = *strongly disagree* to 7 = *strongly agree*). A sample item is "Asian Americans get better grades in school because they study harder." Responses are summed and averaged to create an average subscale score,

with higher scores indicating greater internalization of the model minority myth. For the current study, scores ranged from 1 to 7. Yoo et al. (2010) found partial support for the convergent validity of the MM-Achievement Orientation subscale with the Asian American Values Scale. The MM-Achievement Orientation subscale has been found to have high internal consistency with Cronbach's alphas of .91 among samples of Asian American undergraduates for two studies (Kim & Lee, 2014; Yoo et al., 2010). The Cronbach's alpha was .94 for this study sample.

Daily Hassles Index for College Stress. The Daily Hassles Index for College Stress (Schafer, 1987) is a 29-item self-report measure of academic stress. The items assess different areas of perceived stress for college students such as interpersonal relationships, finances, and schoolwork. Sample items include "worrying about grades" and "being lonely." Participants are asked to rate each item on a 5-point scale ranging from 1 = *not at all stressful* to 5 = *highly stressful*. Mean scale scores are derived by summing and averaging responses. Higher mean scores reflect more daily stress. For the current study, scores ranged from 1.45 to 4.86. Schafer (1987) initially examined the construct validity of this scale by conducting a study correlating scores of 106 undergraduate students on this scale with their scores on measures of depression, distress, and internal locus of control. Schafer found that this scale had negative associations with depression and distress and a positive association with internal locus of control. Cronbach's alphas of .89 (Dixon & Robinson Kurpius, 2008), .85 (Gloria & Robinson Kurpius, 2001) and .81 (Gloria et al., 1999) have been reported for this scale. For the current study sample, the Cronbach's alpha was .88.

Center for Epidemiological Studies Depression Scale (CES-D). The Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977) is a 20-item self-report measure of depressive symptomology in the general population. The CES-D assesses symptoms of depression across four domains – negative/depressed affect, positive affect, somatic issues, and interpersonal difficulties. Sample symptoms include "I felt depressed," "I felt lonely," and "I did not feel like eating; my appetite was poor." Participants rated how often they felt each symptom in the past week on a 4-point scale ranging from 0 = *Rarely or none of the time (Less than 1 day)* to 3 = *Most or all of the time (5-7 days)*. Total scores range from 0 to 60 and are derived by summing responses to the 20 items. Higher scores indicate more severe depressive symptomology. For the current study, scores ranged from 0 to 56. Studying the discriminant validity of the CES-D and the Beck Depression Inventory (BDI), Santor, Zuroff, Ramsay, Cervantes, and Palacios (1995) found that although the BDI was better at assessing severe depression across a range of depressive symptoms, the CES-D was better at predicting depression among college students. Given that the current study focused on college students, the CES-D was deemed to be an appropriate instrument to assess depressive symptomology. Among Asian American samples, Cronbach's alphas of .86 for Chinese American women (Li & Hicks, 2010) and .89 for Korean American adolescents (Kim, Landis, & Cain, 2013) have been reported. Radloff (1977) reported Spearman-Brown's split-half reliabilities of .85 for the general population and .90 for a patient population. The Cronbach's alpha was .91 for this study sample.

Procedures

Asian American undergraduates were recruited for the current study. Participants were told that the study was about the academic experience and family relationships of Asian American college students. This online study took approximately 10 - 15 minutes to complete. Participants recruited through Amazon MTURK were informed that they would be compensated with $0.50 credit for completing the survey. Other participants were told that by participating in the study, they could enter a raffle drawing to win one of twenty $25 gift cards. Students were provided with informed consent through the first screen of the online survey to protect student anonymity. The informed consent screen stated that their participation was voluntary and that they could discontinue the study at any time (see Appendix D for informed consent letters).

Data Analyses Plan

Preliminary Analyses. First, preliminary analyses were run on the associations among the demographic variables, academic self-efficacy, independent self-construal, perceptions of parental expectations for academic achievement, internalization of the model minority myth, academic stress, and depression. Means, standard deviations, and ranges were calculated for each study variable. Cronbach's internal consistencies were also calculated for responses to each study measure. These are reported in the Results chapter. The Statistical Package for the Social Sciences (SPSS) Version 25 (IBM Corp, 2017) was used to conduct these preliminary analyses.

Tests of Assumptions. Relevant to multiple regression analyses, the assumptions of multicollinearity, normality, and homoscedasticity were tested. Tolerance and variance inflation factors (VIF) were analyzed to test for multicollinearity, Predicted Probability (P-P) plots were examined to test for normality, and residual scatterplots were

used to test for homoscedasticity. SPSS Version 25 was used to conduct these tests of assumptions.

Regression Analyses. Hypothesis 1 proposed that the self-belief variables of academic self-efficacy and independent self-construal would negatively predict academic stress ($H1_a$) and that the family and cultural variables of perceptions of parental expectations for academic achievement and internalization of the model minority myth would positively predict academic stress among Asian American undergraduate students over and above what would be predicted by the self-belief variables ($H1_b$). Hypothesis 2 asserted that the self-belief variables of academic self-efficacy and independent self-construal would negatively predict depression ($H2_a$) and that the family and cultural variables of perceptions of parental expectations for academic achievement and internalization of the model minority myth would positively predict depression over and above what would be predicted by the self-belief variables ($H2_b$). Hierarchical multiple regression analyses were used to test hypotheses 1 and 2. Based on Beck's (2011) cognitive theory, which asserts that self-beliefs are powerful negative predictors of psychological distress such as depression and stress, the self-beliefs variables were entered first (after controlling for living with family). The cultural and family variables were entered in the following step to examine cultural and family variables that may be relevant for the academic stress and depression experienced by Asian American undergraduates. Hypothesis 3 predicted that the self-belief variables of academic self-efficacy and independent self-construal would moderate the effect of perceptions of parental expectations for academic achievement on academic stress ($H3_a$) and on depression ($H3_b$) among Asian American undergraduates. In other words, among those

reporting lower academic self-efficacy and independent self-construal, the association between perceptions of parental expectations for academic achievement and academic stress and depression would be stronger than in those with high academic self-efficacy and independent self-construal. Hypothesis 3 was tested using a moderated hierarchical multiple regression. SPSS Version 25 was used to conduct these hierarchical multiple regression analyses and the SPSS macro (Hayes, 2012) was used to test hypothesis 3.

CHAPTER 3

RESULTS

Preliminary Analyses

Comparing First Quarter/Semester Students and Other Students. Data were collected from students at universities operating from quarter systems (academic year being divided into fall, winter, and spring terms) or from semester systems (academic year being divided into fall and spring terms). Independent samples *t*-tests were conducted to compare academic self-efficacy, independent self-construal, perceptions of parental expectations for academic achievement, internalization of the model minority myth, academic stress, and depression among students who were in their first quarter/semester of college ($n = 34$) and students who had attended at least one full quarter/semester of university ($n = 314$). There were no significant differences in academic self-efficacy, independent self-construal, perceptions of parental expectations for academic achievement, internalization of the model minority myth, and depression between these two groups of students. There was a significant difference, however, in the scores for academic stress for first quarter/semester college students ($M = 2.82$, $SD = .62$) and students who had attended at least one full quarter/semester of university ($M = 3.08$, $SD = .62$); $t\ (346) = -2.35$, $p = .02$; $d = .42$. Thus, 34 students who were in their first quarter/semester of school were not included in this study as their scores on academic stress were significantly lower than the scores of students who had attended at least one full quarter/semester of university. The remaining data were from 314 (221 female, 89 male, 4 nonbinary) self-identified Asian American undergraduate students in

the U.S. who had completed at least one quarter/semester of university studies. The data from this sample were analyzed to test the three hypotheses proposed for this study.

Tests of Assumptions. Four assumptions of multiple regressions were tested. Tolerance and variance inflation factors (VIF) were examined to test for multicollinearity. The tolerance (ranged from .65 to .96) and VIF (ranged from 1.04 to 1.55), indicating that multicollinearity was not a concern among the study variables. In addition to multicollinearity, the assumptions of normality, linearity, and homoscedasticity were examined. The test for normality was conducted by examining the skewness and kurtosis values for each study variable. George and Mallery (2010) described skewness and kurtosis values falling between -1 and +1 as excellent in meeting the normality assumption. While academic self-efficacy, perceived parental expectations for academic achievement, academic stress, and depression met the normality assumption, independent self-construal and internalization of the model minority myth, however did not meet the normality assumption; independent self-construal reported a skewness value of -.39 (*SE* = .14) and kurtosis value of 1.00 (*SE* = .27) and the model minority myth had a skewness of -.84 (*SE* = .14) and kurtosis of 1.11 (*SE* = .27). Thus, independent self-construal and internalization of the model minority myth were transformed via the reflect and square root method per the recommendations of Tabachnick and Fidell (2007). See Table 2 for the transformed kurtosis and skewness statistic values.

Table 2

Skewness and Kurtosis Statistics

Variable	Skewness Statistic (SE)	Kurtosis Statistic (SE)	Transformation Method	Transformed Skewness Statistic	Transformed Kurtosis Statistic
Academic Self-Efficacy	-.233 (.138)	-.486 (.274)			
Independent Self-Construal	-.385 (.138)	1.000 (.274)	Reflect + Square Root	-.103	.412
Parental Expectations	-.365 (.138)	-.305 (.274)			
Model Minority Myth	-.835 (.138)	1.111 (.274)	Reflect + Square Root	.161	.314
Academic Stress	.020 (.138)	-.309 (.274)			
Depression	.549 (.138)	-.321 (.274)			

To test for linearity and homoscedasticity, the scatterplots of the residuals between the predicted dependent variables and the errors of prediction were examined. The scatterplots of the standardized predicted dependent variables and the standardized residuals appeared in an overall rectangular pattern suggesting that the linearity assumption was met (Tabachnick & Fidell, 2007). In addition, the bands that enclosed the residuals in the scatterplots were approximately equal in width, showing that the

homoscedasticity assumption was met (Tabachnick & Fidell, 2007). See Figures 1 and 2 for the scatterplot graphs in Appendix E.

Descriptive Statistics. The means, standard deviations, and zero-order correlations among the measures used in this study are presented in Table 3. The control variable, living with family, was positively related to endorsement of the model minority myth ($r = .20$, $p < .01$) and to academic stress ($r = .12$, $p < .05$). Students living with their family more strongly endorsed the model minority myth and reported more academic stress. The zero-order correlations revealed that internalization of the model minority myth was positively correlated with the other predictor variables (academic self-efficacy, independent self-construal, perceived parental expectations for academic achievement). In addition, the two self-belief variables (academic self-efficacy and independent self-construal) were strongly correlated (see Table 3).

Table 3

Descriptive Statistics and Correlations among Study Variables

Variable	*M*	*SD*	1	2	3	4	5	6	7
1. Living with Family	---		---	-.09	-.03	.09	.20**	.12*	.11
2. ASE	5.31	.97		---	.43**	-.01	.13*	-.22**	-.31**
3. ISC	4.83	.82			---	.01	.15**	-.13*	-.22**
4. PPE	4.13	1.01				---	.12*	.21**	.10
5. MMM	4.89	1.24					---	.09	-.10
6. Academic Stress	3.08	.62						---	.55**
7. Depression	22.09	11.80							---

Note. Living with family was coded (0 = Not Living with family, 1 = Living with family). ASE = Academic self-efficacy. ISC = Independent self-construal. PPE = Perceived Parental Expectations. MMM = Model Minority Myth. Values based on scale means. *M* = Mean, *SD* = Standard Deviations. *n* = 314.
* $p < .05$. ** $p < .01$

Hypothesis Testing

To test the first two hypotheses, two hierarchical multiple regression analyses were conducted. Academic stress served as the dependent variable for the first regression analyses and depression the dependent variable in the second regression analyses.

Hypothesis 1 predicted that the self-belief variables of academic self-efficacy and independent self-construal would negatively predict academic stress ($H1_a$) and that the family and cultural variables of perceptions of parental expectations for academic

achievement and the model minority myth would positively predict academic stress over and above what would be predicted by the self-belief variables ($H1_b$). To control for the possible influence of living with family on hypothesis 1, living with family was coded ("0" = not living with family, "1" = living with family) and entered first in the hierarchical multiple regression analysis. Living with family accounted for 1.5% of the variance in academic stress, $F(1, 312) = 4.70$ $p = .03$ and had a positive relationship with academic stress ($\beta = .12$, $p = .03$). In other words, those living with family reported higher academic stress. As a significant positive predictor of academic stress, this justifies its use as a control variable. In step 2, the self-belief variables, which were strongly correlated ($r = .43$, $p < .01$), contributed significantly to the regression model predicting academic stress, $\Delta F(2, 310) = 7.77$, $p = .001$, accounting for an additional 4.70% of the variance in academic stress. The beta weights indicated that while academic self-efficacy was a significant negative predictor of academic stress ($\beta = -.20$, $p = .001$), independent self-construal was not a significant predictor ($\beta = -.04$, $p = .53$). Adding the family and cultural variables to the regression equation in step 3 explained an additional 4.68% of the variation in academic stress, $\Delta F(2, 308) = 7.87$, $p < .001$. Academic self-efficacy continued to be a significant negative predictor of academic stress ($\beta = -.20$, $p = .001$). Perceptions of parental expectations for academic achievement was a positive predictor of academic stress ($\beta = .19$, $p = .001$). Independent self-construal ($\beta = .06$, $p = .34$) and internalization of the model minority myth ($\beta = -.09$, $p = .10$), however, were not significant predictors of academic stress (see Table 4 for regression results). Thus, hypothesis 1 was only partially supported. Lower academic self-efficacy

and greater parental expectations for academic achievement were related to more academic stress.

Table 4

Hierarchical Regression Analysis Predicting Academic Stress

	R	R^2	ΔR^2	β	sr^2	p
Step 1	.12	.02	.02			.03
Living with Family				.12*	.01	.03
Step 2	.25	.06	.05			.001
Living with Family				.10	.01	.06
Academic Self-Efficacy				-.20**	.03	.001
Independent Self-Construal				.04	.00	.53
Step 3	.33	.11	.05			<.001
Living with Family				.07	.00	.23
Academic Self-Efficacy				-.20**	.03	.001
Independent Self-Construal				.06	.00	.34
Parental Expectations				.19**	.03	.001
Model Minority Myth				-.09	.01	.10

Note. Living with Family was coded (0 = Not living with family, 1= Living with family). Independent Self-Construal and the Model Minority Myth were transformed for normality.
*$p < .05$. ** $p < .01$

Hypothesis 2 predicted that the self-belief variables, academic self-efficacy and independent self-construal, would negatively predict depression ($H2_a$) and that the family and cultural variables, perceptions of parental expectations for academic achievement and

internalization of the model minority myth, would positively predict depression over and above what would be predicted by the self-belief variables ($H2_b$). The self-belief variables, entered in step 1, accounted for 10.30% of the variance in depression scores, $F(2, 311) = 17.85$, $p < .001$. Examination of the beta weights revealed that academic self-efficacy was a significant negative predictor of depression ($\beta = -.26$, $p < .001$). Independent self-construal was not a significant predictor of depression ($\beta = .10$, $p = .10$). In step 2 the family and cultural variables explained an additional 1.46% of the variation in depression. This change, however, was not statistically significant, $\Delta F(2, 309) = 2.56$, $p = .08$. Academic self-efficacy continued to be a significant negative predictor of depression ($\beta = -.26$, $p < .001$) and perceptions of parental expectations for academic achievement was a positive predictor of depression ($\beta = .11$, $p = .04$). Independent self-construal ($\beta = .10$, $p = .10$) and internalization of the model minority myth ($\beta = .06$, $p = .27$), however, did not predict depression (see Table 5 for regression results). Thus, hypothesis 2 was only partially supported.

Table 5

Hierarchical Regression Analysis Predicting Depression

	R	R^2	ΔR^2	β	sr^2	*p*
Step 1	.32	.10	.10			<.001
Academic Self-Efficacy				-.26**	.06	<.001
Independent Self-Construal				.10	.01	.09
Step 2	.34	.12	.02			.08
Academic Self-Efficacy				-.26**	.05	<.001
Independent Self-Construal				.10	.01	.10
Parental Expectations				.11*	.01	.04
Model Minority Myth				.06	.00	.27

Note. Independent Self-Construal and the Model Minority Myth were transformed for normality.
*$p < .05$. ** $p < .01$.

Finally, moderated hierarchical multiple regression analyses were conducted to test hypothesis 3, that the self-belief variables of academic self-efficacy and independent self-construal would moderate the effect of perceptions of parental expectations for academic achievement on academic stress ($H3_a$) and on depression ($H3_b$) among Asian American undergraduates. For these analyses the predictor (perceptions of parental expectations for academic achievement) and moderator (independent self-construal and academic self-efficacy) variables were centered to make the results more interpretable by standardizing the scores of these scales, consistent with the recommendations by Frazier et al. (2004). The interaction terms (perceptions of parental expectations for academic

achievement x independent self-construal; perceptions of parental expectations for academic achievement x academic self-efficacy) were created to determine whether the effects of the perceptions of parental expectations for academic achievement on academic stress and depression varied across different levels of academic self-efficacy and independent self-construal.

In the moderated hierarchical multiple regression analysis for academic stress, parental expectations for academic achievement were entered in the first step. In step 2, independent self-construal and academic self-efficacy were entered and accounted for an additional 5.70% of the variance in academic stress, $F(1, 310) = 9.39$, $p < .001$. In step 3, the interaction terms (parental expectations for academic achievement x independent self-construal; parental expectations for academic achievement x academic self-efficacy) were entered but did not account for any additional variance in academic stress, $\Delta F(1, 308) = .77$; $\Delta R^2 = .01$, $p = .46$. In other words, independent self-construal and academic self-efficacy did not moderate the effect of perceptions of parental expectations for academic achievement on academic stress among Asian American undergraduates (see Table 6 for moderated regression results).

Table 6

Moderated Regression Analysis Examining the Interaction Effects of Academic Self-Efficacy and Independent Self-Construal on Academic Stress

	R	R^2	ΔR^2	*B*	*SE*	sr^2	*p*
Step 1	.09	.01	.01				.12
Parental Expectations				.07	.05	.01	.12
Step 2	.25	.07	.06				<.001
Parental Expectations				.10*	.05	.01	.04
Academic Self-Efficacy				-.14**	.04	.04	<.001
Independent Self-Construal				-.03	.05	00	.55
Step 3	.26	.07	.01				.46
Parental Expectations				.09*	.05	.01	.04
Academic Self-Efficacy				-.15**	.04	.04	<.001
Independent Self-Construal				-.01	.05	.00	.82
Parental Expectations x Academic Self-Efficacy				.03	.05	.00	.58
Parental Expectations x Independent Self-Construal				-.06	.05	.00	.22

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

For depression, the moderated hierarchical multiple regression analysis included parental expectations for academic achievement in the first step. In step 2, independent self-construal and academic self-efficacy were entered and accounted for an additional 10.02% of the variance in depression, $F(2, 310) = 17.68$, $p < .001$. In step 3, the

interaction terms (parental expectations for academic achievement x independent self-construal; parental expectations for academic achievement x academic self-efficacy) were entered but did not account for any additional variance in depression, $\Delta F(2, 308) = .53$; $\Delta R^2 = .09$, $p = .59$. In other words, independent self-construal and academic self-efficacy did not moderate the effect of perceptions of parental expectations for academic achievement on depression among Asian American undergraduates (see Table 7 for moderated regression results). Therefore, hypothesis 3 was not supported.

Table 7

Moderated Regression Analysis Examining the Interaction Effects of Independent Self-Construal and Academic Self-Efficacy on Depression

	R	R^2	ΔR^2	*B*	*SE*	sr^2	*p*
Step 1	.03	.00	.00				.56
Parental Expectations				-.51	.88	.00	.56
Step 2	.32	.10	.10				<.001
Parental Expectations				.01	.85	.00	.99
Independent Self-Construal				-1.50	.86	.01	.08
Academic Self-Efficacy				-3.21**	.73	.06	<.001
Step 3	.33	.11	.00				.59
Parental Expectations				-.04	.85	.00	.96
Independent Self-Construal				-1.27	.89	.01	.16
Academic Self-Efficacy				-3.34**	.74	.06	<.001
Parental Expectations x Independent Self-Construal				-.95	.94	.00	.31
Parental Expectations x Academic Self-Efficacy				.17	.94	.00	.86

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

Post-Hoc Analyses

Post-hoc analyses were conducted on several demographic variables. Independent samples *t*-tests were conducted to compare academic self-efficacy, independent self-construal, perceptions of parental expectations for academic

achievement, internalization of the model minority myth, academic stress, and depression among female students (n = 221) and male students (n = 89). As expected, the female students reported higher academic stress (M = 3.15, SD = .60) compared to the male students (M = 2.91, SD = .64); t (308) = 3.11, p = .002; d = .39. There was also a significant difference in the scores for depression for female students (M = 22.93, SD = 11.75) and male students (M = 19.49, SD = 11.56); t (308) = 2.34, p = .02; d = .30. Moreover, an independent samples t-test was conducted to see if there were differences in the study variables among students with different generational statuses. Students who identified as third generation (being born in the U.S. and having parents who were born in the U.S.), reported less perceived parental expectations for academic achievement (M = 3.75, SD = .95) compared to other students who identified as either first, 1.5, or second generation (M = 4.23, SD = .99); t (295) = 3.26, p < .001; d = .49.

In addition, the demographic variable of parents' annual income was negatively related to endorsement of the model minority myth (r = -.17, p = .002). Students who reported lower parental incomes more strongly endorsed the model minority myth. The demographic variable of which region of the U.S. students attended college did not significantly corelate with any of the study variables.

CHAPTER 4

DISCUSSION

The aim of this study was to explore the associations between self-beliefs, family and cultural variables, and academic stress and depression among Asian American undergraduate students. While studies have examined academic stress and depression with the self-belief variables of academic self-efficacy and independent self-construal among college students, the possible roles of family and cultural variables should not be ignored in the examination of academic stress and depression for Asian American college students. Specifically, perceptions of parental expectations for academic achievement and the endorsement of the model minority myth may be especially relevant for this population given the importance of the Asian values of family recognition through achievement, filial piety, and collectivism (Kim et al., 1999).

In the current study, of the two self-beliefs studied, academic self-efficacy consistently emerged as a key variable. Grounded in Bandura's (1997) social cognitive theory, academic self-efficacy is a belief that an individual can successfully complete academic tasks such as taking tests and completing assignments. Academic self-efficacy was the strongest predictor of academic stress among Asian American students. As students reported having higher academic self-efficacy, they also reported lower academic stress. It is not surprising that academic self-efficacy predicted academic stress as they both are concerned with academic tasks. Academic self-efficacy focuses on perceptions of one's ability related to completing academic tasks, whereas academic stress is about whether the academic task itself was stressful. The finding that academic self-efficacy had a negative relationship with academic stress replicates previous findings

in the literature. For example, Roddenberry and Renk (2010) reported that there was a significantly negative correlation between academic self-efficacy and academic stress experienced by university students. Phinney and Haas (2003) found that first-year college students with higher academic self-efficacy coped better with academic stress. Looking specifically at freshmen female students, Dixon Rayle et al. (2006) noted that high academic self-efficacy was negatively related to academic stress. Among Latino/a university students, the students who reported greater academic self-efficacy were less likely to report academic stress (Torres & Solberg, 2001). Furthermore, Chee et al. (2018) reported that academic self-efficacy had a negative relationship with academic stress among Native American students and Phinney and Haas (2003) with racial/ethnic minority students. Chee et al. explained that the negative association of academic self-efficacy with academic stress may be due to students perceiving that by changing their cognitions and behaviors, they are better able to cope with various academic demands and thereby experience less academic stress. Indeed, Khan (2013) and Phinney and Haas (2003) found that university students with greater academic self-efficacy reported better coping skills for stress.

In addition to predicting academic stress, academic self-efficacy was also a significant predictor of depression. Depression is a mental health concern that consists of depressed mood, loss of interest, feelings of guilt and worthlessness, loss of energy, concentration difficulties, changes in appetite, and sleep disturbances (WHO, 2012). Beck's (2011) cognitive theory posited that dysfunctional thoughts and negative beliefs about the self, the world, and the future can lead to depression. In this study, the more students had negative thoughts and beliefs about their ability to do the required academic

tasks of being a college student, the more depressive symptoms they experienced. In other words, students who had less confidence in their abilities to do academic-related work and tasks may have felt less positive about themselves and endorsed depressive symptoms such as depressed mood, feelings of guilt and worthlessness, loss of appetite, and sleep disturbance. This finding is consistent with Ehrenberg et al.'s (1991) and Muris's (2002) studies with adolescent students. Ehrenberg et al. asserted that perceived competence in one's academic abilities may be especially important for the depression experienced by adolescents. Muris noted that his finding that students' lack of confidence (academic self-efficacy) was linked to depressive symptoms was supported by Bandura's (1997) theory of self-efficacy. Indeed, the current study's finding that academic self-efficacy was negatively related to both stress and depression supports cognitive theory, that thoughts influence behaviors and emotions.

It should be noted that academic stress and depression had a strong positive correlation. The relationship between academic stress and depression has also been reported by previous researchers (Flatt, 2013; Moksnes et al. 2016; O'Brien et al., 2008; Sarma, 2014). Both constructs are closely related and are about emotional outcomes; however, they each have distinct aspects. Academic stress focused on the behaviors related to the academic context, depression focused on mood state. The finding that academic self-efficacy accounted for a significant shared variance in both of these variables shows the importance of academic self-efficacy in the lives of Asian American undergraduates. Indeed, academic self-efficacy has been found consistently to be important for students, whether in the U.S. (Booth et al., 2017; Buriel et al., 1998; Chemers et al., 2001; Chee, 2008; Chee et al., 2018; Cho, 2011; Dixon Rayle & Chung,

2007; Dixon Rayle et al., 2006; Dixon & Robinson Kurpius, 2008; Edman & Brazil, 2007; Ehrenberg et al., 1991; Gloria & Ho, 2003; Gloria & Robinson Kurpius, 2001; Khan, 2013; Norasakkunkit & Kalick, 2002; Phinney & Haas, 2003; Rigali-Oiler & Robinson Kurpius, 2013; Roddenberry & Renk, 2010; Thomas et al., 2009; Torres & Solberg, 2001; Turner et al., 2009; Zajacova et al., 2005) or internationally (Bales et al., 2015; Bong et al., 2014; Muris, 2002).

A second self-belief that was investigated was independent self-construal. Introduced by Markus and Kitayama (1991), self-construal is an individual's sense of self that affects one's thoughts, feelings, and behaviors. Independent self-construal, a type of self-construal, is the view of the self that is separate from others and focuses more on one's own abilities and experiences over the thoughts, feelings, and behaviors of others. The current study proposed that similar to academic self-efficacy, independent self-construal would also serve as a negative predictor of academic stress. Independent self-construal, however, did not predict academic stress. This finding is in contrast with previous research examining independent self-construal and academic functioning among diverse university students. For example, independent self-construal was negatively associated with stress levels reported by Asian American students (Cross, 1990) and with distress and academic adjustment reported by diverse university students (Minnaar, 2016). Independent self-construal focuses on one's view of the self in relation to others whereas academic self-efficacy is centered on one's beliefs about one's abilities to complete academic tasks. It is important to note that independent self-construal measured a more generalized view of one's self in relation to others and therefore may not have been relevant to the specific experiences of academic stress.

Similarly, independent self-construal was also not a significant predictor of depression. While this supports the finding of Okazaki (1997), who reported that independent self-construal was not a predictor of depression, it does not support the findings of other research studies. For example, Aoki et al. (2017) reported that independent self-construal was a negative predictor of social anxiety among Asian Americans and European Americans, and Lam (2006) noted that independent self-construal was negatively related to depression among Vietnamese adolescents. Independent self-construal was found to be negatively associated with depression among Korean Americans (Bae, 1999), among Asian and Asian American college students and community members (Barry, 2000), and among Asian American and European American university students (Mak et al., 2011; Norasakkunkit & Kalick, 2002). The current study finding that independent self-construal did not predict either academic stress or depression may be explained by the positive correlation between independent self-construal and academic self-efficacy. Although the zero-order correlations revealed that independent self-construal was negatively correlated with both academic stress and depression, its shared variance with academic self-efficacy may have suppressed its predictive ability. When these two beliefs are studied together, academic self-efficacy is the more powerful predictor. It should be noted that in the studies that found that independent self-construal was associated with depression (Bae, 1999; Barry, 2000; Mak et al., 2011; Norasakkunkit & Kalick, 2002), these studies did not consider academic self-efficacy. Perhaps independent self-construal is a suppressor variable, enhancing the magnitude of the relation between academic self-efficacy with academic stress and depression.

In addition to self-beliefs, the current study also examined family and cultural variables. Specifically, perceived parental expectations for academic achievement and internalization of the model minority myth were studied as predictors of academic stress and depression. Of these two variables, perceived parental expectations for academic achievement became a powerful positive predictor of both academic stress and depression. Studies comparing Asian American university students with students from other racial/ethnic groups have reported that Asian Americans experience greater perceived parental expectations for achievement (Castro & Rice, 2003) and also, less parental support (Chang et al., 2010). This highlights the importance in taking the role of parents into consideration for Asian American students.

Students who reported higher perceived parental expectations for their academic achievement may have experienced these expectations as parental pressure, which in turn results in more stress related to their academic activities and more depressive symptoms. This finding is consistent with previous research that found that perceived parental pressure for academic achievement was associated with the experiences of academic stress and depression among Asian and Asian American students. For example, studying Asian American male college students, Liu (2002) noted a positive relation between perceived parental pressure and academic stress. Among high school students, Wang and Sheikh-Khalil (2014) noted that parental expectations could have been perceived as pressure to achieve academically and may increase depression. Examining perceived parental pressure among high school students in India, Deb et al. (2015) reported positive associations between perceived parental pressure with academic stress and depression. Similar results were found with students in Singapore (O'Brien et al., 2008). Watkins et

al. (2011) noted that college counselors also viewed parental pressure as being a possible precursor for depressive symptoms among university students.

These findings of the positive relations between perceived parental expectations and academic stress and depression are not surprising when considering Asian cultural values that relate to academic achievement. These values include, family recognition through achievement, filial piety, and collectivism.

A significant cultural value that is reflected in the associations between perceived parental expectations for academic achievement with academic stress and depression is family recognition through achievement. Students must avoid bringing shame to their family by being academically successful and attaining successful careers (Kim et al., 2001; Liu, 2013). Doing well academically is a way to bring honor to the family and fulfill the value of family recognition through achievement (Dundes et al., 2009). Failing or doing poorly academically can be interpreted as bringing shame to the family (Kim et al., 2001). The value of family recognition through achievement was demonstrated in Koh et al.'s (2013) study that found that female Burmese refugees often hid poor grades from their parents. They did not want to bring shame to their family and this was noted as a source of stress. Furthermore, Shen et al. (2014) reported that high levels of perceived parental pressure and expectations can also influence Asian American college students' choices in academic majors and occupations. They suggested that Asian American students may feel overwhelmed by high parental pressure, which in turn may result in decreases in self-efficacy and increases in symptoms of stress, anxiety, and self-doubt. The cultural value of family recognition through achievement may be reflected in parental expectations for academic achievement, and when students perceive high

parental expectations for achievement they experience more academic stress and depression.

The second cultural value of filial piety may help explain the current study findings. Filial piety is the duty of children to take care of, honor, and avoid bringing shame to the family by expressing loyalty and obedience to their family (Feldman & Rosenthal, 1991; Fuligni et al., 1999; Ho, 1994; Toyokawa & Toyokawa, 2013). Similar to the value of family recognition through achievement, Dundes et al. (2009) argued that filial piety may be manifested behaviorally. For example, in her study of Indian university students, Sarma (2014) asserted that the positive relation between perceived parental pressure and academic stress, which in turn led to depression, may be explained in part by *dharma*, an Indian cultural value of one's duty in life being related to others. The concept of *dharma* is similar to the Asian cultural value of filial piety, as both constructs are concerned with one's duty to others that may be manifested in one's responsibilities in the academic and career domains (Sarma, 2014). Sarma concluded that the perceptions of parents' expectations include the concept of *dharma* and thus the idea of one's duty to others may be linked to greater academic stress. Because students honor their families and do not want to shame the family, they may feel more stressed as they perceive greater parental expectations for their academic success.

The third cultural value that helps to explain the relation between perceived parental expectations for academic achievement and academic stress and depression is collectivism. Collectivism is the prioritizing of one's group's needs over one's own needs and conceptualizing one's achievement as the group's achievement (Kim et al., 2001). Family can be identified as a group whose needs need to be met. Studying

collectivism among South Korean university students, Cho et al. (2010) found that collectivism had a positive link with academic adjustment. Among Chinese students, collectivism was a positive predictor of academic self-efficacy (Li et al., 2010). Although collectivism was not specifically examined in the current study, perceived parental expectations for academic achievement might be explained by the cultural value of collectivism, when family is defined as a group whose needs take precedence over one's own needs. In the present study, the relation of perceived parental expectations for academic achievement on academic stress and depressive symptoms may be conceptualized as students' perceiving their achievement as their family's (group) achievement and feeling stress and depressive symptoms if they believe they are not meeting their parents' expectations. It is evident that multiple aspects of Asian culture must be taken into consideration when trying to understand how perceived parental expectations for their achievement impact the academic stress and depression experienced by Asian American students.

A second family and cultural variable studied was internalization of the model minority myth, which is a stereotype that Asian Americans are high academic achievers and experience low rates of mental health concerns (Oyserman & Sakamoto, 1997; Wong et al., 1998). For this study, only the achievement orientation subscale was used as this subscale focuses on beliefs related to perseverance, work ethic, and drive to succeed, behaviors relevant to being a student. Although it was expected that internalization of the model minority myth would influence the academic stress and depression of the Asian American students in this study, it did not emerge as a significant predictor.

The current study's finding conflicts with previous research examining the endorsement of the model minority myth and academic achievement and depression. For example, internalization of the model minority myth has been reported to impact negatively the mathematical performance of female Asian American college students (Cheryan & Bodenhausen, 2000). Cho (2011) found that endorsement of the model minority myth was positively related to the stress experienced by Asian American young adults. Gupta et al. (2011) also found that the endorsement of this stereotype was positively associated with psychological distress. Specifically investigating depression among Chinese American college students, Chen (1995) reported that the more students internalized the model minority myth, the greater depression they experienced. Panelo (2010) also found that feeling pressure to endorse the model minority myth was also related with greater depressive symptoms. Although most of the research suggests that endorsement of the model minority myth is related to greater distress and depression, Chu (2001) found no relation between internalization of the model minority myth and depression. Chu explained this finding in light of the possible protective role of parental involvement and social support against depression. Though parental support was not studied in the current research, living with family served as a control variable for predicting academic stress and was positively correlated with internalization of the model minority myth and academic stress. Students living with family were more likely to endorse the model minority myth and experience academic stress. Thus, it may be that for the students in this study living with family contributed to greater endorsement of the model minority myth along with parental pressure for achievement and academic stress.

In this study, the model minority myth was measured using the IM-4 Achievement Orientation subscale, which asks participants to answer questions in comparison to other racial/ethnic groups. Perhaps this scale was not sensitive in assessing students' endorsement of the model minority myth as relevant to them personally. In other words, students may have answered the questions based on their meta-awareness of the model minority myth, rather than from their own views about the model minority myth. Instead, students appeared to be more concerned about their own parents' expectations for their academic achievement. Although internalization of the model minority myth was not correlated with the outcome variables (academic stress and depression), it was positively related with the other three predictor variables (academic self-efficacy, independent self-construal, and perceived parental expectations for academic achievement). While not powerful enough on its own, when combined with these other variables to predict academic stress, it made a small but nonsignificant contribution ($p = .10$). Based on the literature and these finding, research with Asian American students should continue to investigate this cultural construct as well as the role of the parents in more depth.

Furthermore, it was predicted that the self-belief variables (academic self-efficacy and independent self-construal) would moderate the effects of parental expectations for academic achievement on academic stress and depression. Specifically, parental expectations for academic achievement was expected to be the most maladaptive (predict the most academic stress and depression) for students who endorsed low academic self-efficacy and low independent self-construal. Parental expectations for academic achievement was expected to be the most adaptive (predict the least amount of academic

stress and depression) for students who endorsed high academic self-efficacy and high independent self-construal. Contrary to the hypothesis, the self-belief variables did not interact with perceived parental expectations for academic achievement to predict academic stress or depression. These results suggest that the effect of perceived parental expectations for academic achievement on academic stress and depression are the same regardless of one's self-beliefs. It is possible that the Asian cultural values that underlie parental expectations (family recognition through achievement, filial piety, and collectivism) are deeply engrained and may have been so powerful that they influenced academic stress and depression regardless of the different levels of academic self-efficacy and independent self-construal. Although academic self-efficacy may not moderate the strength of the relations between perceived parental expectations for academic achievement and academic stress and depression, because academic self-efficacy and perceived parental expectations for academic achievement were both found to have powerful direct effects on academic stress and depression, they are both important to consider in the study of Asian American undergraduate students.

Limitations

There were limitations of this study that should be noted. The first limitation concerns the study sample. An important concern is the heterogeneity in the racial/ethnic groups of the Asian American sample in the study. While increasing generalizability of the study's findings and while the rationale was the modern minority myth can affect Asian Americans across different groups, the importance of studying Asian Americans using disaggregated data by racial/ethnic group has been argued for (Tran & Birman, 2010) and may explain why endorsement of the model minority myth was not a

significant predictor of academic stress or depression in this study. There may be differences across racial/ethnic subgroups that may be masked by examining the Asian American students as one group. Future studies may want to examine a specific Asian American sub-group to see if the endorsement of model minority myth is a significant predictor of academic stress or depression. Another concern with the sample is that the participants were primarily from colleges on the west coast and were primarily female students, both of which again limit generalizability.

Another limitation is the current study's research design, which was cross-sectional and captured responses at only one point in time. The study was also quantitative in nature and consisted of participants answering questions on Likert-type self-report measures. While the quantitative design allows for statistically robust analyses, there may be some limitations with interpreting the students' responses. The quantitative research design does not provide contextual information that may impact the students' responses. For example, a qualitative or mixed-methods design would provide possible explanations for the study's hypotheses that were not supported. Similarly, the cross-sectional study sample does not allow for causal interpretations to be made. Thus, future studies examining the self-belief and family and cultural variables' associations with academic stress and depression may benefit from a mixed-methods study design.

Furthermore, the study measures, particularly the use of independent self-construal, may not have accurately captured the construct being studied. The predictor variables, while statistically significant, captured only a small percent of the variance in the outcome variables. Finally, the study as proposed did not examine potentially

relevant demographic variables, such as gender, parental income, and generational status as part of the preliminary analyses.

Clinical Implications and Directions for Future Research

In spite of the study's limitations, the findings have significant clinical implications for mental health professionals working with Asian American undergraduate students. The findings highlight the importance of assessing an Asian American client's academic self-efficacy, especially when the client is reporting depression or distress over coursework or academic tasks. Students with low academic self-efficacy do not believe in their ability to complete academic tasks and as a result may experience academic stress and/or depression. Based on Beck's (2011) cognitive theory, cognitive behavior therapy (CBT) can be used as an intervention to decrease depressive symptoms by challenging negative thought patterns and beliefs and replacing them with more positive cognitions and beliefs. The current study provides empirical support for the possible benefits of addressing negative thought patterns and beliefs that they cannot do the academic tasks successfully when working with students who report feelings of academic stress and depression. Future research should continue to examine a variety of self-beliefs to determine their role in the well-being of Asian American undergraduates.

In addition, this study highlights the importance of considering cultural values in working with clients, especially clients from racial/ethnic minority groups (Sue, Arredondo, & McDavis, 1992). When working with Asian American undergraduate students in therapy, the family and cultural variable of perceived parental expectations for academic achievement should be examined. Along with previous research, this study found that academic stress and depression were positively related (Dixon & Robinson

Kurpius, 2008; Flatt, 2013; O'Brien et al., 2008; Sarma, 2014). The extent to which academic stress is a precursor to depression was not examined; however, early interventions that address self-efficacy and cultural variables related to academic stress could be preventative and deter poor self-efficacy and parental pressure from escalating into students reporting depression.

This study makes a positive contribution to the understanding of the role of self-beliefs (specifically academic self-efficacy) and family and cultural variables (specifically perceived parental expectation for achievement) have on the psychological well-being of Asian American students. It is essential to explore any distorted or negative beliefs related to academic tasks and to understand how their cultural beliefs impact them. As noted previously, in spite of being the most highly educated racial/ethnic group in the U.S., Asian American students still face multiple challenges as students. Mental health professionals and especially counseling psychologists have the multicultural knowledge and skills to develop prevention programs or to work with students either individually or in groups to address their academic stress and depression and to foster educational success and emotional well-being.

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APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

EXEMPTION GRANTED

Sharon Kurpius
CISA: Counseling and Counseling Psychology
480/965-6104
sharon.kurpius@asu.edu

Dear Sharon Kurpius:

On 2/22/2018 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	The Role of Parental Expectations and Self-Beliefs on Academic Stress and Depression among Asian American Undergraduates
Investigator:	Sharon Kurpius
IRB ID:	STUDY00007720
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• Aoki Dissertation Informed Consent M-Turk.pdf, Category: Consent Form; • Aoki Dissertation Informed Consent Not M-Turk.pdf, Category: Consent Form; • Aoki Recruitment email.pdf, Category: Recruitment Materials; • Aoki Dissertation Instruments.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Aoki Formatted HRP-503a-TEMPLATE_PROTOCOL_SocialBehavioralV02-10-15.docx, Category: IRB Protocol;

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 2/22/2018.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Stephanie Aoki
Stephanie Aoki

APPENDIX B

RECRUITMENT EMAIL

Subject: Participate in a study for a chance to win a gift card

Dear Prospective Participant,

My name is Stephanie Aoki, M.S. and I am a counseling psychology graduate student currently working on my dissertation project at Arizona State University. I would like to invite you to participate in my research study that examines the academic experiences and family relationships of Asian American college students. You may participate if you are an Asian American undergraduate student currently enrolled at a university and between the ages of 18 and 25. Participation in this online study will take approximately 15-20 minutes of your time.

If you are interested in completing this study, please click on this link:

https://tinyurl.com/AAAcadem

Upon completion of the survey you will have the option to enter a drawing to win one of twenty $25 Amazon gift cards (odds of winning are 1 in 15). If you know other Asian American undergraduate students who may be interested in contributing to this study, please feel free to forward them the link.

For questions or concerns please contact: Stephanie Aoki, M.S. at skaoki@asu.edu or Sharon Robinson-Kurpius, PhD at sharon.kurpius@asu.edu. This research has been reviewed and approved by the ASU IRB (STUDY00007720). You may talk to them at (480) 965-6788 or by email at research.integrity@asu.edu.

I hope that you would consider participating and helping to distribute this survey opportunity. Thank you!

Sincerely,

Stephanie Kyoko Aoki, M.S.
Doctoral Candidate, Counseling Psychology
College of Integrative Sciences and Arts
Arizona State University
skaoki@asu.edu

APPENDIX C

RECRUITMENT FLYER

Are you Between the Ages of 18-25? Are you an Asian American Undergraduate Student?

If so, participate in an online study about academic experiences and family relationships!

- Complete an online survey that will take ~20 minutes.
- As a thank you, you will have the chance to win 1 of 20 $25 Amazon gift card (the odds of winning are about 1 in 15)
- TO PARTICIPATE, complete the online survey by going to:

https://tinyurl.com/AAAcadem

- For questions or more information, please contact:

Stephanie Aoki, M.S., Ph.D. Candidate
Counseling and Counseling Psychology
College of Integrative Sciences and Arts
Arizona State University
skaoki@asu.edu

APPENDIX D

INFORMED CONSENT LETTERS

Research Informed Consent

Dear participant.

My name is Stephanie Aoki. I am a PhD student under the direction of Dr. Sharon Robinson-Kurpius in the Counseling Psychology Program at Arizona State University.

I am conducting a dissertation study to find out about the academic experiences and family relationships of Asian American undergraduates. You must self-identify as Asian American and must be between the ages of 18 and 25 to participate in this study. I will ask you to answer questions about your feelings toward school, importance of family relationships, feelings and behaviors in various situations, college stress, and how you felt and behaved in the past week.

Your participation will involve completing questionnaires and will require approximately 15-20 minutes of your time. At the end of the survey, you will also have the option to provide your name and email address through a separate website to be entered in a raffle for one of twenty $25 Amazon gift cards. This information will be collected in a separate form and will not be matched to your survey responses.

You are not likely to experience any more than minimal discomfort. You may choose not to answer any questions you do not feel comfortable answering.

You are free to withdraw from participation at any time you wish and will not suffer any lack of benefits or services which you may otherwise be entitled to. Your participation is strictly voluntary.

The results of this study may be published but the information you submit will be confidential to the extent allowed by law.

If you have any questions, please feel free to contact Stephanie Aoki at skaoki@asu.edu or Dr. Sharon Robinson-Kurpius at Sharon.Kurpius@asu.edu.

By completing and submitting the questionnaires/surveys you are agreeing to participate in this study.

Sincerely,

Stephanie Aoki, M.S.

Research Informed Consent - MTurk

Dear participant.

My name is Stephanie Aoki. I am a PhD student under the direction of Dr. Sharon Robinson-Kurpius in the Counseling Psychology Program at Arizona State University.

I am conducting a dissertation study to find out about the academic experiences and family relationships of Asian American undergraduates. You must self-identify as Asian American and must be between the ages of 18 and 25 to participate in this study. I will ask you to answer questions about your feelings toward school, importance of family relationships, feelings and behaviors in various situations, college stress, and how you felt and behaved in the past week.

Your participation as an MTurk worker will involve completing questionnaires and will require approximately 15-20 minutes of your time. Amazon.com will automatically compensate participants with $.50.

You are not likely to experience any more than minimal discomfort. You may choose not to answer any questions you do not feel comfortable answering.

You are free to withdraw from participation at any time you wish and will not suffer any lack of benefits or services which you may otherwise be entitled to. Your participation is strictly voluntary. The results of this study may be published but the information you submit will be confidential to the extent allowed by law.

Your MTurk worker ID will only be collected for the purposes of distributing compensation, will be removed from the data set, and will not be linked with survey responses. Please note that MTurk worker IDs are linked to Amazon.com public profiles and Amazon.com may disclose workers' information to others who request this information for tax purposes.

If you have any questions, please feel free to contact Stephanie Aoki at skaoki@asu.edu or Dr. Sharon Robinson-Kurpius at Sharon.Kurpius@asu.edu. Please note that with any contact made between workers and the researchers, your email address will automatically be inserted into the message as well as your name so the we may reply to you. Thus, it is possible that when you make contact with us that your name and e-mail address will be included.

By completing and submitting the questionnaires/surveys you are agreeing to participate in this study.

Sincerely,
Stephanie Aoki, M.S.

APPENDIX E

FIGURES

Figure 1. Scatterplot of the Residuals between Academic Stress and Errors Predicted

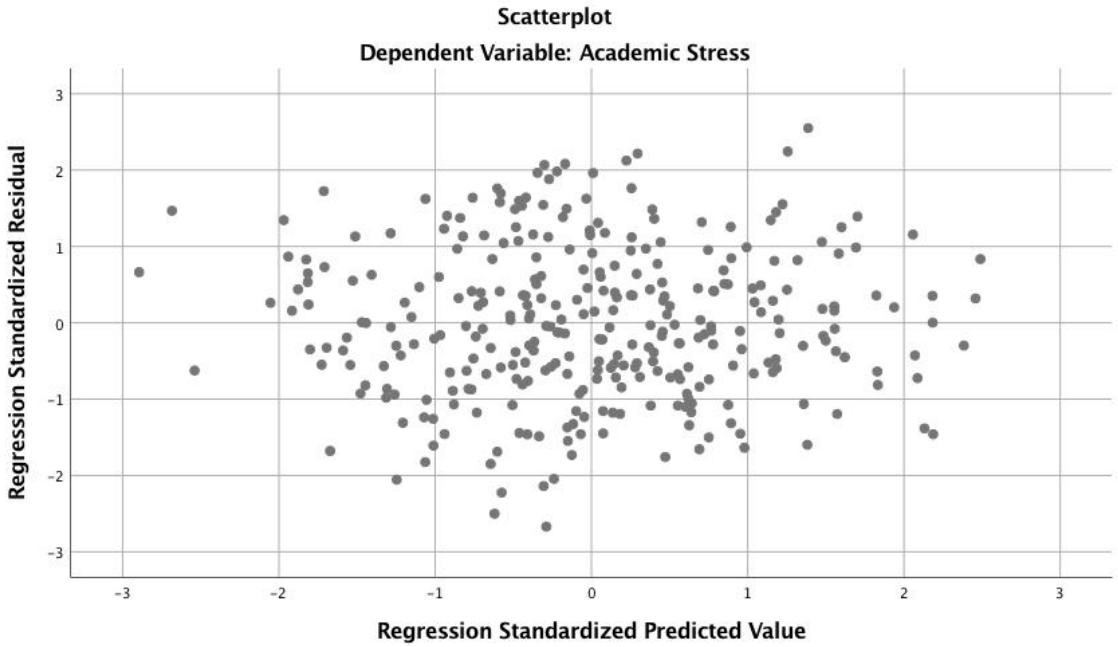
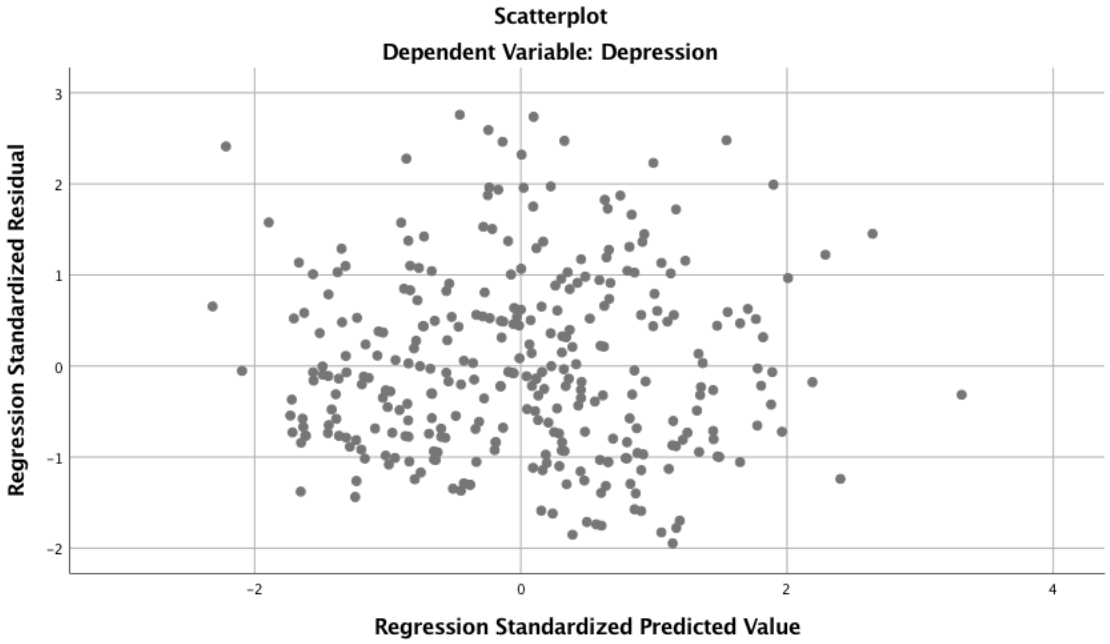


Figure 2. Scatterplot of the Residuals between Depression and Errors Predicted



APPENDIX F

EDUCATIONAL DEGREE BEHAVIORS SELF-EFFICACY SCALE (EDBSES)

Self Efficacy

Assuming that you are motivated to do your best, please indicate how confident you are that you could successfully do the following tasks. Circle NA (not applicable) if the task no longer applies to you. How **confident** are you that you could:

	Not at all						**Extremely**
1. Research a term paper.	1	2	3	4	5	6	7
2. Ask a question in class.	1	2	3	4	5	6	7
3. Do well on your exams.	1	2	3	4	5	6	7
4. Join a student organization.	1	2	3	4	5	6	7
5. Take good class notes.	1	2	3	4	5	6	7
6. Make new friends at college.	1	2	3	4	5	6	7
7. Keep up to date with your schoolwork.	1	2	3	4	5	6	7
8. Manage time effectively.	1	2	3	4	5	6	7
9. Talk to your professors.	1	2	3	4	5	6	7
10. Write course papers.	1	2	3	4	5	6	7
11. Understand your textbooks.	1	2	3	4	5	6	7
12. Ask a professor a question.	1	2	3	4	5	6	7
13. Talk to university staff.	1	2	3	4	5	6	7
14. Participate in class discussions.	1	2	3	4	5	6	7

APPENDIX G

SELF-CONSTRUAL SCALE (SCS)

INSTRUCTIONS

This is a questionnaire that measures a variety of feelings and behaviors in various situations. Listed below are a number of statements. Read each one as if it referred to you. Beside each statement write the number that best matches your agreement or disagreement. Please respond to every statement. Thank you.

1=STRONGLY DISAGREE	**4=DON'T AGREE OR**	**5=AGREE SOMEWHAT**
2=DISAGREE	**DISAGREE**	**6=AGREE**
3=SOMEWHAT DISAGREE		**7=STRONGLY AGREE**

__1. I enjoy being unique and different from others in many respects.
__2. I can talk openly with a person who I meet for the first time, even when this person is much older than I am.
__3. Even when I strongly disagree with group members, I avoid an argument.
__4. I have respect for the authority figures with whom I interact.
__5. I do my own thing, regardless of what others think.
__6. I respect people who are modest about themselves.
__7. I feel it is important for me to act as an independent person.
__8. I will sacrifice my self interest for the benefit of the group I am in.
__9. I'd rather say "No" directly, than risk being misunderstood.
__10. Having a lively imagination is important to me.
__11. I should take into consideration my parents' advice when making education/career plans.
__12. I feel my fate is intertwined with the fate of those around me.
__13. I prefer to be direct and forthright when dealing with people I've just met.
__14. I feel good when I cooperate with others.
__15. I am comfortable with being singled out for praise or rewards.
__16. If my brother or sister fails, I feel responsible.
__17. I often have the feeling that my relationships with others are more important than my own accomplishments.
__18. Speaking up during a class (or a meeting) is not a problem for me.
__19. I would offer my seat in a bus to my professor (or my boss).
__20. I act the same way no matter who I am with.
__21. My happiness depends on the happiness of those around me.
__22. I value being in good health above everything.
__23. I will stay in a group if they need me, even when I am not happy with the group.
__24. I try to do what is best for me, regardless of how that might affect others.
__25. Being able to take care of myself is a primary concern for me.
__26. It is important to me to respect decisions made by the group.
__27. My personal identity, independent of others, is very important to me.
__28. It is important for me to maintain harmony within my group.
__29. I act the same way at home that I do at school (or work).
__30. I usually go along with what others want to do, even when I would rather do something different.

APPENDIX H

LIVING-UP-TO-PARENTAL EXPECTATION INVENTORY (LPEI)

Instructions: Here is a list of items. Every item asks you two questions: (A) How strong do you currently perceive this expectation from your parents? (B) To what extent do you currently perform this manner? If you perceive different expectations from your father and your mother, please make your answer based on whose opinion you value most. There are no right or wrong answers. Please answer the items as honestly as you can. **Please answer each item.**

A. Perceived Parental Expectation (PPE): How strong do you currently perceive this expectation from your parents?

Entirely	**Almost**	**Moderate**	**Mild**	**A little**	**Not at all**
100%	80%	60%	40%	20%	0%
6	5	4	3	2	1

B. Perceived Self-Performance (PSP): To what extent do you currently perform this manner?

Entirely	**Almost**	**Moderate**	**Mild**	**A little**	**Not at all**
100%	80%	60%	40%	20%	0%
6	5	4	3	2	1

PPE	**PSP**	
A. ____	B. _____	1 Parents expect me to have excellent academic performance.
A. ____	B. _____	2 Parents expect my academic performance to make them proud.
A. ____	B. _____	3 Parents expect me to study hard to get a high paying job in the future.
A. ____	B. _____	4 Parents expect me to share the financial burden of the family.
A. ____	B. _____	5 Parents expect me to study their ideal program/major.
A. ____	B. _____	6 Parents expect me to perform better than others academically.
A. ____	B. _____	7 Parents expect me to pursue their ideal careers (doctors, teachers,...)
A. ____	B. _____	8 Parents expect me to honor my parents and family's ancestors.
A. ____	B. _____	9 Parents expect me to study at their ideal university.

APPENDIX I

INTERNALIZATION OF THE MODEL MINORITY MYTH MEASURE (IM-4)

Instructions: Using the scale below, indicate the extent to which you agree or disagree with each item. Please be open and honest in your responding.

In comparison to other racial minorities (e.g., African American, Hispanics, Native Americans)…	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
1. Asian Americans generally perform better on standardized exams (i.e., SAT) because of their values in academic achievement.	O	O	O	O	O	O	O
3. Asian Americans generally perform better on standardized exams (i.e., SAT) because of their values in academic achievement.	O	O	O	O	O	O	O
4. Asian Americans are more likely to persist through tough situations.	O	O	O	O	O	O	O
6. Asian Americans are more likely to be good at math and science.	O	O	O	O	O	O	O
7. Asian Americans get better grades in school because they study harder.	O	O	O	O	O	O	O
9. Asian Americans are harder workers.	O	O	O	O	O	O	O
10. Despite experiences with	O	O	O	O	O	O	O

racism, Asian Americans are more likely to achieve academic and economic success.							
11. Asian Americans are more motivated to be successful.	O	O	O	O	O	O	O
12. Asian Americans have stronger work ethics.	O	O	O	O	O	O	O
14. Asian Americans generally have higher grade point averages in school because academic success is more important.	O	O	O	O	O	O	O

APPENDIX J

DAILY HASSLES INDEX FOR COLLEGE STRESS

COLLEGE STRESS

Following are events that may be stressful for college students. Please indicate how stressful each is for you using the 5-point scale ranging from (1) Not at all stressful to (5) Highly stressful.

	Not at all				Highly
1. Parking problems around campus	1	2	3	4	5
2. Too little time	1	2	3	4	5
3. Too little money	1	2	3	4	5
4. Getting ready in the morning	1	2	3	4	5
5. My weight	1	2	3	4	5
6. Not enough time to exercise	1	2	3	4	5
7. Conflicts with roommate	1	2	3	4	5
8. Poor quality of teaching	1	2	3	4	5
9. Constant pressure of studying	1	2	3	4	5
10. Not enough close friends	1	2	3	4	5
11. Too little intimacy	1	2	3	4	5
12. Getting to class on time	1	2	3	4	5
13. Transportation hassles	1	2	3	4	5
14. Quality of meals	1	2	3	4	5
15. Future plans	1	2	3	4	5
16. Work-related stressors	1	2	3	4	5
17. Tensions in love relationships	1	2	3	4	5
18. Conflict with family	1	2	3	4	5
19. Missing my family	1	2	3	4	5
20. No mail	1	2	3	4	5
21. Being lonely	1	2	3	4	5
22. Being unorganized	1	2	3	4	5
23. Too little sleep	1	2	3	4	5
24. Taking tests	1	2	3	4	5
25. Writing papers	1	2	3	4	5
26. Domestic responsibilities	1	2	3	4	5
27. Worrying about grades	1	2	3	4	5
28. Peer pressure to drink, smoke or do drugs	1	2	3	4	5
29. Having to repay student loans	1	2	3	4	5

APPENDIX K

THE CENTER FOR EPIDEMIOLOGICAL STUDIES DEPRESSION SCALE (CES-D)

Depression screening

Below is a list of the ways you may have felt or behaved. Please indicate how often you have felt this way during the last week by checking the appropriate space. Please only provide one answer to each question.

During the past week:	Rarely or none of the time (Less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
1. I was bothered by things that usually don't bother me.				
2. I did not feel like eating; my appetite was poor.				
3. I felt that I could not shake off the blues even with help from my family or friends.				
4. I felt I was just as good as other people.				
5. I had trouble keeping my mind on what I was doing.				
6. I felt depressed.				
7. I felt that everything I did was an effort.				
8. I felt hopeful about the future.				
9. I thought my life had been a failure.				
10. I felt fearful.				
11. My sleep was restless.				
12. I was happy.				
13. I talked less than usual.				
14. I felt lonely.				
15. People were unfriendly.				
16. I enjoyed life.				
17. I had crying spells.				
18. I felt sad.				
19. I felt that people disliked me.				
20. I could not get going.				

APPENDIX L

DEMOGRAPHIC SURVEY

Demographic Survey

Please answer the following questions:

1. What is your gender?
   - Female
   - Male
   - Other: _____

2. What ethnic group do you primarily identify as?
   - Cambodian
   - Chinese
   - Filipino
   - Hmong
   - Indian
   - Japanese
   - Korean
   - Lao
   - Taiwanese
   - Thai
   - Vietnamese
   - Other: _____

3. What is your age?
   - 18
   - 19
   - 20
   - 21
   - 22
   - 23
   - 24
   - 25

4. What year in school are you in?
   - Freshmen
   - Sophomore
   - Junior
   - Senior
   - Other: _____

5. Do you identify as an international student?
   - Yes
   - No

6. What is your generational status?

- First-generation (born outside the U.S. and came to the U.S at age 18 or older)
- 1.5-generation (born outside the U.S. and immigrated to the U.S. before age 18)
- Second-generation (U.S. born with one or both parents born outside the U.S.)
- Third-generation (U.S. born and both your parents are U.S. born)
- Other:_____

7. How many years have you been living in the United States?
   _____

8. What is your primary language? _____

9. Which best describes where you live?
   - Fraternity/sorority house
   - Off-campus housing (within 5 miles of campus)
   - Off-campus housing (more than 5 miles from campus)
   - Living at home with family
   - On-campus dormitory/apartment
   - No stable housing
   - Other:_____

10. Whom do you live with?
    - With fraternity/sorority members
    - At home with family
    - At an apartment/house with roommate(s)
    - With significant other
    - Other: _____

11. How many people do you live with, including yourself? _____

12. What country was your mother born in? _____

13. What country was your father born in? _____

14. What is your parents' annual income?
    - $0-19,999
    - $20,000-39,999
    - $40,000-59,999
    - $60,000-79,999
    - $80,000-99,999
    - $100,000 and up

15. What is your mother/guardian's highest educational level?
    - Some high school
    - High school diploma/GED
    - Some college

- Bachelor's degree
- Master's degree
- Doctoral degree
- Other: _____

16. What is your father/guardian's highest educational level?
    - Some high school
    - High school diploma/GED
    - Some college
    - Bachelor's degree
    - Master's degree
    - Doctoral degree
    - Other: _____