ABSTRACT

Title: **ASIAN CULTURAL EXPECTATIONS AND MENTAL HEALTH IN ASIAN AMERICAN ADOLESCENTS: EFFECTS OF FAMILY FUNCTIONING, CHILD NATIVITY, AND SUBGROUP ETHNICITY**

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The number of Asian immigrants is growing over the past 50 years and Asian Americans are the fastest-growing racial population in the U.S. However, few studies have examined the effects of cultural conflicts between parents and children on family functioning and adolescent mental health, especially with a national sample. Using Hwang's (2006) Acculturative Family Distancing (AFD) model and symbolic interaction theory (LaRossa & Reitzes, 1993), the purpose of this study was to examine how parental expectations of Asian cultural values influence parent-adolescent relationships, which in turn can lead to adolescent mental health problems including depression and somatic symptoms.

To conduct this study, Waves I and II data from the National Longitudinal Study of Adolescent to Adult Health (Add Health) was used. The sample included 486 Asian American adolescents with Chinese, Korean, Japanese, or Filipino backgrounds. Findings from structural equation analyses indicated partial support for AFD and for symbolic

interactionism. Results also yielded unexpected gender differences with respect to perceptions of parental academic expectations and adolescents' perceptions of their relationship with their father and mother. Academic expectations were associated with greater caring from father and closeness with father, whereas it had no significant relationship with mother-adolescent relationships. Moreover, only father-adolescent relationships mediated the relationship between expectations of Asian cultural values and adolescent somatic symptoms-only. Depression symptoms did not emerge as a significant outcome in this sample.

Given the limited literature examining Asian American adolescents from multiple ethnic backgrounds, this study explored the potential moderating role of subgroup ethnicity in these processes. It was also predicted that the proposed processes would be more pronounced among US-born youth as compared to foreign-born youth. However, this study found no moderating effects of child nativity (foreign-born vs. U.S.-born) and subgroup ethnicity (East Asian vs. Filipino) in the relationship between expectations of Asian cultural values, parent-adolescent relationships, and adolescent mental health.

The findings of this present study provide evidence that the AFD model partially works for Asian American adolescents and their families from a non-clinical sample, regardless of child nativity and subgroup ethnicity. In addition, this study demonstrates the importance of parental gender roles in the AFD model. Limitations and implications of this study are discussed.

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2015

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Acknowledgements

This dissertation was supported in part by Maryland Population Research Center Summer Research Grant. This study used data from Add Health, a program project directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill, and funded by grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Information on how to obtain the Add Health data files is available on the Add Health website (http://www.cpc.unc.edu/addhealth). No direct support was received from grant P01-HD31921 for this analysis.

I am very grateful for the many people who helped me during my years in the doctoral program and in the completion of this project. Most of all, I would like to thank Dr. Mia Smith Bynum for all the support and guidance in working with me on this project. Her insightful feedback and constant encouragement have contributed greatly to my growth as a scholar. I also wish to thank Dr. Gregory Hancock, who assisted me with the statistical analyses. Thank you for willingness to answer statistical questions.

I want to also thank the members of my committee, for their flexibility, expertise, and insight. Dr. Norman Epstein, thank you for your helpful feedback and attention to detail, which greatly improved this dissertation. Dr. Sharon Desmond, your willingness to join my committee despite the last request, your thoughtful questions, and edits kept me

on course. Dr. Jinhee Kim, thank you for your encouragement and thoughtful feedback. Dr. Derek Iwamoto, thank you for your interest and expertise on this topic.

And many thanks to Maryland Population Research Center, which facilitated my dissertation work. Thank you to Sarbartha Bandyopadhyay, who helped me work efficiently and comfortably.

Lastly, I would like to thank my family. I want to thank my parents for their constant support and love. I also thank my two sisters for their support. Finally, but most importantly, I would like to thank, my husband, Youndo Lee, who has provided constant support and encouragement.

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Chapter 1: Introduction

The United States recently has been a destination for immigrants mostly from Latin American and Asian countries (Ji, 2007). According to the United States Census, Asian Americans were the fastest-growing population in 2012. This population rose by 530,000 or 2.9% to 18.9 million between 2011 and 2012 (U.S. Census Bureau, June 13, 2013). The Asian American population is projected to more than double, from 15.9 million in 2012 to 34.4 million in 2060 (U.S. Census Bureau, December, 12, 2012). Immigration is the most significant factor in this growth, as more than 60% of this increase in the Asian American population came from international migration (U.S. Census Bureau, June 13, 2013). The demographic change implies the need for understanding Asian immigrant families.

Asian Americans are often perceived as "model minorities" because of strong familism and the emphasis on child education and achievement (Wong & Halgin, 2006). The relatively high rate of marriage and socioeconomic status compared to Blacks and Hispanics suggest a "problem free" environment for Asian American students (Kao, 1995). Asian American students have been documented to behave well in school based on measures of psychosocial adjustment such as higher GPA and lower dropout rates in high school relative to other children (Qin, Way, & Mukherjee, 2008).

Despite the positive stereotype, Asian American students report poor psychological and social adjustment (Choi, Meininger, & Roberts, 2006; Qin, 2008). According to the 2007 National Vital Statistics, suicide was the second leading cause of death for Asian Americans aged between 15 and 34 (Heron, 2011). Asian American

college students were more likely than White American students to have had suicidal thoughts and to attempt suicide (Kisch, Leino, & Silverman, 2005). It is also found that Asian American students reported a lower level of self-esteem compared to their White, American African American, and Latino American peers (Greene, Way, & Pahl, 2006; Rhee, Chang, & Rhee, 2003; Twenge & Crocker, 2002). The "model minority" stereotype may lead clinicians to ignore Asian Americans' mental health needs (Qin, 2008). Thus, it is imperative to examine risk and protective factors that impact Asian American adolescents' mental health.

A growing body of research demonstrates that cultural conflicts between parents and children play a major role in immigrant adolescents' mental health (e.g., Costigan & Dokis, 2006; Kim, Chen, Wang, Shen & Orozco-Lapray, 2013; Weaver & Kim, 2008). Because many immigrant children tend to be more acculturated to the larger society than their parents, their parents' closer orientation toward the ethnic culture could lead to intergenerational disagreement and difficulty in immigrant families, resulting in adolescents' poor mental health. The present study used Hwang's (2006) Acculturative Family Distancing (AFD) model to examine the impact of tensions between the family's culture of origin and the host culture on family dynamics in these families, and also how the conflict that results from those tensions negatively impacts the mental health of the youth in those families (see Figure 1). AFD is defined as "the distancing that occurs between parents and youths as a result of communication difficulties and cultural value incongruence" (Hwang, 2010, pp. 656-657).

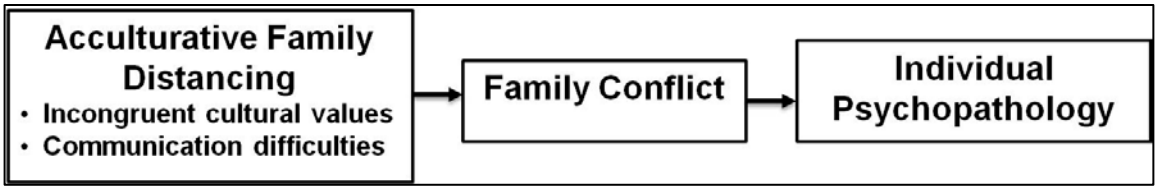

Figure 1. AFD Model (Hwang, 2006)

As indicated in Figure 1, the AFD cultural value incongruence domain measures the view of parents and child regarding in discrepancies cultural values and beliefs along the areas that can lead to conflict. Value discrepancies can occur two domains: attitudes reflecting the ethnic culture and the host culture. Hwang (2006) posits that cultural gaps in ethnic culture and host culture between parents and youth cause family conflict. In addition, AFD is affected by parent-child differences in linguistic fluency. Specifically, Hwang (2006) posits that children may not have or may lose (1) mastery of their families' native language the longer the family lives in the host culture and (2) the meaning of nonverbal communication. Parents and children may have misunderstandings about acceptable behavior over time. All of these factors can cause communication problems to occur. Thus, quite literally, parents and children can no longer communicate effectively with each other due to absence or loss of a shared language. Consequently, family conflict ensues over misunderstandings that occur during everyday family interactions about curfew, homework, childcare and other family business. Over time, parents and children no longer share a common set of cultural reference points to rely upon to understand in addressing disagreements common to all families. This can lead to individual and family dysfunction.

Several factors can impact whether this acculturative gap occurs and results in dysfunction. The first is the presence of a sizable number of families from the native country in a family's community, which can provide an ecological context where the family's ethnic cultural norms, including language, are expressed, practiced and reinforced. Communities in the U.S. vary in the extent to which there are large concentrations of Asian Americans of various nationalities, meaning that families with small numbers of immigrants from a specific country are at greater risk for AFD.

Also, relevant to the development of incongruent cultural values between parents and children are the child's nativity and age at arrival in the host country, and the child's mastery and retention of the family's native language. Children who are born in the U.S. or who immigrate at young ages will primarily have their family as a reference point for learning about and mastering their culture of origin. This sets the stage for communication problems as children age and acclimate to the host culture. Lastly, Hwang (2006) argues that parents' education level is relevant because more educated parents may interact with the institutions in the host culture more often, resulting in more similar paces of acculturation between parents and children.

Hwang (2006) also posits that potential differences in acculturation pace between parents and children cause problems in communication and a gap or incongruence in the cultural values held by parents and children. This gap in pacing also encompasses differences in norms and expectations between parents and children about how each should behave, the meaning of nonverbal communication, misunderstandings about acceptable behavior, and also communication problems that result from the reality that

children may not have or may lose mastery of their families' native language the longer the family lives in the host culture.

Several empirical studies have found family conflict mediates the relationship between cultural conflicts and child mental health (Hwang & Wood, 2009; Hwang, Wood, & Fujimoto, 2010; Pina-Watson, Castillo, Ojeda, & Rodriguez, 2013). However, much of the past research on Asian American adolescents has focused on the effect of family conflict on their mental health in terms of examining the effect of intergenerational disagreement, neglecting the protective role of family functioning. Moreover, most studies on Asian American youth focused on East Asian populations such as Chinese, Korean, and Vietnamese (Jung, 2013) with small samples (Dinh & Nguyen, 2006; Dyson, Qi, & Wang, 2012; Phinney, Ong, & Madden, 2000; Wu & Chao, 2011). Lastly, few studies examined the moderating effect of generational status and subgroup ethnicity, although immigrant children have different cultural values and life styles by generational status and their culture of origin (Fuligni, 1998; Juang & Cookson, 2009; Phinney et al., 2000; Wu & Chao, 2011).

In order to address the existing gaps in the literature on Asian American adolescents, the present study used Waves I and II of the data collected for the National Longitudinal Study of Adolescent to Adult Health (Add Health). The Add Health was constructed to examine health status, family relationships, neighborhood, peer networks, employment experience, and romantic relationships of adolescents over time. Using the Add Health data provides a nationally representative sample of Asian American adolescents. Grounded in the AFD model and symbolic interaction theory, this study

used structural equation modeling to examine the mediating effects of parent-adolescent relationships (e.g., closeness, caring, and conflict) in the relationship between Asian cultural expectations and adolescent mental health problems. Child nativity and subgroup ethnicity were also examined as potential moderators of the previously mentioned relations.

Chapter 2: Theoretical Frameworks and Literature Review

The current study utilized both Hwang's (2006) AFD model and symbolic interaction theory as micro-and macro-analytic frameworks to guide the research questions and conceptual framework that undergird this study. The present study primarily relied upon Hwang's (2006) AFD model, which explains the influence of cultural disagreements in the family on family conflict and adolescent mental health problems. As suggested by the AFD model, this study examined the mediating effects of family functioning on the relationship between parental expectations of Asian cultural values and adolescent mental health problems. In addition, this study also used the symbolic interaction perspective (LaRossa & Reitzes, 1993) to provide a foundation for understanding Asian American adolescents' role expectations and negotiation as well as cultural contexts in which they learn roles and expectations for social roles. Based on the theory, this study examined the effects of perceived expectations of Asian cultural values on their parent-adolescent relationships and mental health and how the relationships differ by cultural contexts such as adolescent nativity (foreign-born vs. U.S-born) and subgroup ethnicity (East Asian vs. Filipino).

A Review of Theoretical Frameworks

Acculturative Family Distancing and Intergenerational Conflict Models for Immigrant Families

Though successful negotiation of intergenerational conflict is critical to understanding adolescents in immigrant families, few theoretical frameworks have been developed fully for understanding intergenerational conflicts in Asian immigrant families.

Several researchers have proposed intergenerational conflict models with different constructs to explain family conflict caused by cultural differences between immigrant parents and children. For example, *intergenerational/acculturation difference* (Szapocznik, Scopetta, Kurtines, & Arnald, 1978), *clash between generations* (Sluzki, 1979), and *acculturative dissonance* (Portes & Rumbaut, 1996) are constructs that have been proposed to address family conflict between immigrant parents and more acculturated children. These constructs have the notion that the intergenerational conflict leads to poor child adjustment.

Based on clinical cases among Asian American immigrant families, Hwang (2006) proposed the term *acculturative family distancing* (AFD) to describe "problematic distancing that occurs between immigrant parents and children that is a consequence of differences in acculturative processes" (p. 398). Originally conceived as a clinical model, he suggested that AFD increases family conflict, which in turn causes individual and family dysfunction. There are two dimensions of AFD: *incongruent cultural values* and *communication difficulties*. Value discrepancies can occur between parents and children when children are more exposed to the host culture and parents place more emphasis on their culture of origin. Different cultural value systems can cause conflict between parents and children because they have different expectations and norms regarding behaviors (e.g., parenting and appropriate behavior) and thus, interpret each other's behaviors differently based on differing sets of cultural norms. Moreover, different preferred languages and communication styles (e.g., eye contact and vocal cues) between parents and children can deter effective communication, resulting in

misunderstanding and conflict. He argues that these two distancing processes increase family conflict and psychological problems.

The AFD model also proposed that ecological factors influence AFD across the life span for both parents and youth. For example, children from immigrant families acculturate to the mainstream culture and acquire the culture of the families' origin at different pace depending on ethnic density of neighborhood, children's nativity, and age at immigration. Consequently, AFD and conflicts between parents and children can be qualitatively different for families that reflect different combinations of these variables.

Since its introduction, AFD has gained growing visibility in research on families and human development (e.g., Hwang & Wood, 2009; Pina-Watson et al., 2013). This model has grown in currency in terms of its use as a framework for addressing the role of intergenerational cultural differences on adolescent adjustment in Asian immigrant families. According to Web of Science search completed for published studies published studies prior to March 19, 2015, 40 peer reviewed studies cited the AFD model. Among them 15 studies used this model as the main theoretical framework. For example, a longitudinal study conducted by Juang, Syed, and Cookston (2012) examined the effect of parent-child conflict in Asian values on Chinese American adolescent mental health. The results revealed that higher initial levels of parent-adolescent cultural conflict were associated with higher initial anxiety and somatic symptoms, and faster increases over time in conflict were related to faster increases in anxiety and somatic symptoms. In addition to internalizing problems, this model was utilized to examine a risk factor for adolescent delinquency. In a sample of 201 Chinese immigrant families,

Wang, Kim, Anderson, Chen, and Yan (2012) found that differences in Chinese and American orientations between parent-child dyads were associated with more adolescent delinquency via adolescent perceptions of less parental knowledge about adolescents' daily activities.

The AFD model has been a useful framework for understanding family conflicts not only in Asian immigrant families but also in Latino immigrant families. For example, Hwang and Wood (2009) investigated the effect of AFD on adolescent psychological adjustment in a sample of 107 Asian American and 79 Latino American college students. Family conflict mediated the relationship between AFD (e.g., poor communication and cultural value differences) and youth depression. One study, conducted by Pina-Watson et al. (2013) investigated the role of AFD among 170 female Mexican American students. Findings revealed that a positive attitude toward traditional gender role beliefs (marianismo beliefs) was related to lower parental conflict, which in turn led to fewer depressive symptoms.

Application of AFD model in the present study. Hwang's (2006) AFD model suggested that AFD consists of incongruent values and a breakdown in communication cause greater family conflict and poor adolescent adjustment. The present study is a partial test of the AFD model. Adolescent perceptions of parental endorsement of traditional Asian values were assessed rather than value congruence between parents and children. This study examined the effect of these ethnic cultural values on family functioning and adolescent adjustment.

In addition, the model proposed that family conflict mediates the relationship between AFD and youth adjustment. Since many Asian subcultures are heavily influenced by Confucianism with its emphasis on family integrity (Bernstein, 2007), family cohesion has been known as a protective factor among Asian Americans (Kuroki & Tilley, 2012; Leuck & Willson, 2010; Sangalang & Gee, 2012; Walton & Takeuchi, 2009). For example, Choi, Michael, and Harachi (2008) found that parent-child bonding was related to fewer problem behaviors among Cambodian American and Vietnamese American youth. Thus, the present study examined the mediating effects of parent-adolescent conflict, closeness, and caring in the relationship between expectations of traditional Asian cultural values and adolescent adjustment.

Symbolic Interaction Theory and Asian American Family Functioning

Symbolic interaction theory assumes that individuals act following social norms and actively define the specific meanings of self, others, and situations (LaRossa & Reitzes, 1993). Individuals learn social norms and values through socialization, or through ongoing sustained daily interactions with their families and other institutions in their communities. The family has been recognized as an important context for socialization (Burgess, 1926; Waller, 1938), in which individuals learn roles and expectations for social positions. According to Turner (1962), there are two role behaviors within symbolic interaction theory: role taking and role making. Individuals not only align their role behaviors with the role meanings held by others; they also create and modify roles. By bargaining and compromising, individuals negotiate roles constrained by societal norms and values. When the actor does not have sufficient

resources to enact a role or has contradicting expectations of the role, he or she experiences role strain. Burr, Leigh, Day, and Constantine (1979) defined role strain as the "felt stress generated when a person has difficulty complying with expectations of a role" (p. 57). This can happen in families managing conflicting cultural expectations about family members' roles.

Symbolic interaction theorists emphasize the impact of context on behavior. They assume that individuals and small groups are influenced by larger cultural and societal processes (LaRossa & Reitzes, 1993). Expectations and meaning of roles differ by societal context, and thus, negotiations of a role are contextually different due to differences in social values. For example, a situation where children intend to spend more individual leisure time can be acceptable in a society where children's autonomy is encouraged. However, such a situation can be contextually different from one in which family obligation is expected of children. In such a case, children's verbal wishes for autonomy and autonomy seeking behaviors can be considered as a confrontation to parental authority.

Application of symbolic interaction theory in the present study. The symbolic interaction perspective informs the conceptual model for this study. Immigrant families often live in two different cultural contexts: the host culture and the culture of their ethnic origin. Immigrant parents may have difficulties in learning new languages and culture, and thus retain their ethnic culture to a large degree (Telzer, 2010). In contrast, children are more likely to have extensive contact with the host culture through school and peers from diverse ethnic backgrounds (Birman, 2006). As developing beings, they can adopt

the new language and culture more easily than their parents. The conflicts in cultural values between the ethnic culture and the host culture and the associated gaps in family socialization norms and expectations often results in immigrant children experiencing a more complex and extensive set of role expectations to negotiate. As a result, they make sense of how to take on their roles as children and how they construct those roles (Kwak, 2003).

It is especially true that Asian American adolescents from immigrant families must negotiate conflicting norms of parenting from the host culture and their ethnic culture. As a prime example, while White American parents often emphasize emotional expressiveness and closeness from a cultural standpoint, Asian immigrant parents tend to discourage children from showing emotions (Kim, & Wong, 2002; Triandis, 1989). By observing American family relationships of their friends or parents portrayed in the U.S. media, the children realize the difference between their own family and American families (Pyke, 2000; Qin, 2008). A qualitative study of Korean American and Vietnamese American college students found that they perceived their own families as overly strict, emotionally distant, and deficient in comparing their own family experiences with White American families (Pyke, 2000). The study suggested that immigrant children often have conflicting perspectives of traditions of culturally based family norms of their culture of origin and the mainstream culture.

Immigrant children's struggles to negotiate family-based role expectations of two cultures can likely be explained by role strain. For example, Asian Indian children from immigrant families in the U.S. experience tension between their ethnic and host cultures'

value systems in areas such as gender role expectations (Varghese & Jenkins, 2009). Asian Indian women are expected to remain subordinate to their husbands and elders in the family. However, White Americans, and Westerners generally, often emphasize egalitarian family relationships. In an attempt to negotiate pressures from both cultures, children experience feelings of depression (Inman, Constantine, & Ladany, 1999). The symbolic interaction perspective assumes that individuals experience role strain when there are conflicting normative expectations from two cultures (White & Klein, 2008). Immigrant children often learn their ethnic culture from parents as well as acculturate into a larger society by interacting with peers from school. The two cultures can have differing emphases on autonomy and embeddedness in the family (e. g, family cohesion and obligation) (Schwartz, 1992, 1994), resulting in role strain and confusion. For example, one study showed that Chinese immigrant parents in Canada put more emphasis on parental control and academic achievement and had later age expectations for autonomy than Canadian parents (Costigan & Dokis, 2006). However, their children were more acculturated to the American culture and thus, sought more behavioral autonomy. The disparities between immigrant Chinese parents' expectations and the children's own expectations are associated with feelings of depression (Costigan & Dokis, 2006) and consequently can lead to negative parent-child relationships (Kwak, 2003; Phinney & Ong, 2002).

As noted, symbolic interaction theory assumes that the process of role negotiation depends on resources to enact a role or to contradict the role. For immigrant children, knowledge of norms and expectations of their culture of origin can differ by their

generational status. Whether they are born in the U.S. or their age at immigration shape their interaction with the host culture and their familiarity and comfort with ethnic culture. For example, language and cultural proficiency (Hwang, 2006; Juang & Cookston, 2009) and depth of social networks (Pearce & Lin, 2005; Ryabov, 2013; Tillman, Guo, & Harris, 2006) largely depend on their generational status. As different levels of involvement in and familiarity with their ethnic cultural values vary, generational status is related to the quality of parent-child relationships. Phinney et al. (2000) showed that second generation U.S.-born children with Armenian, Vietnamese, or Mexican backgrounds experienced more cultural value disagreements with their parents regarding family obligations with than first-generation foreign-born children did.

Another cultural context that influences children from immigrant families is their specific ethnic culture. Although East Asian countries share similar cultural backgrounds, studies increasingly have indicated that Asian subcultures have different parenting styles and family values (Crockett, Veed, & Russell, 2010; Fuligni, 1998; Tseng & Fuligni, 2010). For example, Chinese families tend to place more value on parental authority than Filipino families. This indicates that expectations of Asian culture and parent-child relationships might differ by ethnic subgroup. In summary, the symbolic interaction theory addresses the cultural contexts that can influence immigrant children and how the contexts such as role expectations affect the well-being of children and family relationships.

To my knowledge, symbolic interaction theory has not been used as a theoretical framework for understanding family dynamics in Asian American families. However,

role expectations for American adolescents do conflict with those in Asian American families (Costigan & Dokis, 2006; Kang, Okazaki, Abelmann, & Kim-Prieto, 2010). The negotiation process that immigrant children experience between two cultures might be used to explain how Asian American adolescents navigate these two worlds. The present study tested an aspect of the negotiation process by examining the effect of adolescents' behavioral and perceived expectations of Asian cultural values from parents (e.g., collectivism, restricted autonomy, and academic expectations) on their parent-adolescent relationships and mental health problems such as depression and somatic symptoms. The following sections will include a demographic overview of Asian immigrant families and a summary of issues that they face in general, and then review research on key study variables that may influence the mental health of Asian American adolescents: a) Asian cultural values; b) family conflict; c) family cohesion; d) generational status; e) subgroup ethnicity.

Literature Review

Asian Americans and Their Families

Before reviewing previous studies examining the relationships among key variables of this study, this section covers Asian American populations, including a brief review of the history of Asian American immigration and its composition and the development of Asian American studies. This brief review will provide a relevant context in which the current study should be considered. The definitions of key terms are provided.

Definition of Key Terms

Asian American. The Office of Management and Budget (OMB) defines "Asian"

as a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam (Hoeffel, Rastogi, Kim, & Shahid, 2012). For the purpose of this study, the term "Asian American" refers to an individual of Asian origin residing in the United States to differentiate him or her from an Asian who is living in an Asian country.

Immigrant. Immigrant refers to a person who is a foreign born permanent resident regardless of legal status (U.S. Census Bureau, 2013; Zhou, 1997).

Immigrant family. An immigrant family is defined as a family in which at least one of the parents was born outside of the country of residence (Crosnoe & Fuligni, 2012).

Immigrant child (student). Immigrant child (student) is defined as an individual for whom at least one parent was born outside of the country of residence (Greenman & Xie, 2008).

Nativity. Nativity is defined using the U.S Census Bureau's (2013) definition, which refers to whether a person is native or foreign-born. The term **"native"** or **"U.S.-born"** refers to anyone born in the United States, Puerto Rico, a U.S. Island Area (American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, or the U.S. Virgin Islands), or abroad of a U.S. citizen parent or parents (U.S Census Bureau, 2013).

Foreign-born. Foreign-born refers to anyone who is not a U.S. citizen at birth but is currently residing in the U.S. (U.S. Census Bureau, 2013).

Generational status. Generational status is defined as the place of birth of an

individual or an individual's parents (Ryabov, 2013; U.S. Bureau, 2013). The first generation refers to those who are foreign born. The second generation refers to those with at least one foreign-born parent. The third-or-higher generation includes those with two U.S. native parents. The term "generational status" is used more generally indicating the family's immigrant history compared to the child's nativity.

Ethnicity. Ethnicity refers to "shared culture and traditions that are distinctive, maintained between generations, and lead to a sense of identity and group and as common language or religious tradition" (Dein, 2006, p. 69).

Ethnic culture. For the purpose of this study, ethnic culture refers to an individual's culture associated with an ethnic group. The terms **"ethnic culture"** and **"culture of origin"** are used interchangeably in this study.

Host culture. Host culture is defined as the dominant culture in the country of destination (Scott & Marshall, 2009). Scott and Marshall stated that the term "host culture" refers to "values, language, and ways of behaving which are imposed by dominant group in a society" (p. 190). In the present study, it refers to mainstream American culture (Doran & Littrell, 2012). The terms **"host culture"** and **"mainstream culture"** are used interchangeably in this study.

A brief overview of the immigrant experience of Asian Americans. Asians first immigrated to the U.S. in sizable numbers as low-skilled workers in mid-19th century experienced racial discrimination and hostility (Ng, 2010). Regulations such as Chinese Exclusion Act of 1882 and the Immigration Act of 1917 initially prohibited immigration of Asians to the U.S. Since 1960, the situation has significantly changed. The Immigration and Nationality Act of 1965 allowed large-scale immigration from Asia.

Over the decades, this second wave of immigrants has had higher levels of education and income compared to the first wave. Today, many Asian immigrants often go into high-paying fields such as science, engineering, medicine, and finance (The Pew Research Center, 2013).

Because of the social exclusion policy, Asian Americans have a short history of immigration relative to other immigrants in the U.S., particularly European immigrants (Pyke, 2000). Most Asian Americans are first- or second-generation. With the exception of the Japanese, people in the U.S. from all other Asian countries of origin disproportionately consist of first-generation immigrants (64%). Another 27% are second generation (U.S.-born of foreign-born parents). Less than 10% belong to the third-plus generation (U.S.-born of U.S.-born parents) (Zhou & Xiong, 2005).

To understand Asian American immigration also means understanding the diversity of subgroups we label as Asian American in the U.S. The six largest Asian American subgroups are Chinese Americans (20%), %), Indian Americans (20%), Filipino Americans (18Vietnamese Americans (11%), Korean Americans (10%) and Japanese Americans (5%) (Hoeffel et al., 2012). These groups comprise at least 87% of the total Asian population in the U.S. These subgroups differ in social and cultural characteristics in key ways, including socio-economic status and religion. For example, Indian Americans reported the highest level of income among the other subgroups and seven-in-ten Indian-American adults ages 25 and older have a college degree, compared with about half of Americans of Korean, Chinese, Filipino and Japanese ancestry, and about a quarter of Vietnamese Americans (The Pew Research Center, 2013). Regarding

religious affiliation, according to the Pew Research survey about half of Chinese are unaffiliated, most Filipinos are Catholic, about half of Indians are Hindu, most Koreans are Protestant and a plurality of Vietnamese are Buddhist. Among Japanese Americans, no one religious group is dominant.

Growth in behavioral research on Asian Americans. In aligning with the history of Asian American immigration, the field of Asian American studies emerged in the late 1960s and early 1970s as a part of social movement against the marginalization of Asians in the U.S. The Asian American Psychological Association (AAPA) and the Association for Asian American Studies (AAAS) were founded during the 1970s. Both organizations involved challenging racial stereotypes by addressing the diverse experience of Asian Americans and working with and for Asian American communities to address historical experiences of social marginalization (Chun, 2014).

A review of Asian American psychological studies indicated that social process and social issues were the most heavily researched areas between 1967 and 1991 (Leong, 1995). Recent reviews showed that health and health-related behaviors were the most frequent topics (e.g., substance use, health care practices and beliefs, cancer screening, dietary habits, obesity) (Juan, Lee, & Bates, 2012; Okazaki, Kassem, & Tan, 2011; Yeh, Yoo, & Lizarraga, 2013). Only a total of 18 empirical articles among 248 articles in 2012 investigated families. Many of the articles examined parent-child relationships among immigrant families. However, most of them focused on young adults in investigating parent-child cohesion and conflict (Chang & Greenberger, 2012; Leu, Schroth, Obradovic, & Cruz, 2012; Lou, Lalonde, & Giguère, 2012; Naumann,

Guillaume, & Funder, 2012; Wong, Li, & Uhm, 2012; Wong, Wong, & Obeng, 2012. Yang, Haydon, & Miller, 2013). Few studies examined the role of parent-child relationships in Asian American adolescents' mental health (Choi, Kim, Park, & Dancy, 2012; Qin, Rak, Rana, & Donnellan, 2012).

Asian Cultural Values: A Brief Review as Applied to Families

As noted earlier, the term "Asian American" covers tremendous diversity with regard to culture, language, and socioeconomic status (Ling & Austin, 2010). The major groups are: 1) East Asian (e.g., Chinese, Korean, and Japanese); 2) Southeast Asian (e.g., Vietnamese and Filipino); 3) South Asian (e.g., Asian Indians) (Ji, 2007). These groups differ in customs and religions. For example, Asian Indian culture is based on Hinduism and Islam whereas many East Asian cultures are influenced by Confucianism.

Children from immigrant families can experience value conflicts between the main stream culture and their culture of origin. All of these value systems have distinct contrasts to those of Western European families (see Table 1), and thus it can lead to stress.

Asian subcultures are often described as collectivist cultures. According to Triandis (1989), collectivists subordinate their personal goals to the collective goals whereas individualists give priority to personal goals over the goals of collectives. Collectivists tend to be interdependent with group members and share resources with them while individualists are more likely to be independent. The different cultural

Table 1

Differences between Western European Families and Asian Families

	Western European Families	Asian Families
Family relationship[a]	Independent (individualism)	Interdependent (collectivism)
	Egalitarian	Hierarchical
Parental affect[a]	Expressive and affectionate	Discouraged from showing emotions
Parental discipline[a]	Autonomy	Control (training children)
Parenting[b]	The primary concerns of parents are developing children's self-reliance, independence, and creativity.	The primary concerns of parents are children's obedience, reliability, and proper behavior.

Note. a. Adapted from "Assessing Asian and Asian American parenting: A review of the literature," by S. Y. Kim, & V. Y. Wong, 2002, In K. S. Kurasaki, S. Okazaki, and S. Sue (Eds.), *Asian American mental health* (pp. 185-201), New York, NY: Plenum.
b. Adapted from "The self and social behavior in differing cultural contexts," by H. C. Triandis, 1989, *Psychological Review*, *96*(3), pp. 506-510.

orientations are more likely to be associated with different parenting styles. Parents in collectivist cultures stress obedience, reliability, and proper behavior. In contrast, parents in individualistic cultures stress self-reliance, independence, and creativity. Thus, children from collectivistic oriented societies are typically expected to sacrifice individual needs for family needs. However, the pursuit of individual needs is more

acceptable in an individualistic culture such as the one found in the U.S. In Western culture, children engaging in behaviors beneficial for themselves may not be blamed or viewed negatively by the family as would those from families with a collectivistic society (Hwang, 2006).

Many East Asian subcultures reflect an emphasis on collectivism through the influence of Confucianism. Confucianism is an organizing principle of family life for many Asian American families that emphasizes "benevolence, authority, and obedience" (Park & Cho, 1995, p. 124). Compared to egalitarian family relationships emphasized in Western European families, family relationships in many Asian subcultures are organized vertically. The family hierarchy follows the status of one's generation and age (Kim & Wong, 2002). Those who are older in generation and in age are considered superior to those younger in generation and age. Males are considered superior to females. Based on the familial hierarchy, Asian parents emphasize training children to be obedient and behave properly. They practice high control over their children and are discouraged from showing their emotions (Kim & Wong, 2002). In contrast, Western European parents value autonomy in child-rearing and place less value on conformity to authority (Feldman & Rosenthal, 1991). They tend to show physical affection, praise their children, and encourage the children to experience their own ideas and wishes.

Based on the AFD model, the current study focused on three Asian cultural values: collectivism, restricted autonomy, and academic expectations. The following section reviews the literature on each of the three Asian traditional cultural values that

may predict family relationships and child mental health among Asian American adolescents.

Emphasis on collectivism/family obligation. Based on collectivism, a cultural value that prioritizes goals of a group than personal goals, family obligation is central to Asian cultures (Kagitcibasi, 2005; Wang, Kviz, & Miller, 2012). It has been argued that conforming to family norms has a key role in the development of Asian American adolescents (Fuligni, 1998; Tsai-Chae & Nagata, 2008). Children learn the importance of fulfilling family obligations through their daily interactions with their families. This involves a set of behaviors and attitudes regarding the support and respect that children provide to their family (Juang & Cookston, 2009). Asian American children are often expected to spend time completing family duties such as taking care of younger siblings while the parents are busy with their work rather than on personal activities (e.g., spending time with peers, participating in extra curricula activities) (Bankson & Hidalgo, 2006). In return, children receive their parents' loyalty, sacrifice, and devotion.

Consistent with these notions, research has found that Asian American adolescents have greater expectations regarding their duty to assist and support their families than those with European American backgrounds (Fuligni, Tseng, & Lam, 1999). They also tend to spend more time assisting their families than do adolescents from European American backgrounds (Hardway & Fuligni, 2006). Providing assistance to the family can be stressful because it can conflict with their growing autonomy. Several studies have indicated that the burdens of household responsibility were found to be associated with adjustment problems such as lower self-concept

(Godsall, Jurkovic, Emshoff, Anderson, & Stanwyck, 2004) and greater somatic symptoms (Johnston, 1990). Based on the previous studies, in the present study it was hypothesized that the level of maternal emphasis on collectivism would be negatively associated with family functioning (increased parent-adolescent conflict and lower parent-adolescent closeness/caring) and greater mental health problems.

Parental authority, child obedience, restricted autonomy in Asian American families. As noted earlier, Asian American family relationships are organized vertically. Family members who hold power in the family hierarchy (e.g., husbands over wives; parents over children) expect respect, deference, and obedience. The emphasis on parental authority is displayed as parental control in parenting practices in several studies conducted with Asian American samples (Chao. 1994; Kawamura, Frost, & Harmatz, 2002; Pong, Hao, & Gardener, 2005; Park, Kim, Chiang, & Ju, 2010). Based on the hierarchical relationships between parents and children, parents are expected to guide and protect their children in order to create success in their lives (Chao & Kanatsu, 2008). This can be manifested in lower levels of autonomy granting relative to other families in the U.S.

Several measures have been developed to assess parenting practices unique to Asian Americans. For example, in a classic study, Chao (1994) introduced the term *guan* parenting in describing Chinese American parenting practices to the American research literature on parenting. *Guan* parenting includes directive control and close monitoring of child behaviors while maintaining close parent-child relationships. Choi and colleagues (Choi, Kim, Kim, & Pekelnicky, 2012) developed measures of the Korean

traditional family socialization, *ga-jung-kyo-yuk* (가정교육). The core values of *ga-jung-kyo-yuk* include family hierarchy, showing respect for and the mastery of appropriate etiquette with parents and elders, family obligations and ties, and an emphasis on child education. *Ga-jung-kyo-yuk* also governs strict child-rearing practices such as having the child raise his or her arms for a prolonged time as punishment.

The strict parenting style that is prevalent in Asian Americans, allows children to have a minimal amount of freedom and autonomy (Kim & Wong, 2002). Although moderate behavioral control remains beneficial for adolescent development specifically, control that restricts adolescents' sense of psychological autonomy is associated with increased internalizing symptoms (Russell, Crokett, & Chao, 2010). In addition, different expectations of parental control between parents and children are associated with greater family conflict in Asian American families (Juang, Syed, & Takagi, 2007; Tardif & Geva, 2006). Based on the previous studies, in the present study it was expected that parental restriction of children's autonomy would lead to greater parent-adolescent conflict and lower parent-adolescent closeness/caring and thus affect mental health problems among Asian American adolescents.

Academic achievement, family honor, and academic expectations in Asian American families. Respect and honor for the family is often expressed in an indirect manner such as through academic pursuit (Fuligni, et al., 1999). Given the high emphasis on academic achievement in many Asian cultures (Fuligni, 2001; The Pew Research Center, 2013), children are expected to do well in school to bring honor to the family (Chao, 1995; Fuligni et al. 1999; Fuligni, 2001; Fuligni & Zhang, 2004). Like

many other children from immigrant families, Asian adolescents might view academic achievement as a way to help their families succeed and thus, achieve the "American Dream" (Fuligni et al., 1999). Moreover, Asian American parents may perceive education as an "effective channel of upward mobility for their children" (Goyotte & Xie, 1999, p. 25) and thus, value high academic achievement.

Despite the benefits of high achievement, parental emphasis on academic achievement can be stressful for Asian American adolescents. They reported higher parental expectations for success (Castro & Rice, 2003; Goyote & Xie, 1999) and a higher level of concerns about meeting high parental expectations compared with other ethnic groups (Peng & Wright, 1994). Research has found that academic achievement is an important source of parent-child conflict in Asian American families (Castro & Rice, 2003; Kang et al., 2010; Tsai-Chae & Nagata, 2008). In addition, academic pressure from parents is associated with psychological distress among Asian American students (Kang et al., 2010; Lee, Juon, Martinez, Hsu, Robinson, Bawa, & Ma, 2009). Based on the previous studies, it was hypothesized that parental academic expectations would be associated with negative family functioning (greater parent-adolescent conflict and lower parent-adolescent closeness/caring) and greater mental health problems.

Family Relationships in Asian Immigrant Families: Impact of Different Cultural Expectations between Parents and Children

The cultural orientations and acculturation process of immigrant parents and their children may differ. For example, immigrant parents often have more difficulty learning the new culture and new language while retaining their ethnic culture (Telzer,

2010). However, their children may adopt the values and lifestyles of the new culture more easily than their parents by interacting with peers from school. It is often suggested that "immigrant parents and their children live in two separate cultural worlds" (Telzer, 2010, p. 315), known as the acculturation gap. Asian American adolescents, the focus of the present study, might experience the intergenerational acculturation gap. Previous research has demonstrated that they experience distress that results from the conflicting messages between their families' traditional Asian culture and American culture (Huang & Ying, 1998; Pyke, 2000; Qin, 2008; Qin et al.,, 2008). For instance, nearly 50% of Hmong American adolescents reported stress in their struggles with household duties and academic success at school because they felt the pressure from their parents and their family about the roles (Tran, Lee, & Khoi, 1996).

As Hwang (2006)'s AFD model suggested, the acculturation gap involving cultural incongruence and ineffective communication lead to negative parent-child relationships (see Figure 2). Because of different cultural orientations between parents and children, they often have different norms and expectations regarding child behaviors. The disparities can make it difficult for them to understand each other, resulting in increased family conflict and decreased family cohesion.

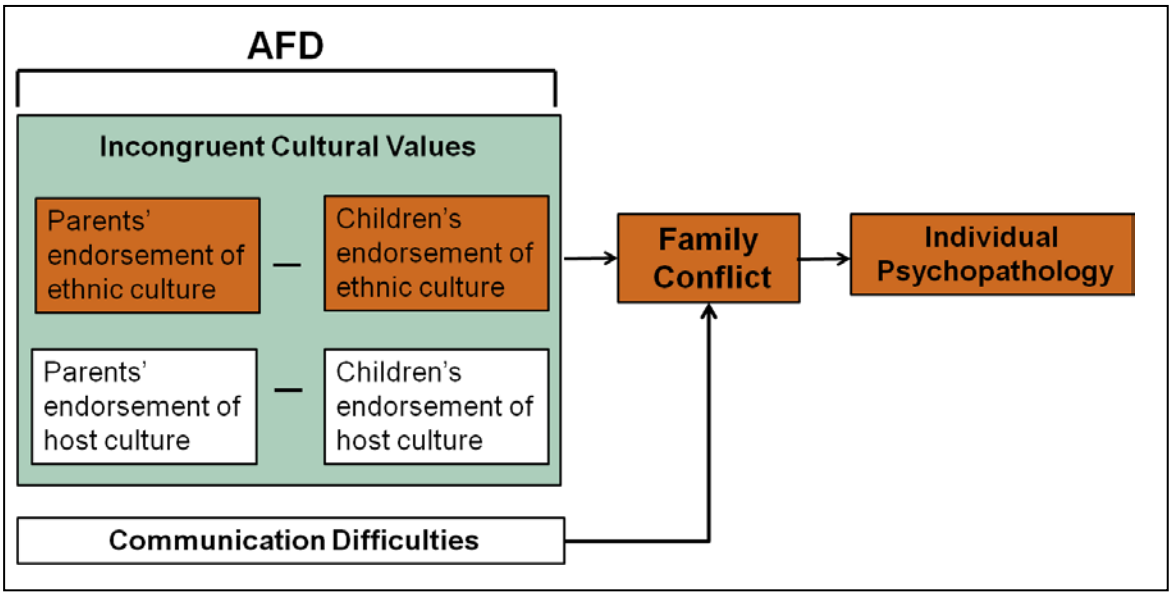

Figure 2. AFD Model

Moreover, according to symbolic interaction theory, role expectations from different societal norms are often conflicting, and the negotiation process causes role strain. This study included adolescents' perceived expectations of Asian cultural values to examine a part of role negotiation process. The negotiation process depends on the contexts where they learn roles and expectations for social roles. For children from immigrant families, their generational status can shape the negotiation process since it plays a role in their familiarity with their culture of origin (Hwang, 2006; Juang & Cookston, 2009; Ryabov, 2013; Tillman et al., 2006). The culture of their families' origin also contextualizes their negotiation process because they have different cultural values and expectations regarding social roles and appropriate behavior (Crockett et al., 2010; Fuligni, 1998; Tseng & Fuligni, 2010).

Based on the two perspectives, this study examined the effect of perceived expectations of adherence to Asian cultures (e.g., maternal emphasis on collectivism, parental emphasis on restricted autonomy, and parental academic expectations) on adolescent mental health and how family functioning mediates the relationships. Specifically, this study included closeness with mother/father, caring from mother/father, and conflict mother/father as measures of parent-adolescent relationships. Also, this study examined depression symptoms and somatic symptoms for adolescent mental health problems. Moreover, this study tested how the relationships are different by child nativity (foreign-born vs. U.S.-born) and subgroup ethnicity (East Asian vs. Filipino) (see Figure 3).

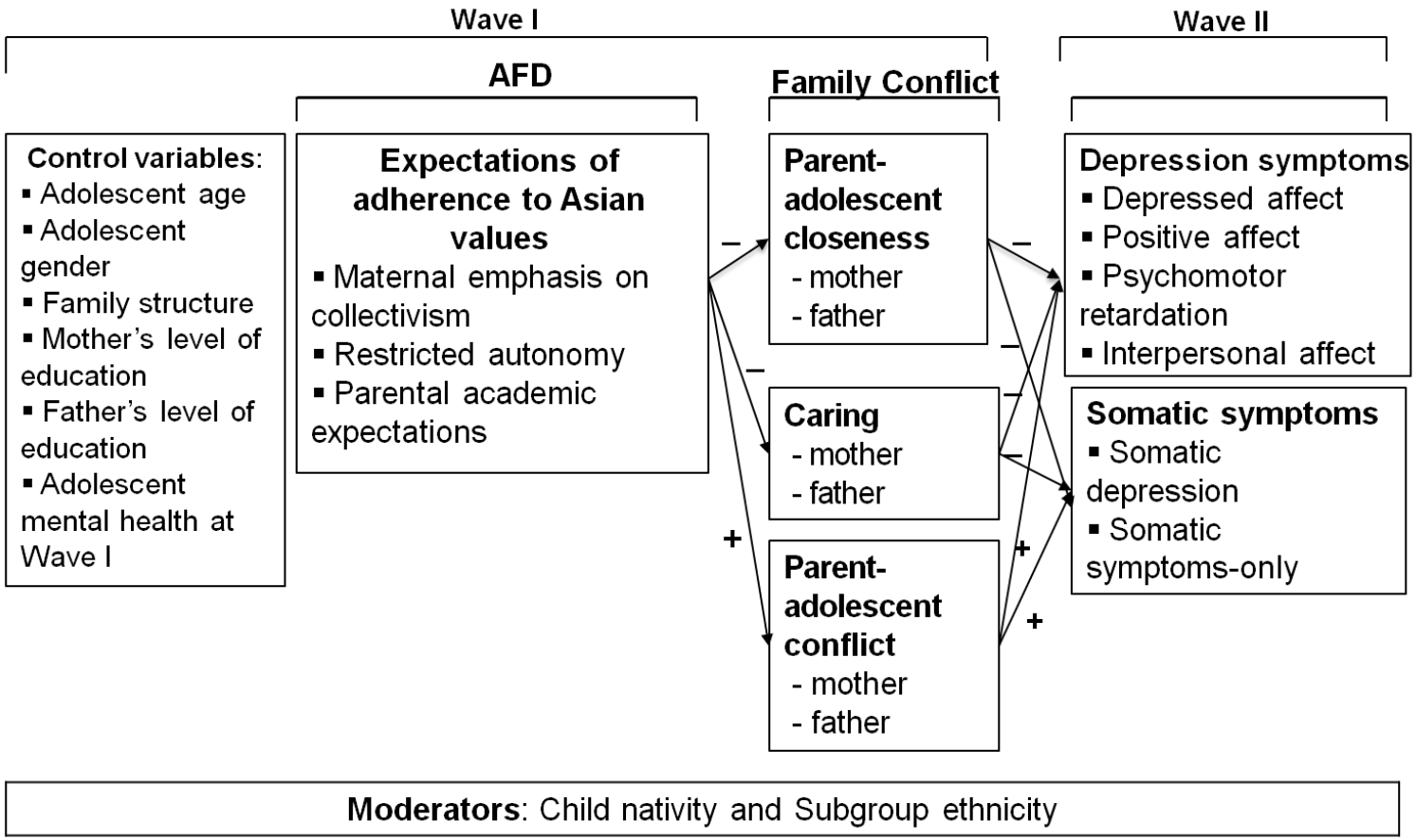

Figure 3. Hypothesized Model Based on the AFD Model

The following sections review the literature each of family conflict and family cohesion that may be influenced by AFD.

Cultural conflict and parent-adolescent conflict. Consistent with part of AFD, cultural incongruence between immigrant parents and children is associated with parent-adolescent conflict. Cultural conflict can be caused by different levels of both the host and ethnic cultures. Several studies have indicated that cultural differences in the ethic culture have a stronger effect in predicting parental conflict compared to those in the host culture (Ho & Birman, 2010; Hwang et al., 2010; Liu et al., 2009; Phinney & Vedder, 2006). For example, a study of Chinese Canadian mothers and adolescents indicated that acculturated children reported more frequent family conflicts when their parents were more involved in traditional values (Tardif & Geva, 2006).

In Asian immigrant families, parents' orientation toward traditional Asian values such as emphasis on family obligation, restricted autonomy, and high academic expectations and their expectations for their children to adhere to these values were found to be associated with increased parent-child conflict. Zhou (1997) suggested that family obligation is the most significant source of parent-child conflict in Asian American families. Juang, Syed, and Takagi (2007) showed that Chinese parents endorsed more parental control than their children and the discrepancy was associated with family conflict. In addition, higher levels of expectations that Asian American parents had for their children's academic and occupational success were found to be prevalent and influential intergenerational conflicts among Asian American families (Tsai-Chae & Nagata, 2008). Similarly, based on interviews with 18 Korean American college

students, Kang et al. (2010) found that parental academic pressures created conflicts with their parents. Based on the AFD model and previous studies, in the present study it was expected that Asian value orientations of parents and children would impact parent-adolescent conflict (e.g., conflict with mother/father) in Asian American families. This study examined the cultural factor with adolescents' perception of the degree of presence of traditional Asian cultural values, rather than parent-adolescent cultural gap.

Cultural conflict and parent-adolescent closeness/caring. In contrast, previous studies have suggested that cultural difference is linked to decreased parent-adolescent closeness/caring. Across all racial-ethnic groups, adolescents tend to perceive decreased emotional closeness from parents starting in early adolescence (Fuligni, 1998; Tasi, Telzer, & Fuligni, 2013). Immigration may intensify the decrease in the parent-child cohesion. Because of cultural differences between parents and their children, immigrant children may report lower level of parent-child closeness rather than children from non-immigrant families. For example, Dyson, Qi, and Wang (2012) compared 112 Chinese families who immigrated to Canada with 90 Caucasian non-immigrant families. They found that Chinese immigrant parents reported a lower level of family cohesion compared with the non-immigrants.

Several studies have indicated that adolescent children from immigrant families have difficulties in maintaining close relationships with their parents because of cultural differences between parents and children. Using a qualitative data from 120 Chinese American youth, Qin et al. (2008) suggest that high educational expectations and cultural conflicts are challenges to emotional closeness. Chinese American adolescents reported

frustration with their parents' traditional parenting (e.g., control and discipline and expecting one-way obedience). The cultural barriers were found to prevent adolescents and their parents from building close relationships. Similarly, based on 73 in-depth interviews on Korean American and Vietnamese American college students, Pyke (2000) found that the children longed for Americanized parenting styles such as affectionate and emotionally close. However, their experience of Asian parenting from their parents such as heavy emphasis on obedience and hierarchy and lack of affection made them feel emotionally distant from their parents.

In summary, expectations of Asian values would be related to increased parent-adolescent conflict and decreased parent-adolescent closeness/caring among Asian American adolescents. However, most studies have been conducted using small samples (Juang & Cookston, 2009; Vu & Rook, 2013; Padmawidjaja & Chao, 2010; Tardif & Geva, 2006; Tran et al., 1996), and thus, it is hard to generalize the findings to the Asian American population as a whole in the U.S. In addition, previous studies have failed to consider the possible moderating effects of child nativity. U.S.-born Asian American children generally adhere less to their families' Asian culture, and thus, they are more likely to report conflict with their parents compared to foreign-born youth. For example, the value difference in family obligations between parents and children was greater for U.S.-born Vietnamese American adolescents than those of foreign-born Vietnamese American adolescents (Phinney et al., 2000). In addition, children of later generations tend to be more willing to disagree with their parents than those of earlier generations (Fuligni, 1998). Their willingness to disagree with their parents is

negatively associated with adolescents' feelings of cohesion with their parents (Fuligni, 1998). This implies that disagreements with their parents may reflect lower emotional bonding with their parents among U.S-born adolescents as compared to foreign-born adolescents.

Furthermore, cultural values and family dynamics differ by subgroup ethnicity. Because of different immigration history and cultural principles, children from Asian immigrant families have different cultural expectations (e.g., autonomy and parenting norm) and parent-child relationships (Crockett et al., 2010; Fuligni, 1998; Tseng & Fuligni, 2010). However, most studies have focused one specific subgroup or generalize across diverse Asian subgroups, thereby overlooking the role of subgroup ethnicity in Asian Americans.

The current study addressed these gaps in the literature by using a nationally representative dataset with measures selected for relevance to Asian cultures. Specifically, the study investigated the role of Asian traditional expectations such as maternal emphasis on collectivism, parental emphasis on restricted autonomy and parental academic expectations in predicting family functioning (parent-adolescent conflict and parent-adolescent closeness/caring) as well as adolescents' mental health. This study also examined the moderating effect of child nativity and subgroup ethnicity in the relationship between Asian expectations, family functioning, and mental health.

Family Dynamics and Asian American Adolescent Mental Health

A growing number of studies have indicated that Asian American adolescents have poor mental health such as depression symptoms (Okazaki, 1997), lower self-esteem

(Greene et al., 2006; Rhee et al., 2003; Twenge & Crocker, 2002) and greater somatic symptoms (Wang, 2003) than other racial groups. Family conflicts related to the intergenerational acculturation gap have been identified as a major contributor of psychological problems among Asian American adolescents (Greenberger, Chen, Tally, & Dong, 2000; Juang et al., 2007; Lee, Su, & Yoshida, 2005).

As stated earlier, Hwang's (2006) AFD model suggested that AFD consists of cultural conflicts and ineffective communication and that directly increases the risk for individual dysfunction through emotional, cognitive, and behavioral distancing. Moreover, it is suggested that family conflict mediates the relationship between AFD and individual dysfunction.

Symbolic interaction theory also provides a framework to explain how family distancing led by different cultural orientations causes individual mental health problems. Children from immigrant families have conflicting cultural expectations and roles between culture of origin and host culture. Conflicting cultural expectations can cause role strain and role confusion, which involve stressful feeling (Burr et al., 1979). Based on the two frameworks, it is expected that expectations of cultural values are associated with greater family conflict, which in turn leads to adolescent dysfunction. Especially, it has been found that the ethnic cultural gap has a stronger effect on parent-child conflict and youth maladjustment that the host cultural gap between parents and children (Ho & Birman, 2010; Hwang et al., 2010; Liu et al., 2009; Phinney & Vedder, 2006). Therefore, this study examined the role of Asian cultural expectations on Asian adolescents' mental health.

Cultural expectations in Asian American families and mental health. A number of previous studies on Asian American families have found that children of foreign-born parents have greater mental health problems when their parents endorse their culture of origin and thus expect traditional values toward them (Costigan & Dokis, 2006; Kim et al., 2013; Weaver & Kim, 2008). For example, Costigan and Dokis (2006) examined how parent-child acculturation differences affect adolescent adjustment among 91 immigrant Chinese families in Canada. Findings show that when fathers were strongly oriented toward Chinese culture, children's lower levels of Chinese orientation was associated with greater depression symptoms. Similarly, more American-oriented adolescents with more Chinese-oriented parents reported most depression symptoms among Chinese American adolescents of mostly foreign-born parents (Weaver & Kim, 2008).

Emphasis on collectivism/family obligation. As a central value of Asian culture, emphasis on family obligation has found to be linked to adolescent mental health problems (Aldwin & Greenberger, 1987; Phinney & Ong, 2002; Phinney & Vedder, 2006; Qin, 2008). For example, Phinney and Ong (2002) investigated the role of adolescent-parent discrepancy in family obligations on child life satisfaction. The researchers included 135 European American families and 103 Vietnamese American families. The family obligation discrepancy was measured by subtracting adolescent scores on the family obligations measure from parent scores on the same variable. Findings showed that adolescent-parent discrepancies were a strong negative predictor of life satisfaction across two groups. This result suggests that a higher level of parental

endorsement toward family obligation can cause child adjustment problems. Similarly, Phinney and Vedder (2006) found discrepancies in family obligations between parents and child were associated with lower psychological and sociocultural adaptation among immigrant youth. In another study, Aldwin and Greenberger (1987) focused on Korean American and European American college students. They found perceived parental traditionalism (e.g., emphasis on obedience, respect for authority) to be associated with greater depression symptoms for Korean American college students but not for European Americans.

Behavioral expectations and decision-making. In addition, differing views about behavioral expectations and decision making can be associated with greater mental health problems among Asian American adolescents. Asian immigrant parents are especially reluctant to share decision-making with their children and practice more "authoritarian parenting" than European American counterparts (Chao, 2001; Kao, 2004; Pong, Johnston, & Chen, 2009). Since adolescents develop into autonomous individuals (Steinberg & Morris, 2001) and this autonomy is especially valued in the U.S., parental monitoring that restricts their autonomy can be stressful for Asian American adolescents. Several researchers have found that high levels of perceived parental control and monitoring can have negative effects on mental health among Asian American adolescents (Herz & Gullone, 1999; Kim et al., 2013; Nuyen, 2008). For example, Qin (2008) compared the family dynamics of two groups of adolescents from Chinese immigrant families: non-distressed adolescents and distressed adolescents. The researcher divided the adolescents into the two groups based on mental health scores and

conducted 5-year longitudinal qualitative interviews. Findings revealed that most parents of distressed adolescents continued to maintain strict control and monitoring over their children in daily life.

Moreover, discrepancies in desired levels of autonomy and independence between children and their parents can lead to children's psychological adaptation in immigrant families. The discrepancies are found to be related to greater psychological problems in the broader literature on immigrant families (Bamaca-Colbert & Umana-Taylor, 2012; Phinney & Vedder, 2006; Russell, Chu, Crockett, & Doan, 2010). For example, Bámaca-Colbert and Umaña-Taylor (2012) examined the effect of differing expectations regarding autonomy on child mental health among 338 Mexican-origin, female adolescents. Results indicated that the discrepancy between parents and children in autonomy had a direct effect on greater depression symptoms, with wider discrepancies having a greater impact.

Emphasis on academic achievement and perfectionism. Furthermore, previous studies have found that the parents' strong emphasis on academic achievement can also be a stressor for Asian American adolescents. According to Tsai-Chae and Nagata (2008), education and career issue is a frequent source of parent-child conflict in Asian American families. Yee (1992) suggested perfectionism to explain Asian Americans' concern about meeting high parental expectations. For example, Asian American students may experience doubts about their actions, concerns about making mistakes, and perceived criticism if they do not meet those expectations (Chang, 1998). Castro and Rice (2003) found that parental criticism and doubts about actions were associated with

greater depressive symptoms among Asian American college students. Moreover, qualitative studies on Asian American students have suggested that academic pressure from parents can lead to psychological distress. For example, with a sample of 120 first- and second-generation Chinese American students, Qin et al. (2008) explored the family and peer experiences of Chinese American adolescents. They found that academic pressure was one of challenges that Chinese American adolescents had with their parents. The pressure caused them to feel alienated at home. Similarly, Kang et al. (2010) conducted interviews with18 Korean American college students. The researchers found that parental academic pressures appeared to create conflicts with their parents when they socialized with peers. They complained that "education comes first, friends come second (p. 451)." In addition, participants reported that high levels of pressure for academic success also created stress.

Summary. Expectations of adherence to Asian cultural values, such as emphasis on collectivism, emphasis on restricted autonomy, and academic expectations, were found to be associated with greater mental health problems among Asian American adolescents. Generational status impacts the ways children from immigrant families orient themselves to their ethnic culture (Fuligni, 1998; Uba, 1994) and thus the influence of Asian cultural value expectations on mental health can vary by child nativity (Wu & Chao, 2011; Phinney & Ong, 2002). For example, Wu and Chao (2011) found that higher level of adolescents' disagreement between ideal and perception of parental warmth led to greater internalizing problems such as somatic complaints among Chinese American adolescents (Wu & Chao, 2011). The discrepancies in parental warmth were

related to greater internalizing symptoms for U.S.-born Chinese American youth, not for foreign-born youth. Moreover, Asian subgroups differ in their expression of Asian cultural values and family functioning because of different cultural principles and history (Ling & Austin, 2010; Tseng & Fuligni, 2010). However, little is known about the moderating effect of child nativity and subgroup ethnicity on the relationship between expectations of adherence to Asian cultural values and mental health. To address this gap, this study investigated differing effect of expectations of adherence to Asian cultural values on Asian American adolescent mental health by child nativity and subgroup ethnicity.

Parent-adolescent conflict and adolescent mental health in Asian American families. In addition to a direct effect of cultural conflict on individual dysfunction, the AFD model (Hwang, 2006) suggests that increased intergenerational conflict lead to greater individual maladjustment in Asian American children and immigrant children more generally. Previous studies reveal that parent-child conflict during adolescent as a significant risk factor for internalizing adolescent problems (e.g., depression, anxiety, and low self-esteem) (Formoso, Gonzales, & Aiken, 2000; Gil, Vega, & Dimans, 1994; Rumbaut, 1994; Lee & Liu, 2001). For example, Gil, Vega and Dimans found that parent-child cultural conflict was associated with lower self-esteem among Hispanic high school adolescent boys. Another study conducted by Rumbaut (1994), examined the role of family conflict on adolescent's mental health. Using a sample of 5,000 early-adolescent children of immigrants from Asia, Latin America, and the Caribbean, the study revealed that family conflict was a significant predictor of lower self-esteem and

higher levels of depressive symptoms. Similarly, with a sample of Asian American, Hispanic, and European American college students, Lee and Liu (2001) found that family cultural conflict was associated with higher levels of psychological distress.

Studies of mental health in adolescents with Asian background have documented a strong link between family conflict and adolescent mental health such as depression symptoms (Greenberger et al., 2000; Juang et al., 2007), psychological distress (Lee & Liu, 2001; Su, Lee, & Vang, 2005), and somatic symptoms (Lee et al., 2005). For example, Greenberger et al. (2000) examined the effect of family and peer relationships on depressive symptoms among adolescents in the U.S. and China. The sample included 201 high school students in the U.S. (e.g., European American, Asian American, Latino American, and African American) and 502 Chinese adolescents. Family conflict was measured by adolescent report of frequency of conflict with parents regarding school-related issues, chores, friends, family relationships, and so on. Results revealed that family conflict was more strongly associated with depression for Chinese adolescents than U.S. adolescents. The researchers explained that the finding might be related to Chinese collective culture which emphasizes harmony. Compared to adolescents with individualist values, those with strong values of harmony are more likely to be mentally affected by relationships with family members.

Parent-adolescent closeness and mental health in Asian American families. Although the AFD model includes only the role of family conflict in individual mental health, this study examined the roles of both family conflict and family cohesion since these independently affect adolescent well-being (Choi et al., 2008; Formoso et al., 2000).

Studies have indicated that parent–child conflict and closeness independently influence adolescent well-being. Specifically, they both influence problem behaviors among Vietnamese American and Cambodian American youth (Choi et al., 2008) and depression symptoms and conduct problems among racially diverse youth (Formoso et al., 2000). For example, Forsmoso et al. (2000) found that attachment with parents were negatively associated with depression symptoms whereas family conflict was related to greater depressive symptoms. The finding suggests that a strong and positive parent–child bond can assure youth that parents are a source of stability and support (Forsmoso et al., 2000).

A number of studies have demonstrated that a positive relationship with parents is predictive of a variety of adjustment indicators for adolescents including problem behavior (Arbona & Power, 2003; Choi et al., 2008; Hamh, Lahiff, & Guterman, 2003; Willgerodt, 2008) and mental health (Arbona & Power, 2003; Hannum & Dvorak, 2004; Maffini, Wong, & Shin, 2011; Willgerodt, 2008). For example, Arbona and Power (2003) investigated the role of parental attachment on adolescents' self-esteem and antisocial behavior. The sample included African American (n = 488), European American (n = 661), and Mexican American (n = 434) high school students. Results revealed that securely attached adolescents had a more positive sense of self-esteem and reported less involvement in antisocial behaviors than their less securely attached peers. Similarly, attachment to mother predicted less psychological distress and attachment to father was associated with better social adjustment among primarily Caucasian college students (Hannum & Dvorak, 2004).

Asian American adolescents are more likely to value family cohesion, and it provides social support against stress (Choi et al., 2008) and problem behavior (Hamh et al., 2003). However, few studies have examined parent-child relations as predictors of Asian American adolescent mental health (Qin et al., 2008). Using a sample of 749 Asian American adolescent from the Add Health, Maffini et al. (2011) investigated the link between family bonds and somatic symptoms, and the moderating effect of the family bond in the relationship between violent victimization and somatic symptoms. Results revealed that emotional bonds with fathers were negatively related to somatic symptoms, and instrumental bonds with mothers weakened the relationship between violent victimization and somatic symptoms.

In summary, many previous studies have demonstrated significant associations among family conflict, parent-child closeness, and adolescent mental health. Adolescents with higher levels of parent-child conflict and lower levels of parent-child closeness have been found to exhibit greater mental health problems such as depressive symptoms and somatic symptoms. However, much of the past research on Asian American adolescents has focused on the effect of family conflict. In addition, many studies have used small college student samples (Hannum & Dvorak, 2004; Lee & Liu, 2001; Lee et al., 2005; Su et al., 2005).

Additional studies are needed to explore the relationship both the effect of family conflict and family cohesion in Asian American adolescent's mental health. Since negative interactions are not necessarily inversed related (Lincoln et al., 2010; Sangalang & Gee, 2012) and studies have indicated that parental conflict and closeness

independently influence adolescent well-being (Choi et al., 2008; Formoso et al., 2000), this study examined how the two types of family functioning affect adolescent's mental health as measured by depression symptoms and somatic symptoms. Moreover, the present study used a nationally representative Asian American adolescent sample from the Add Health. This informs our understanding of the experiences of Asian American adolescents. By examining risk and protective factors for adolescents' mental health, this study expands knowledge about how to intervene in lives of at-risk Asian American adolescents.

Based on the existing literature, in the present study it was expected that adolescents who reported a higher level of parent-adolescent conflict would exhibit greater depression symptoms and somatic symptoms. In contrast, adolescents who reported higher level of parent-adolescent closeness/caring would exhibit fewer depression symptoms and somatic symptoms.

The Role of Generational Status in the Dynamics of Asian American Families

According to Hwang (2006), AFD can have a qualitatively different impact on immigrant families by children's generational status. Resources such as knowledge and community-based ethnic network for negotiating conflicting roles can be different by the children's nativity. Research has shown that different mental health among Asian Americans is known to be partially explained by generational status (Angel, Buckley, & Sakamoto, 2001; Fuligni, 2004; Rumbaut, 1994; Wu & Chao, 2011). Despite the importance of generational status, it has not received adequate attention in studies of

adolescents from immigrant families (Fuligni, 2001; Juang et al., 2012). Therefore, it is imperative to consider generational status as a key variable in this study.

Generational status is defined by country of birth (of self and parents) and age at which a person immigrates into a new society (Ryabov, 2013). Typically, immigrant generation is defined based on nativity of self and parents. The first-generation consists of immigrants who were born abroad and moved to the U.S. Second-generation immigrants were born in the U.S. to at least one foreign-born parent, and third-generation immigrants (and higher) were born in the U.S. to two U.S.-born parents (Discoll, Russell, & Crockett, 2007). Rumbaut (2004) proposed a refined categorization of generational status by considering age and life stage at arrival. Although the new categorization could provide detailed information with regard to language and accent, educational attainment, and ethnic identity of immigrant children (Rumbaut, 2004), this study used adolescent nativity (U.S.-born or foreign-born) because Asian Americans consist of mostly first-generation and second-generation immigrants (Zhou & Xiong, 2005) and thus, there may not be large variations in the generational status.

Child nativity affects the modes and pace of acculturation and ethnic networks. U.S.-born children may be different from their foreign-born peers in terms of their values, knowledge of culture of origin and lifestyles (Juang & Cookson, 2009; Takeuchi & Hong, 2007). Previous studies have suggested that more recent immigrant generations of Asian Americans are more likely to rely on close relationships of the same ethnicity than the more acculturated early generations (Ryabov, 2013; Tillman et al., 2006). In addition, whereas foreign-born Asian immigrant adolescents have more knowledge of

their culture of origin (Dinh & Nguyen, 2006; Phinney et al., 2000; Wu & Chao, 2005), U. S.-born Asian American adolescents may adhere less to the culture and value of their families' country of origin (Juang & Cookson, 2009; Takeuchi & Hong, 2007). For example, later generations have earlier expectations for autonomy (Fuligni, 1998) and less likely to be oriented toward family obligation (Phinney et al., 2000). Later immigrant generation children tend to experience a higher level of acculturation than those of foreign-born adolescents (Bui, 2008; Juang & Cookston, 2009). More acculturated youth are more likely to engage in peer relationships outside the home and adopt values and beliefs that may be in conflict with those of their foreign-born parents (Bui, 2008).

The different levels of cultural orientation for family members with differing generational status can lead to complex family dynamics in Asian immigrant families. Because foreign-born parents are more likely to adhere to their native ethnic culture and less likely to be acculturated to the host culture, interactions with their U.S.-born children can be more difficult from their foreign-born counterparts. For example, U.S.-born Vietnamese American adolescents disagreed more with their parents on the issue of family obligation while foreign-born Vietnamese American adolescents agreed closely with their parents (Phinney et al., 2000). Similarly, U.S.-born Chinese American adolescents were more distressed than foreign-born children over the issues of cultural distancing with their parents (Wu & Chao, 2011).

The experiences of immigrant children in terms of values and family relationships are different by generational status. However, few studies have taken into account the

moderating effect of generational status when they have assessed the associations between cultural expectations, family functioning, and mental health. This study examined this issue by testing the moderating effect of child nativity in the relationships between the variables. Based on previous studies, it was expected that expectations of adherence to Asian cultural values would lead to poor mental health among Asian American adolescents. The magnitude of the effect was expected to be stronger for U.S.-born adolescents than foreign-born adolescents.

Acculturation and enculturation in later generations of Asian American families: Relevance for the AFD model. As stated earlier, most studies guided by intergenerational conflict models for immigrant families have focused on an acculturation difference between immigrant parents and their children. However, enculturation processes, or the act of teaching ethnic minority children about the values and behaviors of the culture of origin (Park, 2007) is highly likely to be co-occurring. Especially for Asian American families, there are few studies that examine their enculturation to the culture of origin because most Asian American families consist of members that are first- and second-generation immigrants. Nevertheless, the dynamics outlined in AFD may still be relevant because of the contrast in norms that persists between White American families (Western) and Asian American families. Therefore, this present study explored the explanatory power of the proposed model for the full sample in addition to examining it in U.S.-born adolescents.

Subgroup Ethnic Differences in Asian Americans Families: East Asian and Filipino Families

In addition to nativity, subgroup ethnicity is a key variable in understanding cultural adaptation and orientation of Asian Americans (Willgerodt & Thompson, 2006). From the symbolic interaction perspective, cultural differences in Asian subgroups are important in examining a role negotiation process because subcultures have different meanings and expectations regarding roles. This study examined the effect of subgroup ethnicity in Asian American families as a moderator. Few studies have examined subgroup differences in Asian American families (Choi, 2008; Wong & Maffini, 2011). This study addressed this gap by comparing adolescents with East Asian backgrounds (Chinese, Japanese, and Korean) to those with Southeast Asian backgrounds (Filipino).

Each Asian American subgroup has its own unique characteristics and immigration history. There are at least 17 nationality groups and eight Pacific Islander groups within the Asian and Pacific Islander American population who differ in language, cultural background, and religion (Choi, 2008). This study focused on Chinese, Japanese, Korean, and Filipino families. Even though their cultures are all geographically categorized as Asian, they might differ in cultural principles. For example, East Asian countries like China, Korea, and Japan have been influenced by unifying cultural principles such as those of Confucianism and Buddhism (Chao, 1994, 1995). However, Filipino cultural principles are harder to define due to their unique history of colonization by Spain, Great Britain, Japan, and the U.S. (Chao & Kaeochinda, 2010). This could lead to subtle differences in parenting norms and children's

expectation of parenting behaviors (Crockett et al., 2010). Specifically, because of Confucian principles emphasize hierarchical relationships between parents and children, Chinese adolescents are expected to obey their parents their entire lives. Although Filipino families also emphasize the importance of respecting the purview of parental authority, it is not as strongly manifested as in traditional Chinese families (Fuligni, 1998; Uba, 1994).

Moreover, Filipino immigrants are distinct from other Asian immigrants in English proficiency and ethnic group attachment. Many Filipino Americans are at least semi-fluent in English and less likely to form their own ethnic enclaves (Ling & Austin, 2010). Therefore, they seem to be more acculturated to Western cultures. Filipino immigrant families tend to use English at home while their Chinese peers more often speak their native language at home. The use of English at home may facilitate adoption of Western ideologies (Blair & Qian, 1998), including ideologies related to family relationships and parenting. For example, adolescents and parents of Filipino background were far more likely than were their East Asian and Latino counterparts to be communicating mutually in English (Tseng & Fuligni, 2010).

Several studies have indicated that Asian subgroups may differ from each other in their understanding of cultural norms and parenting. For example, with a sample of Mexican, Chinese, Filipino, European high school students from immigrant and non-immigrant families, Fuligni (1998) found Filipino American adolescents expected behavioral autonomy at a fairly early age when compared to their Chinese counterparts. A study conducted by Crockett et al. (2010) investigated cross-ethnic equivalence of

parenting measures between Chinese American adolescents and Filipino American adolescents using the Add Health data. Results showed that Chinese American youth held different concepts of parental support and autonomy granting compared to Filipino American adolescents, indicating subgroup differences in conceptions of parenting. These findings provide evidence for examining subgroup ethnic differences in cultural values and parent-child relationships.

Even though they share some similarities, their family relationships are qualitatively different due to different immigration history and culture of origin. However, most studies have not paid much attention to subgroup differences in Asian Americans, thereby masking differences between subgroups (Willgerodt & Thompson, 2006). Few studies have taken into account the moderating effect of subgroup ethnicity when they have assessed the associations between cultural expectations, family functioning, and adolescent mental health. The current study attempted to address this gap with a focus on adolescents with East Asian backgrounds (Chinese, Japanese, and Korean) and those with Southeast Asian background (Filipino) and examine the group differences. Taken together, this study tested whether Asian cultural expectations were more likely associated with higher level of family conflict and lower level of family cohesion, which in turn led to poor mental health outcomes, and how these patterns varied by Asian subgroup ethnicity (East Asian vs. Filipino).

Research Hypotheses and Hypothesized Conceptual Model

The primary purpose of this study was to examine the effects of expectations of Asian cultural values and family functioning on adolescents' mental health over time.

In accordance with the symbolic interaction theory, this study examined the effects of expectations of adherence to Asian cultural values on adolescent mental health one year later including depression symptoms and somatic symptoms. Moreover, based on Hwang's (2006) AFD model, this study examined the mediating role of family functioning (parent-adolescent conflict and parent-adolescent closeness/caring) between expectations of Asian cultural values and adolescent mental health one year later. This study used maternal emphasis on collectivism, parental emphasis on restricted autonomy, and parental academic expectations as measures of Asian cultural values. In addition, this study investigated the moderating effects of child nativity and subgroup ethnicity in the relationships because immigrant children have different expectations and meaning of roles by child nativity and subgroup ethnicity.

In summary, using Hwang's (2006) AFD model and symbolic interaction theory as a guide, this study tested a mediational model of the impact of Asian cultural values and family functioning in adolescent mental health problems. It was expected that expectations of adherence to Asian cultural values at Wave I would be linked to lower parent-adolescent closeness/caring (e.g., closeness with mother/father and caring from mother/father) (*Hypothesis 1a*) and greater parent-adolescent conflict (conflict with mother/father) (*Hypothesis 1b*) at Wave I. Additionally, it was expected that greater parent-adolescent closeness/caring (e.g., closeness with mother/father and caring from mother/father) would lead to fewer mental health problems at Wave II (e.g., depressed affect, positive affect, psychomotor retardation, interpersonal affect, somatic depression, and somatic symptoms-only) (*Hypothesis 2a*). Parent-adolescent conflict (e.g., conflict

with mother/father) would lead to greater mental health problems at Wave II (e.g., depressed affect, positive affect, psychomotor retardation, interpersonal affect, somatic depression, and somatic symptoms-only) (*Hypothesis 2b*). Finally, it was expected that parent-adolescent relationships as measured by closeness with mother/father, caring from mother/father, and conflict with mother/father would mediate the relationship between expectations of adherence to Asian values and adolescent mental health problems (e.g., depressed affect, positive affect, psychomotor retardation, interpersonal affect, somatic depression, and somatic symptoms-only) (*Hypothesis 3*). Consistent with AFD model, this study examined child nativity as a moderator. Specifically, the mediational model would be stronger for U.S.-born adolescents when compared to foreign-born counterparts (*Hypothesis 4*). In other words, it was hypothesized that the relationships between variables to be in the same direction as the full sample but more pronounced. Lastly, based on previous studies on subgroup differences in Asian American families, this study explored a subgroup (East Asians vs. Filipino) difference in the relationships between variables (*Hypothesis 5*). These relationships are depicted in Figure 3 on page 31.

Chapter 3: Method

Data

This study used data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), a nationally representative survey of health behaviors of adolescents. The Add Health project was directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill (Harris, 2009). The project was funded by National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. The survey contains comprehensive information about health behaviors, health status, family relationships (parents, sibling), neighborhood, peer networks, employment experience, and romantic relationships as well as other topics (Bearman, Jones, & Udry, 1997).

The Add Health project used a complex cluster sampling technique to select a nationally representative sample of high school students from Grades 7 through 12 in the U.S. All high schools in the U. S. were stratified by region, urbanicity, school size, school type (public, private, parochial), ethnicity, and grade span. A sample of 80 pairs of eligible high schools and feeder schools (typically a middle school) were selected. Thus, students from a total of 80 pair or 132 discrete schools were included in the project.

The In-School questionnaire was administered to over 90,000 students between 1994 and 1995. All students who completed an in-school questionnaire, as well as those who did not participated in the in-school survey but who were listed on a school roster, were eligible for being selected in the core sample. The core sample participants were

randomly selected from grade-gender stratum. A total of about 200 adolescents were selected from each of the 80 pairs of schools. Among the core sample, 12,105 participated in the Wave I in-home interview, for a response rate of about 75%. In addition, some ethnic groups (e.g.. Chinese Americans, Cuban Americans) (ethnic samples), disabled students (disabled sample), and pairs of siblings living in the same households (genetic sample) were oversampled.

The Wave I In-Home interview was conducted between September 1994 and December 1995. A total of 20,745 students both from the core sample and oversamples were included in the original sample. The majority of interviews were conducted in respondents' homes. The survey was conducted in English. To protect confidentiality, all responses were recorded on laptop computers. The Wave II In-Home interview took place between April and August 1996 (N = 14,378). Respondents who were in only the Wave I disabled oversample were not interviewed at Wave II. Those who were in the 12th grade at Wave I and who were not part of the genetic oversample were not re-interviewed. Generally, the interview content is highly similar to that at Wave I.

The Add Health study design used a cluster sample in which the clusters were sampled with unequal probability. Therefore, by using correct sampling weights and a variable to identify clustering of adolescents within schools, unbiased estimates of population parameters and standard errors are obtained from the analysis (Chen & Chantala, 2014). This study used Wave II cross-sectional weights (variable name: GSWGT2) because the outcome variables of this study were drawn from Wave II.

Moreover, in order to adjust for the clustering effect, stratum variable (REGION) and cluster variable (PSUSCID) were identified when analyzing data.

Sample

The current sample was drawn from adolescents who completed interviews at both Waves I and II. The initial sample consisted of 1,089 self-identified Asian or Pacific Islander adolescents who responded to surveys at both Waves I and II. Further, multi-racial adolescents were excluded from the study sample (a decrease of 198 cases). The focus of this study was two-parent families based on the high rate of marriage among Asian American families[1]. In addition, this study examined the role of parent-adolescent relationships (e.g., closeness and conflict) for a mother and a father, rather than parents as a whole. Therefore, respondents who were from one-parent families (a decrease of 136) and from no-parent families (a decrease of 56) were removed. Parents did not have to be biologically related to adolescents but could be step, adoptive, and foster parents. Participants with missing weight data were excluded (a decrease of 33). Further, the current sample was restricted to adolescents who reported their Asian background as Chinese, Japanese, Korean or Filipino. It was discovered that one adolescent was missing data regarding parental academic expectations, parent-adolescent closeness, and parent-adolescent conflict and was removed from the data set. Further, five adolescents reported depression symptoms or somatic symptoms that were ±3 SD from the mean adolescents' levels of the mental health outcomes at Wave II and were

[1] 60.0% of Asian American households were married couple families in 2010 (U.S. Census Bureau, 2010 American Community Survey).

thus removed from the sample. Finally, it was determined that fewer than 8% of cases were missing control variables (mother's level of education and father's level of education). Missing data were handled with full information maximum likelihood estimation (FIML).

Measures

Expectations of Adherence to Asian Cultural Values

This project assessed expectations of adherence to Asian cultural values with three indicators: maternal emphasis on collectivism, parental emphasis on restricted autonomy, and parental academic expectations.

Maternal emphasis on collectivism. Maternal emphasis on collectivism was measured with one item asking how their mother encourages them to be independent (see Appendix C). The response ranges from 1 (*strongly agree*) to 5 (*strongly disagree*).

Parental emphasis on restricted autonomy. Parental emphasis on restricted autonomy was measured with 7 items measure the extent to which adolescents perceive their parents as setting rules and monitoring their behaviors and associations (see Appendix D). The items begin with the statement, ''Do your parents let you make your own decisions about…'' followed by items such as, ''…the time you must be home on weekend nights,'' ''…the people you hang around with,'' and "…how much television you watch." Each response was measured dichotomously with 0 (*yes*) and 1 (*no*) (reverse coded). The responses for the 7 items were summed to create a restricted autonomy index. The Cronbach's alpha for this measure was. .65.

Parental academic expectations. Parental academic expectations was measured by adolescent participants' responses to the 2 items regarding the degree of disappointment their father or mother would have if they did not graduate from college, respectively (see Appendix E). The response ranged from 1 (*low*) to 5 (*high*). The two items for mothers and for fathers were summed. The internal consistency for this index was .86.

Parent-adolescent Relationships

Closeness with mother. One item assessed adolescents' feelings about the closeness of their relationships with their mother (see Appendix F). Adolescents were asked about how close the relationship with the mother was. In this context, "resident" mother is the mother the adolescent lived with at the date of the interview – independent of the biological status of the relationship. The response was measured on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Caring from mother. One item was used to measure adolescents' feeling of being cared from mother (see Appendix G). Children were asked about how much they thought their resident mother for them. The response was measured on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Conflict with mother. One item was used to measure perceived conflict with their mother (see Appendix H). Adolescents reported whether or not they had had a serious argument with their mother about their behavior during the past month (0 = *no*; 1 = *yes*).

Closeness with father. One item assessed adolescents' feelings about the closeness of their relationships with their father (see Appendix I). Adolescents were asked about how close the relationship with the resident father was. The response was measured on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Caring from father. One item was used to measure adolescents' feeling of being cared from their father (see Appendix J). Children were asked about how much they thought their resident father cared for them. The response was measured on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Conflict with father. One item was used to measure adolescents' conflict with their father (see Appendix K). Adolescents reported whether or not they had had a serious argument with the father about their behavior during the past month (0 = *no*; 1 = *yes*).

Adolescent Mental Health Problems

This project used two measures as indicators of adolescent mental health problems. These consisted of depression symptoms and somatic symptoms.

Depression symptoms. Nineteen items were used to assess adolescent depression symptoms at Wave I and Wave II in this study. The survey items corresponded with the 20-item Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977). Two questions on the Add Health survey were slightly modified from the CES-D (items for "restless sleep" and "crying spells") (Rushton, Forcier, & Schectman, 2002). The CES-D instrument used in Add Health was missing two items: I had crying spells and my sleep was restless. Two items were worded differently that in

the original CES-D: “I felt that everything I did was an effort” and “I could not get going.” One item was an addition to the original CES-D: “I felt that life was not worth living.” The two changes in wording were in keeping with the development of the CES-D for children. The additional item was first added to the CES-D by Garrison and colleagues (1991) as an important component of depression in adolescents (Perreira et al., 2005). Using a 4-point scale ranging from 0 (*never*) to 3 (*all of the time*), adolescents reported how much they had been distressed by each symptom during the past week (see Appendix A). Examples of the items included feeling depressed, feeling sad, and feeling bothered by things that usually did not bother them. All the items were recoded into the same direction so they could be summed up for each, with greater numbers indicating higher level of depression. The Cronbach’s alpha for the depression symptoms scale for Wave I was .86 and for Wave II was .88.

Somatic symptoms. Somatic symptoms were assessed with 20 items using a 5-point scale ranging from 0 (*never)* to 4 *(every day*) at Wave I and Wave II. Adolescents were asked how many times during the past 12 months they experienced each of the symptoms (e.g., “waking up feeling tired” and “feeling really sick”). Examples of items included “How often have you had a headache?” and “How often have you had a stomach ache or an upset stomach?” (see Appendix B). The internal consistency for the somatic symptoms scale for Wave I was .83 and for Wave II was .81.

Child Nativity

Adolescents reported whether they were born in the U.S. Foreign-born was coded as 0 and U.S.-born was coded as 1.

Subgroup Ethnicity

Adolescents who reported their race as Asian or Pacific Islander were asked about their Asian background. The responses were Chinese, Filipino, Japanese, Asian Indian, Korean, Vietnamese, and Other. This present study only included adolescents from Chinese, Filipino, Japanese, and Korean backgrounds and they were categorized into East Asian (Chinese, Japanese, Korean) and Southeast Asian (Filipino).

Control Variables

There are eight variables that were controlled for in this study: age and gender of adolescent, mother's level of education, father's level of education, family structure, and adolescent mental health at Wave I (depressive symptoms and somatic symptoms). These variables were controlled based on their tendencies in prior research (DuongTran, Lee, & Khoi, 1996; Feldman & Rosenthal, 1991; Greenberger et al., 2000; Hannum, & Dvorak, 2004; Hwang, 2006) to be associated with the variables of interest in the present study. The individual and family variables at Wave I were used in the study. *Adolescent age* was measured in years at Wave II. Age at Wave I was used in a planned analysis by subtracting one from the age at Wave II. *Adolescent gender* was coded as 0 = *female* and 1 = *male*. *Mother's and father's highest education level* was measured by the adolescent's report of the residential mother and father figures' highest education level. There were ten responses: eighth grade or less; more than eighth grade, but did not graduate from high school; went to a business, trade, or vocational school instead of high school; high school graduate; completed a GED; went to a business, trade, or vocational school after high school; went to college, but did not graduate; graduated from

a college or university; professional training beyond a four-year college or university; and never went to school. The responses for mother's and father's education were categorized into four groups: less than high school, high school, some college, and college degree or beyond. The information in the Add Health household roster at Wave I was used for family structure. The *Family structure* variable was dichotomized into two-biological parent families and step/adoptive/foster families. Last, *adolescent mental health problems at Wave I* included depression symptoms and somatic symptoms, which were assessed with the same measures at Wave II.

Data Analysis Plan

Missing Data

Prior to main analysis, the issue of missing data was addressed. When individual items are missing within a scale, the mean score of all the other items that the individual had completed on that particular scale was substituted for each missing item (Allison, 2002) as long as the individual did not exceed 25% of missing items on that particular scale. Missing cases within a scale were found regarding restricted autonomy and depression symptoms. None of the participants exceeded 15% of the items missing for the scales and therefore there is no missing total score for the scales.

Descriptive Analysis

Descriptive statistics, such as frequencies, means, and standard deviations were used to summarize the demographic information of adolescents, using the SAS 9.4 statistical package. The demographic variables that were analyzed include age, gender, nativity, subgroup ethnicity of adolescent, mother's level of education, father's level of

education, and family structure Demographic information was further analyzed by comparing characteristics by child's nativity (U.S.-born vs. Foreign-born) and subgroup ethnicity (East Asian vs. Filipino), using *surveyreg* command for continuous variables and *surveyfreq* command for categorical variables.

Additionally, Pearson's correlation coefficients were computed to examine the relationships among all variables. Especially, correlation coefficients between control variables and study variables were conducted to confirm the need to remove the effect of these control variables from the study variables before proceeding to the multivariate analysis.

Multivariate Analysis

Multivariate analysis for this study was conducted by first evaluating the psychometric properties for each of the depression symptoms and somatic symptoms scales that were utilized in the structural models. First, to address the measurement portion of the model, exploratory factor analysis for the full sample was conducted with each instrument. Both confirmatory factor analysis and path analysis was then be utilized using structural equation modeling. Each of the models in this study has two parts: a measurement model and a structural model. After fit indices were acceptable from the exploratory factor analysis, subgroups were utilized to confirm the overall structure. Once this structure was found to have good fit, the structural models were run.

Path analyses were conducted using Mplus version 7 (Muthén & Muthén, 1998-2012). Model fit was evaluated by examining specific goodness-of-fit statistics. As suggested by Hu & Bentler (1999), Root Mean Square Error of Approximation (RMSEA)

that is below 0.06, a Comparative Fit Index (CFI) greater than 0.96, and a Standardized Root Mean Square Residual (SRMR) of less than 0.09 all indicate good model fit.

Figure 4 illustrates the structural model evaluated in this research. The model predicted that adolescents' perceived expectations of adherence to Asian cultural values, such as (a) maternal emphasis on collectivism, (b) parental emphasis on restricted autonomy, and (c) parental academic expectations influence parent-child relationships. As shown in Figure 4, parent-adolescent relationships was assessed by 6 indicators: closeness with mother, caring from mother, conflict with mother, closeness with father, caring from father, conflict with father. Indicators of parent-adolescent relationships are both predicted to influence mental health problems, including depression symptoms and somatic symptoms. In addition, adolescent expectations of adherence to Asian cultural values have a direct effect on adolescent mental health problems. The moderating effect of child nativity and subgroup ethnicity were analyzed by examining the effects of (a) U.S.-born versus foreign-born and (b) East Asian versus Filipino on each of the above paths. Each of the paths present in the model was tested across the two groups to assess if child nativity and subgroup ethnicity moderate the relationship between variables.

After the structural model was run for the full sample, multi-group structural equation models were conducted to examine whether the model is tenable independently for each subgroup (e.g., foreign-born, U.S.-born, East Asian, and Filipino). Model fit was assessed for each model. Next, a simultaneous univariate constraint test was conducted to examine differences in the parameters between groups (foreign-born vs. U.S.-born; East Asian vs. Filipino). The difference of unstandardized estimates of two

parameters were divided by the square root of the sum of each standard error squared (Mann, Rutstein, & Hancock, 2009).

$$z = \frac{b_{(1)} - b_{(2)}}{\sqrt{SE_{b(1)}^2 + SE_{b(2)}^2}}$$

If the difference score was greater than 1.96, it was inferred that there was significant difference in the parameter between groups at the .05 level. Lastly, in order to examine whether the model for each subgroup is tenable simultaneously, the models for each subgroup were estimated simultaneously with all the path coefficients in the structural models constrained to be equal across groups. Since the current study focused on the invariance of structural paths, 54 parameters were constrained to be equal for the test for a group difference. Model fit was assessed for each model.

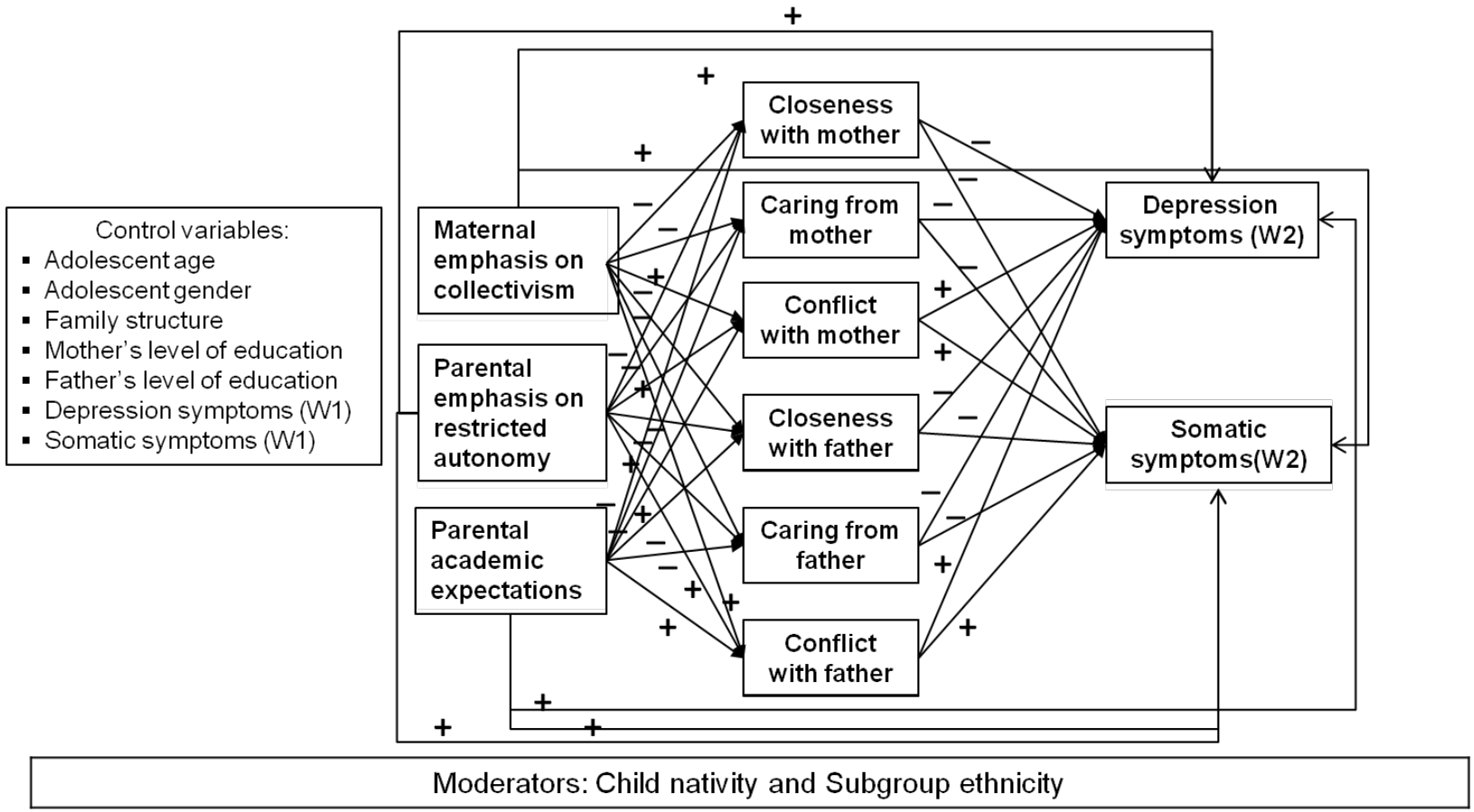

Figure 4. Structural Equation Model

Chapter4: Results

This chapter begins by presenting descriptive statistics for the sample and all study variables. Included is a summary of characteristics of adolescents in the sample, both a total group and by child nativity and subgroup ethnicity. Bivariate relationships between all study variables are also shown.

The chapter then presents results of structural equation model analyses to answer the five research questions for this study. Data were analyzed using Mplus version 7 (Muthén & Muthén, 1998-2012). Each proposed hypothesis was evaluated, and a summary of all results is found at the end of this chapter. Together the five research questions aimed to investigate how parental expectations of Asian cultural values (e.g., maternal emphasis on collectivism, parental emphasis on restricted autonomy, and parental academic expectations) affect parent-adolescent relationships (e.g., closeness with mother/father, caring from mother/father, and conflict with mother/father) and thus depression symptoms and somatic symptoms of Asian American adolescents. This study also explored the moderating influence of nativity (foreign-born vs. U.S.-born) and subgroup ethnicity (East Asian vs. Filipinos) on the relationships of these cultural expectation factors to mental health problems in this sample of Asian American adolescents.

Descriptive Statistics

Univariate descriptive statistics such as means, frequencies, standard deviations, and distribution attributes were obtained using SAS 9.4. Variables assessed included control variables, predictors, and mental health problems. Differences in the variables

by subgroups (foreign-born vs. US- born, East Asian vs. Filipino) were tested using SAS 9.4 *surveyreg* and *surveyfreq* commands to take into account the clustered sampling.

Control Variables

Demographic characteristics. Table 2 describes the control variables for the entire sample and by child nativity. The sample consisted of 250 foreign-born and 236 U.S.-born Asian American adolescents, respectively. The ages of the Asian American adolescents ranged from 11 to 19 years with an average of 15.55 years (*SD* = 1.65). Approximately 50% of the adolescents were female. In examining the family structure of the sample, the majority of adolescents lived in two-biological parent families (92.7%) and few of the Asian American adolescent lived in step, adoptive, or foster families (7.3%). In exploring the education level of the mothers of Asian American adolescents, 13.5% had less than high school degree, 19% had high school degree, 9% had some college education, and 59% had a college degree or beyond. Similarly, 10% of the fathers of the adolescents had less than high school degree, 19% had high school degree, 20% had some college education, and 53% had a college degree or beyond.

When examining the sample by nativity, *surveyreg* analysis found that characteristics for foreign-born and U.S.-born Asian American adolescents differed significantly in age, (F (1, 94) = 33.7, p <.001). For example, foreign-born Asian American adolescents were significantly older than U.S.-born counterparts.

Table 2

Weighted Means and Standard Deviations of Demographics, Total and by Child Nativity

Variable	Total (N = 486)		Foreign-born (n = 250)		U.S.-born (n = 236)		Foreign-born vs. U.S.-born
	M/N	*SD*/%	*M*/N	*SD*/%	*M*/N	*SD*/%	
Age	15.55	1.65	16.07	1.51	15.04	1.62	***
Gender							
Female	24.81	49.5%	136.16	54.5%	105.66	44.8%	
Male	245.19	50.5%	113.84	45.5%	13.34	55.2%	
Family structure							
Two-biological parent family	45.68	92.7%	231.87	92.7%	218.81	92.7%	
Step/adoptive/foster family	35.32	7.3%	18.12	7.3%	17.19	7.3%	
Mother's level of education							
Less than high school	62.90	13.5%	38.55	16.1%	24.86	1.9%	
High school	87.73	18.8%	56.34	23.5%	32.32	14.2%	
Some college	41.64	8.9%	13.59	5.7%	27.40	12.0%	
College degree or beyond	275.01	58.9%	13.97	54.7%	143.17	62.9%	

Variable	Total (N = 486)		Foreign-born (n = 250)		U.S.-born (n = 236)		Foreign-born vs. U.S.-born
	M/N	*SD*/%	*M*/N	*SD*/%	*M*/N	*SD*/%	
Father's level of education							
Less than high school	44.69	9.8%	22.14	9.5%	22.48	10.0%	
High school	84.33	18.5%	49.05	21.1%	35.74	15.9%	
Some college	88.72	19.4%	45.77	19.7%	42.96	19.2%	
College degree or beyond	238.78	52.3%	115.20	49.6%	122.95	54.9%	

*** $p < .001$

Table 3 describes the demographic variables for the entire sample and by subgroup ethnicity. The sample consisted of 222 East Asian and 264 Filipino American adolescents, respectively. When examining the sample by nativity, *surveyreg* and *surveyfreq* analysis found that characteristics for foreign-born and U.S.-born Asian American adolescents differed significantly in terms of age, F (1, 94) = 66.3, p <.001) and mother's level of education, F (3, 94) = 2.8, p <.05). For example, East-Asian American adolescents were younger than Filipino American adolescents. For mother's level of education, approximately 49% of mothers' of East Asian American adolescents and 68% of Filipino American adolescents had a college degree or beyond. In addition,

approximately 23% of mothers' of East Asian American adolescents and 6% of Filipino American adolescents had less than high school degree.

Table 3

Weighted Means and Standard Deviations of Demographics, Total and by Subgroup Ethnicity

Variable	Total (N = 486)		East Asian (n = 222)		Filipino (n = 264)		East Asian vs. Filipino
	M/N	*SD*/%	*M*/N	*SD*/%	*M*/N	*SD*/%	
Age	15.55	1.65	14.79	1.45	16.16	1.55	***
Gender							
Female	24.81	49.5%	112.82	5.8%	128.098	48.5%	
Male	245.19	5.5%	109.19	49.2%	135.902	51.5%	
Family structure							
Two-biological parent family	45.68	92.7%	207.74	93.6%	243.02	92.1%	
Step/adoptive/foster family	35.32	7.3%	14.26	6.4%	2.98	7.9%	

Variable	Total (N = 486)		East Asian (n = 222)		Filipino (n = 264)		East Asian vs. Filipino
	M/N	*SD*/%	*M*/N	*SD*/%	*M*/N	*SD*/%	
Mother's level of education							
Less than high school	62.90	13.5%	47.80	22.5%	15.82	6.2%	*
High school	87.73	18.8%	43.15	2.3%	44.69	17.5%	
Some college	41.64	8.9%	18.33	8.6%	23.28	9.1%	
College degree or beyond	275.01	58.9%	102.97	48.5%	171.18	67.1%	
Father's level of education							
Less than high school	44.69	9.8%	3.27	14.4%	14.80	6.0%	
High school	84.33	18.5%	39.24	18.7%	45.11	18.3%	
Some college	88.72	19.4%	26.16	12.5%	62.02	25.1%	
College degree or beyond	238.78	52.3%	114.08	54.4%	124.90	50.6%	

*** $p < .001$, * $p < .05$

Mental health problems at Wave I. Based on the factor analysis, depression symptoms had four indicators: depressed affect, positive affect, psychomotor retardation, and interpersonal affect (see Appendix L). The construct somatic symptoms had two indicators: somatic depression and somatic symptoms-only (see Appendix M). Table 4 presents the mental health problems at Wave I by child nativity. Table 5 presents the variables by subgroup ethnicity.

With respect to depression symptoms, depressed affect ranged from 0 to 19 with an average score of 3.93 (*SD* = 3.47). This score indicate that the average adolescent in the study reported a low level of depressed affect. Positive affect had a score range of 0 to 12 with a mean of 4.52 (*SD* = 2.68), suggesting that a low level of positive affect for the full sample. The score range for psychomotor retardation was 0 to 7 with a mean score of 2.36 (*SD* = 1.48), indicating the average adolescent in the study had a low level of psychomotor retardation. Similarly, adolescents reported a low level of interpersonal affect with a score range of 0 to 6 (*M* = 1.53, *SD* = 1.32). When examining the variables by child nativity, there was a significant difference in psychomotor retardation. Foreign-born adolescents had a slightly higher means score of 2.54 (*SD* = 1.55) for psychomotor retardation when compared to the mean score of 2.18 (*SD* = 1.39) for U.S.-born adolescents, F (1, 94) = 5.0, p <.05). Except for psychomotor retardation, both groups had similar degrees of depression symptoms.

In assessing the depression symptoms by subgroup ethnicity, regression analysis found that Filipino adolescents had higher levels of depressed affect, psychosomatic retardation, and interpersonal affect (shown in Table 5). For example, among East

Table 4

Descriptive Statistics of Mental Health Problems at Wave I, Total and by Child Nativity

Variables		*M*	*SD*	Range
Depression Symptoms	Depressed affect	3.93	3.47	0-19
	Foreign-born	4.30	3.22	0-19
	U.S.-born	3.57	3.65	0-16
	Positive affect	4.52	2.68	0-12
	Foreign-born	4.70	2.45	0-11
	U.S.-born	4.36	2.89	0-12
	Psychomotor retardation	2.36	1.48	0-7
	Foreign-born	2.54*	1.55	0-7
	U.S.-born	2.18	1.39	0-7
	Interpersonal affect	1.53	1.32	0-6
	Foreign-born	1.64	1.28	0-6
	U.S.-born	1.42	1.35	0-5
Somatic symptoms	Somatic depression	5.17	2.66	0-16
	Foreign-born	5.40	2.78	0-16
	U.S.-born	4.95	2.50	0-13
	Somatic symptoms-only	4.34	2.96	0-15
	Foreign-born	4.46	3.29	0-15
	U.S.-born	4.22	2.60	0-12

Note. All values are weighted.

*Difference between foreign-born and U.S.-born adolescents significant at $p < .05$.

Table 5

Descriptive Statistics of Mental Health Problems at Wave I, Total and by Subgroup Ethnicity

Variables		*M*	*SD*	Range
Depressive Symptoms	Depressed affect	3.93	3.47	0-19
	East Asian	3.13**	3.23	0-15
	Filipino	4.57	3.52	0-19
	Positive affect	4.52	2.68	0-12
	East Asian	4.13	2.71	0-11
	Filipino	4.85	2.61	0-12
	Psychomotor retardation	2.36	1.48	0-7
	East Asian	1.99***	1.37	0-7
	Filipino	2.65	1.51	0-7
	Interpersonal affect	1.53	1.32	0-6
	East Asian	1.30**	1.32	0-6
	Filipino	1.72	1.29	0-5
Somatic symptoms	Somatic depression	5.17	2.66	0-16
	East Asian	4.78	2.50	0-14
	Filipino	5.49	2.74	0-16
	Somatic symptoms-only	4.34	2.96	0-15
	East Asian	4.26	2.69	0-15
	Filipino	4.40	3.16	0-14

Note. All values are weighted.

**Difference between East Asian and Filipino American adolescents significant at at $p < .01$; ***at $p<.001$.

Asian adolescents, the mean score for depressed affect was 3.13 (*SD* = 3.23) while Filipino adolescents had a mean depressed affect score of 4.57 (*SD* = 3.52). The mean difference was significant, F (1, 94) = 11.2, p <.01). East Asian adolescents reported a significantly lower level of psychomotor retardation (*M* = 1.99, *SD* = 1.37) when compared to the mean score of 2.65 (*SD* = 1.51), F (1, 94) = 15.0, p <.001) for Filipino adolescents. Lastly, the mean score of interpersonal affect was 1.30 (*SD* = 1.32) for East Asian adolescents, while the mean score was 1.72 (*SD* = 1.29) for Filipino adolescents. The mean difference was significant, F (1, 94) = 7.3, p <.01).

For the somatic symptoms, somatic depression had a score range of 0 to 16 with a mean score of 5.17 (*SD* = 2.66). This score suggests that the average adolescent in the study had a low level of somatic depression. Similarly, the adolescents reported a low level of somatic symptoms-only with a score range of 0 to 15 (*M* = 4.34, *SD* = 2.96). A significant mean difference by child nativity was not found, indicating foreign-born and U.S.-born adolescent reported similar level of somatic symptoms. When examining the somatic symptom variables by subgroup ethnicity, results indicate there was no significant group difference between East Asian and Filipino adolescents.

Predictor Variables

Expectations of Asian cultural values. Table 6 presents the descriptive statistics for variables regarding Asian cultural values in the study for the total sample and by child nativity. Table 7 presents these results by subgroup ethnicity. Maternal emphasis on collectivism had a score range of 1 to 5 with a mean of 1.98 (*SD* = .95). This mean score indicates that the average adolescent in the study felt there was a

Table 6

Weighted Means and Standard Deviations of Predictor Variables, Total and by Child Nativity

Variables	Total (N = 486)			Foreign-born (n = 250)			U.S.-born (n = 236)			Foreign-born vs. U.S.-born
	M/N	*SD*/%	Range	*M*/N	*SD*/%	Range	*M*/N	*SD*/%	Range	
Expectations of Asian cultural values										
Maternal emphasis on collectivism	1.98	.95	1-5	2.19	.98	1-5	1.77	.87	1-5	**
Parental emphasis on restricted autonomy	2.13	1.73	0-7	2.08	1.73	0-7	2.17	1.74	0-7	
Parental academic expectations	8.98	1.77	2-10	9.05	1.64	2-10	8.91	1.89	2-10	
Parent-adolescent relationships										
Closeness with mother	4.39	.86	1-5	4.37	.96	1-5	4.41	.76	2-5	

Variables	Total (N = 486)			Foreign-born (n = 250)			U.S.-born (n = 236)			Foreign-born vs. U.S.-born
	M/N	*SD*/%	Range	*M*/N	*SD*/%	Range	*M*/N	*SD*/%	Range	
Caring from mother	4.82	.49	2-5	4.80	.56	2-5	4.84	.42	3-5	
Conflict with mother										
Yes	337.90	69.5%		173.79	69.5%		164.10	69.5%		
No	148.10	30.5%		76.21	30.5%		71.90	30.5%		
Closeness with father	4.15	1.02	1-5	4.21	1.04	1-5	4.10	1.00	1-5	
Caring from father	4.71	.71	1-5	4.67	.76	1-5	4.74	.65	2-5	
Conflict with father										
Yes	364.23	74.9%		184.19	73.7%		179.78	76.2%		
No	121.77	25.1%		65.81	26.3%		56.23	23.8%		

** $p < .01$

Table 7

Weighted Means and Standard Deviations of Predictor Variables, Total and by Subgroup Ethnicity

Variables	Total (N = 486)			East Asian (n = 222)			Filipino (n = 264)			East Asian vs. Filipino
	M/N	*SD*/%	Range	*M*/N	*SD*/%	Range	*M*/N	*SD*/%	Range	
Expectations of Asian cultural values										
Maternal emphasis on collectivism	1.98	.95	1-5	1.97	.99	1-5	1.98	.92	1-5	
Parental emphasis on restricted autonomy	2.13	1.73	0-7	2.19	1.66	0-6	2.07	1.79	0-7	
Parental academic expectations	8.98	1.77	2-10	8.87	1.90	2-10	9.07	1.66	2-10	
Parent-adolescent relationships										
Closeness with mother	4.39	.86	1-5	4.44	.74	2-5	4.35	.95	1-5	

Variables	Total (N = 486)			East Asian (n = 222)			Filipino (n = 264)			East Asian vs. Filipino
	M/N	*SD*/%	Range	*M*/N	*SD*/%	Range	*M*/N	*SD*/%	Range	
Caring from mother	4.82	.49	2-5	4.83	.45	3-5	4.81	.53	2-5	
Conflict with mother										
Yes	337.90	69.5%		155.44	70.0%		182.50	69.1%		
No	148.10	30.5%		66.56	30.0%		81.50	30.9%		
Closeness with father	4.15	1.02	1-5	4.20	1.01	1-5	4.12	1.03	1-5	
Caring from father	4.71	.71	1-5	4.70	.72	1-5	4.72	.70	2-5	
Conflict with father										
Yes	364.23	74.9%		171.27	77.1%		193.14	73.2%		
No	121.77	25.1%		50.73	22.9%		70.86	26.8%		

moderate level of mothers' encouragement to be dependent. The mean score for maternal emphasis on collectivism was significantly higher for foreign-born Asian American adolescents (M = 2.19, SD = .98) in comparison to U.S.-born Asian American adolescents (M = 1.77, SD = .87), F (1, 94) = 10.2, p <.01), indicating foreign-born Asian American adolescents perceived more maternal emphasis on collectivism than U.S.-born Asian American adolescents. When examining the sample by subgroup ethnicity (see Table 7), there was no significant difference between the groups. East Asian American adolescents reported a mean score of 1.97 (SD = .99) and Filipino American adolescents reported a mean score of 1.98 (SD = .92).

Parental emphasis on restricted autonomy had a score range of 0 to 7 with a mean score of 2.13 (SD = 1.73), indicating parents enabled their adolescents to make decisions about a majority of the aspects of their lives (e.g., television, bed time hours, friends). When examining the variable by child nativity and subgroup ethnicity, the levels of parental emphasis on restricted autonomy were also similar to those in the full sample.

For the variable of parental academic expectations, scores ranged from 2 to 10 with an average score of 8.98 (SD = 1.77). This score indicated that the average adolescents felt a considerable level of expectations for college graduation from parents. A review of Tables 6 and 7 indicates no significant subgroup difference was found.

Parent-adolescent relationships. Tables 6 and 7 also present the descriptive statistics for variables regarding parent-adolescent relationship for the total sample and by nativity and subgroup ethnicity. Closeness with mother had a score range of 1 to 5 with a mean of 4.39 (SD = .86), indicating the average Asian American adolescents in the

study felt there was considerable closeness with their mother. In assessing the variable by child nativity, the mean difference was not significant. Both East Asian and Filipino American adolescents reported a high level of closeness with mother (M = 4.44, SD = .74, M = 4.35, SD = .95, respectively). The score range for caring from mother was 2 to 5 with a mean score of 4.89 (SD = .49), indicating adolescents reported a higher level of feeling cared about by their mothers. Group difference by child nativity and subgroup ethnicity was not found. Patterns for the subgroup were also similar to those in the full sample. For the variable "conflict with mother", approximately 70% of the study sample reported they had a serious argument with their mother about their behavior in the past 4 weeks. A review of Tables 6 and 7 indicates no significant subgroup difference was found.

For the variables regarding father-adolescent relationships, closeness with father had a score range of 1 to 5 with a mean of 4.15 (SD = 1.02), suggesting the average Asian American adolescents in the study felt there was considerable closeness with their father. In examining the variable by child nativity and subgroup ethnicity, no significant subgroup difference was found. The score range for caring from father was 1 to 5 with a mean score of 4.71 (SD = .71), indicating that adolescents reported a higher level of perceived caring from their fathers. In assessing the variable by child nativity, the mean difference was not significant. Similarly, a mean difference by subgroup ethnicity was not found. For the variable of conflict with father, approximately 75% of the study sample reported they had a serious argument with their father about their behavior in the

past 4 weeks. Analyses revealed no group difference by child nativity and subgroup ethnicity. Patterns for the subgroups were also similar to those in the full sample.

Mental Health Problems at Wave II

Again, the factor analysis for depression symptoms revealed four indicators: depressed affect, positive affect, psychomotor retardation, and interpersonal affect (see Appendix L). Somatic symptoms had two indicators: somatic depression and somatic symptoms-only (see Appendix M). Table 8 presents by child nativity the mental health problems at Wave II and Table 9 presents the variables by subgroup ethnicity. With respect to depression symptoms, depressed affect ranged from 0 to 18 with a mean score of 4.09 (*SD* = 3.61). This score indicate that the average adolescent in the study reported a low level of depressed affect. Positive affect had a score range of 0 to 12 with a mean of 4.42 (*SD* = 2.60), indicating a low level of positive affect for the full sample. The score range for psychomotor retardation was 0 to 8 with a mean score of 2.46 (*SD* = 1.62), suggesting the average adolescent in the study had a low level of psychomotor retardation. Similarly, adolescents reported a low level of interpersonal affect with a score range of 0 to 8 (*M* = 1.42, *SD* = 1.34). When examining the variables by child nativity, there was no significant difference between foreign-born and U.S.-born adolescent. Both groups reported similarly low degrees of depression symptoms.

In assessing the depression symptoms by subgroup ethnicity, regression analysis found that Filipino adolescents had higher levels of depressed affect and positive affect (shown in Table 9). For example, among East Asian adolescents, the mean score for depressed affect was 3.35 (*SD* = 3.49) while Filipino adolescents had a mean depressed

Table 8

Descriptive Statistics of Mental Health Problems at Wave II, Total and by Child Nativity

Variables		*M*	*SD*	Range
Depressive Symptoms	Depressed affect	4.09	3.61	0-18
	Foreign-born	4.28	3.39	0-18
	U.S.-born	3.91	3.81	0-18
	Positive affect	4.42	2.60	0-12
	Foreign-born	4.68	2.36	0-11
	U.S.-born	4.16	2.79	0-12
	Psychomotor retardation	2.46	1.62	0-8
	Foreign-born	2.52	1.62	0-7
	U.S.-born	2.41	1.61	0-8
	Interpersonal affect	1.42	1.34	0-8
	Foreign-born	1.51	1.34	0-6
	U.S.-born	1.33	1.34	0-8
Somatic symptoms	Somatic depression	5.03	2.59	0-15
	Foreign-born	4.74*	2.65	0-15
	U.S.-born	5.32	2.50	1-15
	Somatic symptoms-only	4.11	2.78	0-14
	Foreign-born	3.92	2.98	0-14
	U.S.-born	4.29	2.55	0-13

Note. All values are weighted.

*Difference between foreign-born and U.S.-born adolescents significant at $p < .05$.

Table 9

Descriptive Statistics of Mental Health Problems at Wave II, Total and by Subgroup Ethnicity

Variables		*M*	*SD*	Range
Depressive Symptoms	Depressed affect	4.09	3.61	0-18
	East Asian	3.35**	3.49	0-18
	Filipino	4.68	3.60	0-18
	Positive affect	4.42	2.60	0-12
	East Asian	3.87**	2.74	0-11
	Filipino	4.86	2.39	0-12
	Psychomotor retardation	2.46	1.62	0-8
	East Asian	2.28	1.62	0-7
	Filipino	2.61	1.60	0-8
	Interpersonal affect	1.42	1.34	0-8
	East Asian	1.24	1.29	0-5
	Filipino	1.56	1.37	0-8
Somatic symptoms	Somatic depression	5.03	2.59	0-15
	East Asian	4.83	2.34	0-15
	Filipino	5.20	2.76	0-15
	Somatic symptoms-only	4.11	2.78	0-14
	East Asian	4.32	2.72	0-14
	Filipino	3.93	2.81	0-14

Note. All values are weighted.

**Difference between East Asian and Filipino American adolescents significant at $p < .01$.

affect score of 4.68 (*SD* = 3.60). The mean difference was significant (*F* (1, 94) = 8.3, *p* <.01). In addition, East Asian adolescents reported a significantly lower level of positive affect (*M* = 3.87, *SD* = 2.74) when compared to the mean score of 4.86 (*SD* = 2.39), *F* (1, 94) = 8.3, *p* <.01) for Filipino adolescents.

For the somatic symptoms, somatic depression had a score range of 0 to 15 with an average score of 5.03 (*SD* = 2.59). This score suggests the average adolescent in the study had a low level of somatic depression. Similarly, adolescents reported a low level of somatic symptoms-only with a score range of 0 o 14 (*M* = 4.11, *SD* = 2.78). A significant mean difference by child nativity was found for somatic depression. The mean score for somatic depression was significantly lower for foreign-born adolescents (*M* = 4.74, *SD* = 2.65) in comparison to U.S.-born adolescents (*M* = 5.32, *SD* = 2.50), *F* (1, 94) = 5.2, *p* <.05). However, significant group difference was not found between East Asian and Filipino adolescents. They both reported similar levels of somatic symptoms.

Bivariate Relationships among Variables

Correlation coefficients were computed to examine the interrelationships among all the path model variables and control variables in this study. This was done in three ways: for the total sample and by child nativity and subgroup ethnicity. The correlations between control variables and path model variables indicate there were some significant correlation coefficients between control variables and path model variables for the full sample and each subgroup (see Appendix N), which confirmed the need to remove the

effect of these control variables from the path model variables before proceeding to the multivariate analysis.

Correlations between Asian Cultural Values and Parent-adolescent Relationships

Maternal emphasis on collectivism was significantly negatively correlated with the parent-adolescent relationship variables of closeness with mother (r = -.29, p <.001), closeness with father (r = -.27, p <.001), caring from mother (r = -.29, p <.001), and caring from father (r = -.24, p <.001) in the total sample (show in Table 10). In addition, restricted autonomy was significantly associated with conflict with mother (r = .14, p <.01) and conflict with father (r = .12, p <.01) in the total sample. As shown in Table 11, the relationship between restricted autonomy and conflict with mother was only significant in the foreign-born sample (r = .16, p <.05). For the U.S.-born sample, the relationships between restricted autonomy and conflict with mother/father were no longer significant. When examining the correlations by subgroup ethnicity (see Table 12), the relationship between restricted autonomy and conflict with mother/father was not significant in the East Asian sample. For the Filipino sample, the relationships between restricted autonomy and conflict with mother (r = .16, p <.05) and conflict with father (r = .15, p <.05) were significant. Lastly, parental academic expectations was significantly positively associated with the level of caring from father (r = .15, p <.01). As Table 11 indicates, the same relationship was found in the foreign-born and U.S.-born samples. When examining the relationships by subgroup ethnicity, parental academic expectations was significantly related to both increased levels of closeness with father

Table 10

Correlations among Path Model Variables, Full Sample

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Maternal emphasis on collectivism	-														
2. Parental emphasis on restricted autonomy	**.10***	-													
3. Parental academic expectations	-.08	-.06	-												
4. Closeness with mother	**-.29*****	.01	.04	-											
5. Caring from mother	**-.29*****	-.06	.06	**.47*****	-										
6. Conflict with mother	.05	**.14****	-.06	**-.12****	-.05										
7. Closeness with father	**-.27*****	.06	.06	**.60*****	**.30*****	**-.12****	-								
8. Caring from father	**-.24*****	-.02	**.15****	**.30*****	**.40*****	**-.14****	**.51*****								
9. Conflict with father	.07	**.12****	-.03	**-.11***	-.03	**.45*****	**-.18*****	**-.11***	-						
10. Depressed affect (W2)	**.14****	.05	-.02	**-.19*****	**-.09***	**.15****	**-.28*****	**-.14****	**.16*****	-					
11. Positive affect (W2)	**.14****	.08	-.05	**-.12****	**-.11***	.02	**-.23*****	**-.14****	**.11***	**.45*****	-				
12. Psychomotor retardation (W2)	**.13****	.02	.01	**-.10***	.00	**.15*****	**-.18*****	-.08	**.18*****	**.57*****	**.25*****	-			
13. Interpersonal affect (W2)	.07	**.13****	-.03	-.05	-.01	**.12****	-.06	-.04	**.13****	**.53*****	**.27*****	**.33*****	-		
14. Somatic depression (W2)	.01	.04	-.07	-.05	.01	**.15****	**-.10***	-.07	**.12***	**.33*****	**.10***	**.37*****	**.19*****	-	
15. Somatic symptoms-only (W2)	.06	.01	.02	**-.17*****	-.06	**.10***	**-.24*****	-.08	**.10***	**.47*****	**.26*****	**.53*****	**.24*****	**.46*****	-

Note. Significant correlation coefficients were bolded.

*$p < .05$, **$p < .05$, ***$p < .001$

Table 11

Correlation Matrix of Study Variables by Child Nativity

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Maternal emphasis on collectivism	-	.13	-.03	**-.29*****	**-.35*****	.08	**-.26*****	**-.14*****	.10	**.16***	**.22*****	.12	**.14***	.03	.06
2. Parental emphasis on restricted autonomy	.08	-	-.11	.03	-.06	.12	.10	-.06	.13	.06	.10	.02	**.19****	.06	-.00
3. Parental academic expectations	**-.13***	-.02	-	-.01	.03	-.12	.06	**.15***	-.10	.05	-.03	.05	.04	-.11	-.00
4. Closeness with mother	**-.28*****	.00	.07	-	**.41*****	**-.15***	**.53*****	.13	-.09	**-.18****	**-.13***	-.06	-.09	-.07	**-.13***
5. Caring from mother	**-.25*****	-.07	.07	**.51*****	-	**-.17***	**.26*****	**.40*****	-.10	**-.14***	**-.16***	-.01	-.06	.04	-.05
6. Conflict with mother	.03	**.16***	-.01	-.10	.04	-	**-.16***	**-.22*****	**.35*****	**.25*****	.04	**.15***	**.17****	**.20****	.08
7. Closeness with father	**-.29*****	.03	.06	**.65*****	**.32*****	-.09	-	**.48*****	**-.18****	**-.31*****	**-.26*****	**-.22*****	-.10	**-.15***	**-.25*****
8. Caring from father	**-.31*****	.01	**.15***	**.41*****	**.39*****	-.08	**.53*****	-	**-.14***	**-.21****	**-.13***	**-.15***	-.11	**-.15***	-.08
9. Conflict with father	.02	.12	.03	**-.12***	.02	**.55*****	**-.19****	-.08	-	**.13***	**.13***	.07	**.13***	**.17***	-.01
10. Depressed affect (W2)	.09	.04	-.08	**-.20****	-.06	.05	**-.26*****	-.09	**.17****	-	**.41*****	**.55*****	**.53*****	**.42*****	**.42*****
11. Positive affect (W2)	.05	.05	-.07	-.10	-.07	-.00	**-.20****	**-.14***	.08	**.49*****	-	**.21****	**.27*****	.12	**.27*****
12. Psychomotor retardation (W2)	.12	.01	-.02	**-.13***	.01	**.15***	**-.14***	-.01	**.26*****	**.57*****	**.29*****	-	**.32*****	**.43*****	**.51*****
13. Interpersonal affect (W2)	-.02	.06	-.10	-.01	.03	.08	-.03	.03	.11	**.52*****	**.26*****	**.32*****	-	**.23*****	**.25*****
14. Somatic depression (W2)	.00	.02	-.04	-.03	-.02	.11	-.05	-.01	.08	**.26*****	.07	**.32*****	**.16****	-	**.46*****
15. Somatic symptoms-only (W2)	.06	.02	.04	**-.21****	-.06	.10	**-.24*****	-.07	**.18****	**.51*****	**.25*****	**.54*****	**.23*****	**.46*****	-

Note. Significant correlation coefficients were bolded.

Correlations of variables for foreign-born adolescents are the below the diagonal. Correlations of variables for U.S.-born adolescents are the above the diagonal

$^{*}p < .05$, $^{**}p < .05$, $^{***}p < .001$

Table 12

Correlation Matrix of Study Variables by Subgroup Ethnicity

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Maternal emphasis on collectivism	-	.10	-.09	**-.31*****	**-.29*****	.04	**-.29*****	**-.22*****	.09	.07	.06	.12	.01	.07	**.13***
2. Parental emphasis on restricted autonomy	.10	-	-.06	-.05	-.06	**.16***	.03	.01	**.15***	.05	.09	-.00	**.17****	.01	-.06
3. Parental academic expectations	-.08	-.07	-	.02	.07	-.02	-.00	.10	-.04	.06	.08	.04	.00	-.02	.10
4. Closeness with mother	**-.25*****	.12	.06	-	**.54*****	-.11	**.62*****	**.30*****	**-.13***	**-.13***	-.04	-.10	.00	-.03	**-.16****
5. Caring from mother	**-.28*****	-.07	.04	**.36*****	-	-.06	**.31*****	**.42*****	-.09	-.03	-.04	.04	.02	-.02	-.03
6. Conflict with mother	.06	.12	-.12	**-.14***	-.04	-	-.11	-.05	**.43*****	**.16***	-.05	**.19****	.12	**.15***	.06
7. Closeness with father	**-.23*****	.12	**.14***	**.56*****	**.26*****	**-.15***	-	**.50*****	**-.19****	**-.24*****	-.12	**-.21*****	.02	-.05	**-.26*****
8. Caring from father	**-.27*****	-.06	**.21****	**.30*****	**.37*****	**-.26*****	**.52*****	-	-.12	-.11	-.06	-.06	.01	-.04	-.06
9. Conflict with father	.02	.08	-.03	-.07	.06	**.51*****	**-.14***	-.10	-	**.18****	.11	**.17****	**.13***	.08	.08
10. Depressed affect (W2)	**.22*****	.04	-.12	**-.28*****	**-.19****	**.14***	**-.32*****	**-.20****	.07	-	**.37*****	**.61*****	**.50*****	**.40*****	**.47*****
11. Positive affect (W2)	**.22****	.07	**-.19****	**-.21****	**-.19****	**.10**	**-.34*****	**-.23*****	.07	**.52*****	-	**.15***	**.19****	.03	**.16****
12. Psychomotor retardation (W2)	**.14***	.06	-.09	-.12	-.05	.10	-.11	-.09	**.17***	**.50*****	**.34*****	-	**.33*****	**.43*****	**.52*****
13. Interpersonal affect (W2)	**.14***	.06	-.09	-.12	-.07	.13	**-.15***	-.11	.08	**.55*****	**.34*****	**.30*****	-	**.19****	**.21*****
14. Somatic depression (W2)	-.07	.09	**-.15***	-.08	.04	**.14***	**-.17***	-.10	**.16***	**.22****	**.16***	**.27*****	**.19****	-	**.48*****
15. Somatic symptoms-only (W2)	-.02	.09	-.06	**-.20****	-.09	.13	**.22*****	-.10	**.13***	**.49*****	**.38*****	**.54*****	**.30*****	**.45*****	-

Note. Significant correlation coefficients were bolded.
Correlations of variables for East Asian adolescents are the below the diagonal. Correlations of variables for Filipino adolescents are the above the diagonal.
$^{*}p < .05$, $^{**}p < .05$, $^{***}p < .001$

(r = .14, p <.05) and caring from father (r = .21, p <.01) in the East Asian sample. However, none of the relationships were significant in the Filipino sample (see Table 12).

Correlations between Asian Cultural Values and Mental Health Problems

Maternal emphasis on collectivism was significantly associated with increased levels of mental health problems, including depressed affect (r = .14, p <.01), positive affect (r = .14, p <.01), and psychomotor retardation (r = .13, p <.01) in the total sample. However, the relationships were no longer significant in the foreign-born sample (see Table 11). Patterns for the East Asian sample were also similar to those in the full sample, while the relationships were no longer significant in the Filipino sample. Instead, emphasis on collectivism was positively associated with somatic symptoms-only (r = .13, p <.05) (see Table 12). Restricted autonomy was significantly related to increased interpersonal affect (r = .13, p <.01). However, the relationship was not significant when foreign-born and East Asian samples were considered alone (see Tables 11 and 12). The correlations between parental academic expectations and mental health problems were not found in the total sample and the foreign-born sample, the U.S.-born sample, and the Filipino sample. However, for the East Asian sample, parental academic expectations was significantly linked to decreased levels of mental health problems, including positive affect of depression (r = -.19, p <.01) and somatic depression (r = -.15, p <.01) (see Table 12).

Correlations between Parent-adolescent Relationships and Mental Health Problems

In general, positive parent-adolescent relationships (e.g., closeness with mother/father and caring from mother/father) were related to decreased levels of mental health problems (e.g., depressed affect, positive affect, psychomotor retardation, interpersonal affect, somatic depression, and somatic symptoms-only) in the full sample. For example, closeness with mother was associated with decreased level of depressed affect (r = -.19, p <.001). Conflict with mother and father were related to increased mental health problems (e.g., depressed affect, positive affect, psychomotor retardation, interpersonal affect, somatic depression, somatic symptoms-only). To bespecific, conflict with father was significantly positively correlated with psychomotor retardation (r = .18, p <.001). When examining the relationships by nativity, caring from mother was significantly associated with decreased levels of positive affect (r = -.14, p <.05) and depressed affect (r = -.16, p <.05) in the U.S.-born sample (see Table 11). However, the correlations were not significant in the foreign-born sample. In addition, conflict with mother was only significantly related to increased psychomotor retardation (r = .15, p <.05) for the foreign-born sample while it was related to higher levels of depressed affect (r = .25, p <.001), psychomotor retardation (r = .15, p <.05), interpersonal affect (r = .17, p <.01), and somatic depression (r = .20, p <.01) for the U.S.-born sample. When examining the correlations by subgroup ethnicity, caring from mother/father had no significant relationships with any of mental health problems in the Filipino sample while they were related to decreased levels of depressed and positive affect of depression in the

East Asian sample (see Table 12). For instance, caring from mother was significantly associated with a low level of depressed affect (r = -.19, p <.01) and positive affect (r = -.19, p <.01). Similarly, caring from father had a negative associated with depressed affect (r = -.20, p <.01) and positive affect (r = -.23, p <.01).

Structural Equation Models

Model Comparison

SEM was applied to test whether there were indirect effects of expectations of Asian cultural values on adolescent mental health problems thorough parent-adolescent relationships, over and above the direct effect of these variables. To obtain a parsimoniously fit model, a series of nested models was tested for the full sample and model fit was compared. Model 1 included all hypothesized relations and corresponded to the model. Model 2 refers to a model in which there is no direct effect of expectations of Asian cultural values on adolescent mental health problems shown in Figure 5.

The fit indices for the two models are presented in Table 13. Results from the full model revealed that none of the direct paths from expectations of Asian cultural values to adolescent mental health were statistically significant, suggesting that expectations of Asian cultural values are not directly associated with adolescent mental health problems. Consequently, Model 2 was determined to best fit the data, which was confirmed by the indices: CFI = 1.000, RMSEA = 0.000.

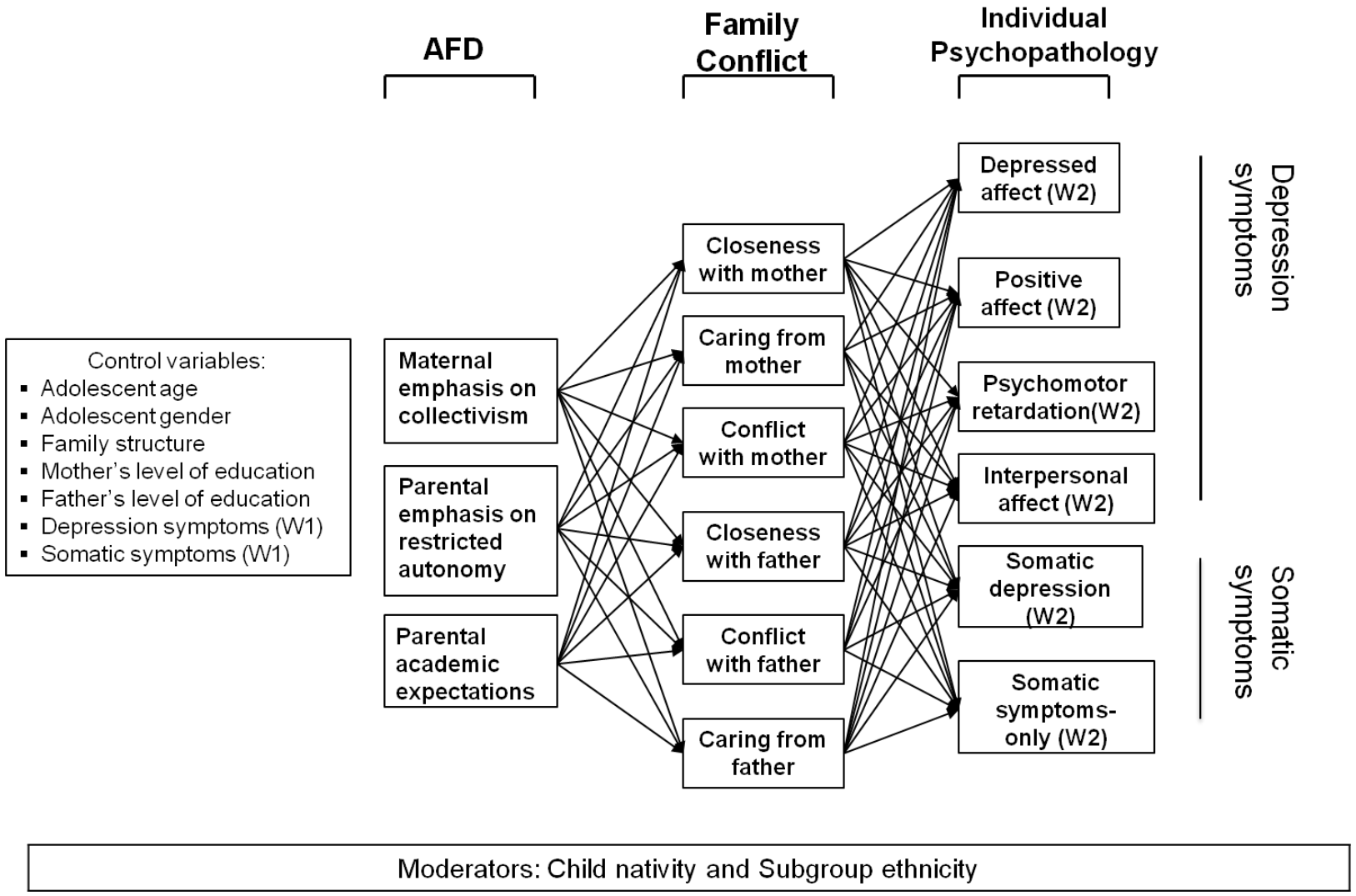

Figure 5. Fitted Model: Model 2 (Direct paths excluded)

Table 13

Summary of Fit Indices for Structural Models

Model	CFI	RMSEA	Chi-Square		
			χ^2	*df*	*p*
Model 1: Full model	1.000	0.000	.000	0	.000
Model 2: Direct paths excluded	1.000	0.000	11.937	18	.851

Structural Equation Model for the Full Sample

Once the model was confirmed, the fitted model was examined for the full sample. The fit of the model was good (model $\chi^2 = 11.937$, $df = 18$, $p = .851$; CFI = 1.000, RMSEA = .000), suggesting that analysis of individual paths is acceptable. Direct and indirect effects of the relationship between variables can be seen in Table 14.

Table 14

Effects of Expectations of Asian Cultural Values and Parent-adolescent Relationships on Mental Health Problems, Full Sample (N= 486)

Parameter estimates	ß	B	SE
Expectations of Asian Cultural Values to Parent-adolescent Relationships			
Collectivism → Closeness with mom	**-.25*****	-.23	04
Collectivism → Caring from mom	**-.30*****	-.16	.02
Collectivism → Conflict with mom	-.02	-.02	.09
Collectivism → Closeness with dad	**-.24*****	-.25	.06
Collectivism → Caring from dad	**-.21*****	-.15	.04
Collectivism → Conflict with dad	.06	.06	.07
Restricted autonomy → Closeness with mom	.06	.03	.03
Restricted autonomy → Caring from mom	.01	.00	.02
Restricted autonomy → Conflict with mom	**.31*****	.21	.06
Restricted autonomy → Closeness with dad	**.19****	.11	.03
Restricted autonomy → Caring from dad	.01	.00	.02
Restricted autonomy → Conflict with dad	**.16***	.10	.05
Academic expectations → Closeness with mom	.05	.02	.03
Academic expectations → Caring from mom	.04	.01	.02
Academic expectations → Conflict with mom	-.12	-.08	.06
Academic expectations → Closeness with dad	**.13***	.08	.03
Academic expectations → Caring from dad	**.22*****	.09	.02
Academic expectations → Closeness with dad	.04	.02	.05

Parameter estimates	β	B	SE
Parent-adolescent Relationships to Mental Health Problems			
Closeness with mom → Depressed affect	.02	.07	.35
Closeness with mom → Positive affect	.12	.37	.22
Closeness with mom → Psychomotor retardation	-.02	-.04	.15
Closeness with mom → Interpersonal affect	-.03	-.04	.09
Closeness with mom → Somatic depression	.00	.00	.26
Closeness with mom → Somatic symptoms-only	-.04	-.13	.20
Caring from mom → Depressed affect	.01	.07	.53
Caring from mom → Positive affect	.02	.09	.39
Caring from mom → Psychomotor retardation	.10	.32	.25
Caring from mom → Interpersonal affect	-.03	-.07	.19
Caring from mom → Somatic depression	.03	.17	.58
Caring from mom → Somatic symptoms-only	.04	.25	.40
Conflict with mom → Depressed affect	.12	.38	.42
Conflict with mom → Positive affect	.00	.00	.35
Conflict with mom → Psychomotor retardation	.05	.07	.26
Conflict with mom → Interpersonal affect	**.29***	.33	.16
Conflict with mom → Somatic depression	.29	.64	.39
Conflict with mom → Somatic symptoms-only	-.09	-.22	.28
Closeness with dad → Depressed affect	-.14	-.48	.27
Closeness with dad → Positive affect	**-.14***	-.36	.19

Parameter estimates	β	B	SE
Closeness with dad → Psychomotor retardation	-.03	-.05	.13
Closeness with dad → Interpersonal affect	.06	.08	.12
Closeness with dad → Somatic depression	.00	.01	.19
Closeness with dad → Somatic symptoms-only	**-.23****	-.61	.21
Caring from dad → Depressed affect	.02	.09	.30
Caring from dad → Positive affect	.02	.09	.27
Caring from dad → Psychomotor retardation	.01	.01	.16
Caring from dad → Interpersonal affect	.04	.08	.14
Caring from dad → Somatic depression	.02	.06	.28
Caring from dad → Somatic symptoms-only	**.11***	.44	.21
Conflict with dad → Depressed affect	-.08	-.26	.44
Conflict with dad → Positive affect	.08	.20	.28
Conflict with dad → Psychomotor retardation	.14	.20	.29
Conflict with dad → Interpersonal affect	-.17	-.21	.17
Conflict with dad → Somatic depression	-.27	-.65	.42
Conflict with dad → Somatic symptoms-only	.09	.22	.32
Indirect pathways[a]			
Collectivism → Closeness with dad → Somatic symptoms-only	**.05***	.16	.06
Restricted autonomy → Closeness with dad → Somatic symptoms-only	**-.04***	-.07	.03
Model fit	χ^2 = 11.937 (*df* = 18, *p* = .851), CFI = 1.000, RMSEA = .000		

Note. Significant coefficients were bolded.
[a]Only significant indirect pathways were included.
*$p < .05$, **$p < .05$, ***$p < .001$

Multigroup Structural Equation Model

The fitted model was examined for each subgroup separately. To assess the moderating effect of child nativity, foreign-born and U.S.-born model were examined independently. In addition, the models for East Asian sample and Filipino sample were assessed to detect the moderating effect of subgroup ethnicity.

Child nativity moderation. The fit for the foreign-born model (χ^2 = 19.409, *df* = 18, *p* = .367; CFI = .996; RMSEA = .018) and the U.S.-born model (model χ^2 = 19.489, *df* = 18, *p* = .362; CFI= .995; RMSEA = .019) satisfied the criteria for good model fit. When the two models were run simultaneously, with equality constraints on 54 parameters, the multi-group model underwent some deterioration in model fit (ΔCFI = .029, ΔRMSEA = .025) from the full sample model. Overall, however, the multi-group model still exhibited a good fit the data. It produced a CFI of .971 and a value for the RMSEA was .025. In order to determine which parameters were found to be invariant across groups, a simultaneous univariate constraint test (Mannet al., 2009) was examined. Results revealed that none of the parameters were significantly different at *p* < 0.05. The actual values of the parameters were very similar across groups. Table 15 shows standardized and unstandardized coefficients of the paths by child nativity and for the constrained model.

Table 15

Effects of Asian Cultural Values and Parent-adolescent Relationships on Mental Health Problems by Child Nativity

Parameter estimates	Foreign-born (n = 250)			U.S.-born (n = 236)			Simultaneous group analysis with equality constraints[a] (n = 450)	
	β	B	SE	β	B	SE	B	SE
Expectations of Asian Cultural Values to Parent-adolescent Relationships								
Collectivism → Closeness with mom	**-.27****	-.27	.08	**-.30****	-.26	.08	**-.24*****	.06
Collectivism → Caring from mom	**-.28*****	-.16	.03	**-.32*****	-.15	.03	**-.09*****	.03
Collectivism → Conflict with mom	.05	.06	.11	-.07	-.10	.13	-.05	.16
Collectivism → Closeness with dad	**-.28****	-.29	.08	**-.32****	-.36	.11	**-.25****	.08
Collectivism → Caring from dad	**-.30*****	-.23	.06	-.10	-.07	.06	**-.21*****	.05
Collectivism → Conflict with dad	.13	.15	.10	-.00	-.00	.15	.07	.12
Restricted autonomy → Closeness with mom	-.04	-.02	.05	-.02	-.01	.03	.02	.03
Restricted autonomy → Caring from mom	.03	.01	.02	-.01	-.00	.03	.02	.01

Parameter estimates	Foreign-born (n = 250)			U.S.-born (n = 236)			Simultaneous group analysis with equality constraints[a] (n = 450)	
	β	B	SE	β	B	SE	B	SE
Restricted autonomy → Conflict with mom	.18	.12	.08	**.36****	.26	.09	**.17***	.07
Restricted autonomy → Closeness with dad	.11	.07	.05	.02	.01	.04	.07	.03
Restricted autonomy → Caring from dad	.11	.05	.04	-.03	-.01	.03	.00	.02
Restricted autonomy → Conflict with dad	.12	.08	.07	**.43****	.30	.12	.13	.06
Academic expectations → Closeness with mom	.14	.08	.05	-.04	-.02	.04	-.01	.03
Academic expectations → Caring from mom	.03	.01	.04	.06	.01	.01	.01	.01
Academic expectations → Conflict with mom	.03	.02	.09	-.10	-.07	.07	**-.19****	.07
Academic expectations → Closeness with dad	.18	.12	.07	.12	.06	.04	.04	.03
Academic expectations → Caring from dad	**.01****	.09	.04	**.22****	.07	.03	**.09*****	.02
Academic expectations → Conflict with dad	.15	.11	.10	-.13	-.08	.06	-.04	.06

Parameter estimates	Foreign-born (n = 250)			U.S.-born (n = 236)			Simultaneous group analysis with equality constraints[a] (n = 450)	
	β	B	SE	β	B	SE	B	SE
Parent-adolescent Relationships to Mental Health Problems								
Closeness with mom → Depressed affect	.57	2.03	3.43	.14	.14	.57	2.37	1.52
Closeness with mom → Positive affect	.23	.58	1.13	.84	.84	.59	1.68	.96
Closeness with mom → Psychomotor retardation	.94	1.59	2.25	.09	.09	.26	.06	.51
Closeness with mom → Interpersonal affect	.60	.84	1.21	-.14	-.14	.27	.25	.44
Closeness with mom → Somatic depression	-.06	-.18	1.02	.28	.28	.43	-1.22	.90
Closeness with mom → Somatic symptoms-only	.11	.35	1.42	.01	.01	.34	.29	.75
Caring from mom → Depressed affect	-.40	-2.44	5.17	1.11	1.11	.81	-2.46	1.85
Caring from mom → Positive affect	.09	.36	1.14	-.79	-.79	.75	-.95	1.16
Caring from mom → Psychomotor retardation	-.61	-1.76	3.64	.42	.42	.51	.38	.75
Caring from mom → Interpersonal affect	-.45	-1.07	1.88	.03	.03	.46	-.02	.54

Parameter estimates	Foreign-born (*n* = 250)			U.S.-born (*n* = 236)			Simultaneous group analysis with equality constraints[a] (*n* = 450)	
	β	B	SE	β	B	SE	B	SE
Caring from mom → Somatic depression	-.01	-.06	1.69	.05	.05	.85	1.94	1.36
Caring from mom → Somatic symptoms-only	-.08	-.42	1.78	.06	.06	.59	-.16	1.15
Conflict with mom → Depressed affect	.68	2.07	5.02	**.93***	.93	.46	.16	.43
Conflict with mom → Positive affect	-.08	-.17	1.37	-.44	-.44	.49	.14	.29
Conflict with mom → Psychomotor retardation	1.26	1.82	3.14	-.10	-.21	.26	-.08	.17
Conflict with mom → Interpersonal affect	1.25	1.49	1.79	.29	.29	.17	**.48****	.17
Conflict with mom → Somatic depression	.29	.68	1.33	-.35	-.35	.35	.32	.35
Conflict with mom → Somatic symptoms-only	.19	.51	2.00	-.31	-.31	.30	-.29	.27
Closeness with dad → Depressed affect	.42	1.36	3.48	-.62	-.62	.54	-3.01	1.58
Closeness with dad → Positive affect	.01	.01	.79	**-1.48***	-1.48	.61	-1.61	.97
Closeness with dad → Psychomotor retardation	.80	1.23	2.27	-.21	-.21	.26	-0.02	.54

Parameter estimates	Foreign-born (n = 250)			U.S.-born (n = 236)			Simultaneous group analysis with equality constraints[a] (n = 450)	
	β	B	SE	β	B	SE	B	SE
Closeness with dad → Interpersonal affect	.58	.74	1.31	.01	.01	.32	-.27	.47
Closeness with dad → Somatic depression	-.04	-.09	.82	-.47	-.47	.43	1.32	.98
Closeness with dad → Somatic symptoms-only	-.10	-.27	1.41	-.29	-.29	.39	-.90	.79
Caring from dad → Depressed affect	-.83	-3.69	6.86	.31	.31	.73	3.32	1.85
Caring from dad → Positive affect	-.15	-.48	1.83	.94	.94	.85	1.38	1.05
Caring from dad → Psychomotor retardation	-1.30	-2.75	4.32	.08	.08	.41	.09	.61
Caring from dad → Interpersonal affect	-.83	-1.46	2.45	.16	.16	.36	.60	.53
Caring from dad → Somatic depression	.11	.38	1.77	.29	.29	.65	-.99	1.11
Caring from dad → Somatic symptoms-only	-.07	-.27	2.72	-.06	-.06	.42	.55	.96
Conflict with dad → Depressed affect	-.81	-2.36	5.32	-.20	-.20	.49	.85	.57
Conflict with dad → Positive affect	.07	.14	1.41	.87	.87	.46	.33	.33

Parameter estimates	Foreign-born (n = 250)			U.S.-born (n = 236)			Simultaneous group analysis with equality constraints[a] (n = 450)	
	β	B	SE	β	B	SE	B	SE
Conflict with dad → Psychomotor retardation	-1.17	-1.61	3.37	.30	.30	.22	**.50****	.19
Conflict with dad → Interpersonal affect	-1.29	-1.48	1.93	-.01	-.01	.19	-.19	.19
Conflict with dad → Somatic depression	-.33	-.74	1.27	.50	.50	.36	-.39	.42
Conflict with dad → Somatic symptoms-only	-.16	-.40	2.15	.21	.21	.32	.39	.31
Model fit	χ^2 = 19.409 (df = 18, p = .367), CFI = .996, RMSEA = .018			χ^2 = 19.489 (df = 18, p = .362), CFI= .995, RMSEA = .019			χ^2 = 171.498 (df = 150, p = .110), CFI = .971, RMSEA = .025	

Note. Significant coefficients were bolded.

[a]Missing cases (n = 36) were excluded.

*p < .05, **p < .05, ***p < .001

Subgroup ethnicity moderation. The fit for the East Asian model (model χ^2 = 14.141, *df* = 18, *p* = .720; CFI = 1.000; RMSEA = .000) and the Filipino model (model χ^2=17.025, *df* = 18, *p* = .521; CFI = 1.000; RMSEA = .000) met the criteria for good model fit. When the two models were run simultaneously, with equality constraints on 54 parameters, the multi-group model still exhibited a good fit for the data. It produced a CFI of 1.000 and a value for the RMSEA was .000. In order to examine which parameters were different across groups, the simultaneous univariate constraint test was utilized. Results revealed that none of the parameters were significantly different at $p < 0.05$. The actual values of the parameters were very similar across groups. Table 16 shows standardized and unstandardized coefficients of the paths by subgroup ethnicity and for the constrained model.

Table 16

Effects of Asian Cultural Values and Parent-adolescent Relationships on Mental Health Problems by Subgroup Ethnicity

Parameter estimates	East Asian (n = 222)			Filipino (n = 264)			Simultaneous group analysis with equality constraints[a] (n = 450)	
	β	B	SE	β	B	SE	B	SE
Asian Cultural Values to Parent-adolescent Relationships								
Collectivism → Closeness with mom	**-.24****	-.18	.06	**-.31*****	-.31	.08	**-.29*****	.06
Collectivism → Caring from mom	**-.30*****	-.14	.04	**-.28****	-.16	.06	**-.14*****	.04
Collectivism → Conflict with mom	-.01	-.01	.16	-.01	-.02	.15	-.02	.12
Collectivism → Closeness with dad	-.15	-.15	.08	**-.32*****	-.36	.10	**-.37*****	.09
Collectivism → Caring from dad	**-.17***	-.13	.06	**-.21****	-.16	.06	**-.18*****	.04
Collectivism → Conflict with dad	.04	.05	.17	.05	.06	.12	.06	.10
Restricted autonomy → Closeness with mom	.07	.03	.04	.01	.00	.05	.03	.04
Restricted autonomy → Caring from mom	-.08	-.02	.03	.10	.03	.04	.03	.02
Restricted autonomy → Conflict with mom	**.29***	.22	.08	**.26***	.19	.08	**.16****	.06

Parameter estimates	East Asian (n = 222)			Filipino (n = 264)			Simultaneous group analysis with equality constraints[a] (n = 450)	
	β	B	SE	β	B	SE	B	SE
Restricted autonomy → Closeness with dad	.16	.10	.05	.22	.13	.07	.04	.04
Restricted autonomy → Caring from dad	.01	.01	.04	.05	.02	.02	.00	.02
Restricted autonomy → Conflict with dad	**.33****	.26	.10	.15	.09	.07	.09	.06
Academic expectations → Closeness with mom	.11	.04	.03	.08	.04	.06	.02	.03
Academic expectations → Caring from mom	-.01	-.00	.01	.22	.07	.05	.01	.01
Academic expectations → Conflict with mom	-.11	-.08	.07	.01	.01	.10	-.08	.06
Academic expectations → Closeness with dad	**.29*****	.15	.04	.11	.07	.07	**.12****	.04
Academic expectations → Caring from dad	**.29*****	.11	.03	**.22****	.09	.04	**.10*****	.02
Academic expectations → Closeness with dad	-.02	-.02	.07	.06	.04	.09	.00	.05
Parent-adolescent Relationships to Mental Health Problems								
Closeness with mom → Depressed affect	-.17	-.81	.73	.13	.48	1.78	-2.03	1.36

Parameter estimates	East Asian (n = 222)			Filipino (n = 264)			Simultaneous group analysis with equality constraints[a] (n = 450)	
	β	B	SE	β	B	SE	B	SE
Closeness with mom → Positive affect	-.01	-.05	.64	-.33	-.83	1.60	-1.36	1.09
Closeness with mom → Psychomotor retardation	-.04	-.09	.32	.60	1.01	.93	-.07	.35
Closeness with mom → Interpersonal affect	-.13	-.23	.18	.02	.03	.51	-.36	.38
Closeness with mom → Somatic depression	.22	.72	1.24	.35	1.01	1.59	-.40	.74
Closeness with mom → Somatic symptoms-only	-.04	-.13	.78	.26	.78	.95	-.56	.77
Caring from mom → Depressed affect	-.07	-.52	.84	.10	.68	2.89	1.49	1.66
Caring from mom → Positive affect	.05	.30	.99	.48	2.18	2.62	1.60	1.28
Caring from mom → Psychomotor retardation	.07	.24	.50	-.41	-1.24	1.92	.42	.39
Caring from mom → Interpersonal affect	-.07	-.19	.33	-.04	-.10	.92	.56	.42

Parameter estimates	East Asian (n = 222)			Filipino (n = 264)			Simultaneous group analysis with equality constraints[a] (n = 450)	
	β	B	SE	β	B	SE	B	SE
Caring from mom → Somatic depression	.19	.98	1.91	-.25	-1.30	2.81	.84	.91
Caring from mom → Somatic symptoms-only	.14	.83	1.18	-.22	-1.15	1.64	.47	.72
Conflict with mom → Depressed affect	-.51	-1.40	1.78	.38	1.04	1.68	1.79	1.05
Conflict with mom → Positive affect	-.74	-1.57	2.03	-.51	-.94	2.04	1.07	.79
Conflict with mom → Psychomotor retardation	-.14	-.18	1.04	1.02	1.25	1.08	.20	.25
Conflict with mom → Interpersonal affect	.17	.17	.69	.42	.44	.53	.45	.29
Conflict with mom → Somatic depression	1.82	3.33	3.94	1.17	2.49	1.66	1.10	.61
Conflict with mom → Somatic symptoms-only	.74	1.57	2.38	.12	.25	.96	.31	.56
Closeness with dad → Depressed affect	.04	.16	.61	-.02	-.08	1.78	2.09	1.70
Closeness with dad → Positive affect	-.12	-.33	.79	.53	1.26	1.50	2.07	1.38
Closeness with dad → Psychomotor retardation	.10	.16	.37	-.60	-.94	.98	.02	.43

Parameter estimates	East Asian (n = 222)			Filipino (n = 264)			Simultaneous group analysis with equality constraints[a] (n = 450)	
	β	B	SE	β	B	SE	B	SE
Closeness with dad → Interpersonal affect	-.03	-.04	.24	.23	.30	.51	.41	.48
Closeness with dad → Somatic depression	-.66	-1.54	1.31	-.03	-.09	1.60	.51	.90
Closeness with dad → Somatic symptoms-only	-.26	-.72	.82	**-.59**[*]	-1.63	.87	.07	.95
Caring from dad → Depressed affect	-.20	-.97	1.13	-.24	-1.25	1.45	-1.82	1.47
Caring from dad → Positive affect	-.27	-1.02	1.39	-.30	-1.05	1.32	-2.03	1.29
Caring from dad → Psychomotor retardation	-.15	-.33	.71	.19	.43	1.19	-.02	.37
Caring from dad → Interpersonal affect	.07	.13	.44	-.14	-.28	.56	-.27	.41
Caring from dad → Somatic depression	.75	2.43	2.61	-.12	-.50	1.83	-.33	.84
Caring from dad → Somatic symptoms-only	.33	1.25	1.61	**.36**[*]	1.45	.73	.00	.80
Conflict with dad → Depressed affect	.51	1.35	1.55	-.39	-1.25	1.64	-1.78	1.13
Conflict with dad → Positive affect	.65	1.36	1.80	.39	.83	2.02	-.96	.86

Parameter estimates	East Asian (n = 222)			Filipino (n = 264)			Simultaneous group analysis with equality constraints[a] (n = 450)	
	β	B	SE	β	B	SE	B	SE
Conflict with dad → Psychomotor retardation	.32	.39	.89	-.65	-.94	1.15	.04	.28
Conflict with dad → Interpersonal affect	-.06	-.06	.60	-.33	-.41	.54	-.40	.31
Conflict with dad → Somatic depression	-1.54	-2.75	3.27	-1.00	-2.48	1.66	-1.10	.65
Conflict with dad → Somatic symptoms-only	-.58	-1.21	2.06	-.10	-.24	.96	-.31	.63
Indirect pathway[b]								
Collectivism → Closeness with dad → Somatic symptoms-only				**.19**[*]	.58	.26		
Model fit	χ^2 = 14.141 (df = 18, p = .720), CFI = 1.000, RMSEA = .000			χ^2=17.025 (df = 18, p = .521), CFI = 1.000 RMSEA = .000			χ^2=142.430 (df = 150, p = .658), CFI=1.000, RMSEA = .000	

Note. Significant coefficients were bolded.

[a]Missing cases (n = 36) were excluded.

[b]Only significant indirect pathway was included.

[*]$p < .05$, [**]$p < .05$, [***]$p < .001$

Tests of Hypothesis 1: Predicting Parent-adolescents Relationships from Expectations of Adherence to Asian Cultural Values

The first hypothesis predicted that expectations of adherence to Asian cultural values (e.g., maternal emphasis on collectivism, parental emphasis on restricted autonomy, parental academic expectations) would be linked to lower parent-adolescent closeness/caring (e.g., closeness with mother/father and caring from mother/father) (*Hypothesis 1a*) and greater parent-adolescent conflict (e.g., conflict with mother/father) (*Hypothesis 1b*) at Wave I. Results from the full sample model (Table 14) indicate that partial empirical support exists for a relationship between expectations of adherence to Asian values and parent-adolescent relationships.

Results revealed findings that occasionally varied by gender of the parent. Specifically, maternal emphasis on collectivism was associated with lower levels of closeness with mother (β = -.25, p <. 001), caring from mother (β = -.30, p <. 001), closeness with father (β = -.24, p <. 001), and caring from father (β = -.21, p <. 001). Restricted autonomy was found to be linked to greater possibility of parent-adolescent conflict. The path from restricted autonomy to conflict with mother (β = .31, p <. 001) was positive and significant. However, contrary to Hypothesis 1a, it was found that restricted autonomy was associated with a higher level of closeness with father and conflict with father (β = .19, p <. 01). In addition, parental academic expectations was associated with higher levels of closeness with father (β = .13, p <. 05) and caring from father (β = .22, p <. 001). Thus, Hypothesis 1 was partially supported.

Tests of Hypothesis 2: Predicting Mental Health Problems from Parent-adolescent Relationships

Hypothesis 2 stated that greater parent-child closeness/caring (e.g., closeness with mother/father and caring from mother/father) would lead to fewer reported mental health problems (e.g., depressed affect, positive affect, psychomotor retardation, interpersonal affect, somatic depression, and somatic symptoms-only) at Wave II (*Hypothesis 2a*). Furthermore, parent-adolescent conflict (e.g., conflict with mother/father) would lead to greater mental health problems (e.g., depressed affect, positive affect, psychomotor retardation, interpersonal affect, somatic depression, and somatic symptoms-only) at Wave II (*Hypothesis 2b*). As shown in Table 14, results revealed partial support for Hypothesis 2. For example, as expected closeness with father was significantly associated with lower levels of positive affect ($\beta = -.14$, $p < .05$) and conflict with mother was linked to a higher level of interpersonal affect ($\beta = .29$, $p < .05$), supporting Hypotheses 2a and 2b. In addition, closeness with father was significantly associated with decreased somatic symptoms-only ($\beta = -.23$, $p < .01$), supporting Hypothesis 2a. However, caring from father was found to be linked to greater somatic symptoms-only ($\beta = .11$, $p < .05$), contradicting Hypothesis 2a. Taken together, Hypothesis 2 was partially supported.

Tests of Hypothesis 3: Mediating Effect of Parent-adolescent Relationships

Hypothesis 3 asserted that parent-adolescent relationships as measured by closeness with mother/father, caring from mother/father, and conflict with mother/father mediate the relationship between expectations of adherence to Asian cultural values and

adolescent mental health problems (e.g., depressed affect, positive affect, psychomotor retardation, interpersonal affect, somatic depression, and somatic symptoms-only). Results of indirect pathways from Asian values to adolescent mental health (shown in Table 14) suggest that Hypothesis 3 was partially supported. The first significant mediating pathway was from maternal emphasis on collectivism to closeness with father to somatic symptoms-only ($\beta = .05$, $p <. 05$) The second significant mediating pathway was from restricted autonomy to closeness with father to somatic symptoms-only ($\beta = -.04$, $p <. 05$). Overall, there were two significant mediating pathways for the full sample, supporting Hypothesis 3. The findings indicate that closeness with father has a buffering effect on the relationship between expectations of Asian cultural values and adolescent mental health problems. If adolescents perceive a high level of closeness with father, they are less likely to be affected by the expectations of Asian cultural values in their mental health.

Tests of Hypothesis 4: Moderating Effect of Child Nativity

Hypothesis 4 stated that the mediational model is stronger for U.S.-born adolescents when compared to their foreign-born counterparts. To examine parameter differences between foreign born and U.S.-born adolescents, a simultaneous univariate constraint test was utilized for each structural path. Computed z-scores indicate that out of 54 parameters, none of them was statistically different between groups. Therefore, Hypothesis 4 was not supported. The absence of a moderational effect suggests that the meditational model (tested in Hypothesis 3) works similarly for U.S.-born and foreign-born adolescents in this sample.

Tests of Hypothesis 5: Moderating Effect of Subgroup Ethnicity

Hypothesis 5 predicted subgroup (East Asians vs. Filipino) differences in the relationships between variables. To explore invariance across subgroup ethnicity, the simultaneous univariate constraint test was conducted. The results suggest that none of the 54 structural paths was significantly different between groups. Hypothesis 5 was not supported. This suggests that the family processes tested work summarily across subgroup ethnicity.

Summary of Results

The following table provides a summary of the results for this study.

Table 17

Summary of Results

Hypothesis	**Results**
H1a. Expectations of adherence to Asian cultural values (e.g., maternal emphasis on collectivism, restricted autonomy, academic expectations) will be linked to lower parent-adolescent closeness/caring (e.g., closeness with mother/father and caring from mother/father)	Partially supported. Maternal emphasis on collectivism was associated with lower levels of closeness with mother, caring from mother, closeness with father, and caring from father.
H1b. Expectations of adherence to Asian cultural values (e.g., maternal emphasis on collectivism, restricted autonomy, academic expectations) will be associated with greater parent-adolescent conflict (e.g., conflict with mother/father).	Partially supported. Restricted autonomy was found to be linked to greater possibility of conflict with mother.
H2a. Greater parent-adolescent closeness/caring (e.g., closeness with mother/father and caring from mother/father) will lead to fewer mental health problems (e.g., depressed affect, positive affect, psychomotor retardation, interpersonal affect, somatic depression, and somatic symptoms-only) at Wave II.	Partially supported. Closeness with father was significantly associated with lower levels of positive affect of depression symptoms and somatic symptoms-only.
H2b. Parent-adolescent conflict (e.g., conflict with mother/father) leads to greater mental health problems (e.g., depressed affect, positive affect, psychomotor retardation, interpersonal affect, somatic depression, and somatic symptoms-only) at Wave II.	Partially supported. Conflict with mother was linked to a higher level of interpersonal affect of depression symptoms.

Hypothesis	Results
H3. Parent-adolescent relationships as measured by closeness with mother/father, caring from mother/father, and conflict with mother/father will mediate the relationship between expectations of adherence to Asian values and adolescent mental health problems (e.g., depressed affect, positive affect, psychomotor retardation, interpersonal affect, somatic depression, and somatic symptoms-only).	Partially supported. Closeness with father mediated the relationship between maternal emphasis on collectivism and somatic symptoms-only. Also, closeness with father mediated the relationship between restricted autonomy and somatic symptoms-only.
H4. The mediational model will be stronger for U.S.-born adolescents when compared to foreign-born counterparts.	Not supported.
H5. Subgroup (East Asians vs. Filipino) differences will be found in the relationships between variables.	Not supported.

Chapter 5: Discussion

This study sought to examine the applicability of the Acculturative Family Distancing Model (AFD) and symbolic interactionism to a national sample of Asian American adolescents. Moreover, it also sought to test whether child nativity and subgroup ethnicity moderated the proposed effects after controlling for age, gender, family structure, mother's level of education, father's level of education, and mental health problems (e.g., depression symptoms and somatic symptoms) at Wave I. Study results revealed support for the proposed model but little evidence for moderational effects. Those findings and other specific details related to the results will be discussed in the sections to follow.

Effects of Asian Cultural Values on Parent-adolescent Relationships

It was proposed that expectations of adherence to Asian cultural values (e.g., maternal emphasis on collectivism, parental emphasis on restricted autonomy, and parental academic expectations) would be associated with lower parent-adolescent closeness and caring (e.g., closeness with mother/father and caring from mother/father) and greater parent-adolescent conflict (e.g., conflict with mother/father). This study found that expectations of Asian cultural values from parents (e.g., maternal emphasis on collectivism, restricted autonomy, and parental academic expectations) were associated with lower parent-adolescent closeness and caring and greater parent-adolescent conflict. These findings are consistent with the empirical literature on the effects of expectations of Asian cultural values on parent-adolescent relationships in Asian American families

(Juang et al., 2007; Zhou, 1997; Qin et al., 2008) and with the Hwang's (2006) AFD model.

Moreover, the results are also consistent with symbolic interaction theory but in specific ways. Adolescents' perceived parental expectations of collectivism and restricted autonomy may conflict with the host culture, which emphasizes independence and individual autonomy. The conflicting expectations from the ethnic and host culture may lead to role strain and negative parent-adolescent relationships (e.g., increased conflict and decreased closeness) (Kwak, 2003; Phinney & Ong, 2002). However, the results indicated different gender patterns in terms of how parental expectations of Asian cultural values affect parent-adolescent relationships.

It was hypothesized in the present study and has been found several previous studies that restricted autonomy (Juang et al., 2007) and parental academic expectation (Qin et al., 2008; Tsai-Chae & Nagata, 2008; Kang et al., 2010) were linked to a lower level of parent-adolescent closeness and caring and a greater level of parent-adolescent conflict. Consistent with the hypothesis and prior findings, results from the present study suggests restricted autonomy increased adolescents' reported conflict with their mothers.

The results from the present study did not support the hypothesis that restricted autonomy and academic expectations would lead to lower father-adolescent closeness and greater father-adolescent conflict. Contrary to the hypothesis, restricted autonomy was related to increased level of closeness with father. Moreover, parental academic expectations were linked to higher levels of closeness with father and caring from father.

One possible reason why restricted autonomy was associated with greater closeness with father might be male gender role expectations. Traditional Asian society is mainly governed by patriarchy, which defines a clear distinction between roles of the father and mother within a family (Qin & Chang, 2012). According to this norm, the father is the master of the family who makes decisions and the one with final authority in family matters, whereas the mother is the symbol of kindness (Kim & Wong, 2002). In parenting practices, fathers take a disciplinary role that inculcates achievement values in their children, whereas mothers develop emotional relationships with their children (Chao & Tseng, 2002). Several empirical studies have indicated the different roles of parents in child development in Asian heritage families (Chen, Liu, & Li, 2000; Choo & Shek, 2013; Nguyen & Cheung, 2009; Song, 2004). For example, a study of Chinese and Korean families with children suggested the domains of father engagement were more confined to education-related matters (Song, 2004). In addition, Japanese adolescents perceived their mothers as being more supportive than fathers (Trommsdorff & Iwawaki, 1989).

The distinctive roles of fathers and mothers in Asian heritage families might be associated with the result regarding the relationship between parental restricted autonomy and father-adolescent relationship. Fathers are expected to exert high levels of control and authority from a cultural standpoint. Moreover, some aspects of parental strictness may be considered parental concern, caring, or involvement for Asians (Chao, 1994; Chen et al., 2000). Therefore, restricted autonomy might be perceived as paternal involvement, increasing adolescents' perception of closeness with father. However,

academic expectation was not related to mother-adolescent relationships due to the fact that mothers role are mostly confined to children's emotional well-being (Chao & Tseng, 2002; Kim & Wong, 2002).

In addition, Hwang's AFD model suggests that discrepancy in cultural values increases family conflict. Based on the model, it was expected that parents' greater emphasis on academic success would lead to increased family conflict and decreased parent-adolescent closeness. Contrary to the hypothesis, findings of this present study revealed that adolescents' perceptions of their parent's academic expectations were related to both greater closeness with their fathers and greater caring from fathers. Surprisingly, adolescents' perceptions of their parents' academic expectations were not significantly associated with relationships with their mothers. Results indicated an unexpected gender difference in the relationship between adolescents' parental academic expectations and their perceptions of the relationship with their parents, which were not specified in the AFD model. As noted earlier in this chapter, this finding aligns with role expectations for mothers and fathers in the Asian cultural context. Since fathers are expected to provide help their children in academic achievement (Chao & Tseng, 2002; Kim & Wong, 2002; Song, 2004), parental academic expectations may be interpreted as father's caring for them. This finding implies the need for considering the role of gender in the AFD model. Future studies should consider the role of parent gender in a more explicit manner than the current theory proscribes. Future studies are revealed to unpack whether Asian American youth interpret these constructs in the same way. Qualitative studies should be useful in that regard.

Findings related to gender role also align with symbolic interaction theory which emphasizes cultural contexts for role expectations. Asian American adolescents may be influenced by Asian cultural values which have distinct role expectations by gender. With the influence of the cultural context, cultural values might have different impacts on parent-adolescent relationships by parental gender. Previous empirical studies on Asian American adolescents suggest different roles for father and mother in adolescent adjustment (Chen et al., 2000; Kim et al., 2009; Kim & Park, 2011). For example, maternal warmth was associated with children's emotional adjustment, while paternal warmth was associated with children's academic achievement in Chinese high school students (Chen et al., 2000). Results in this study were consistent with the different gender roles in Asian heritage families that mothers are expected to provide emotional support for children while fathers are expected to facilitate children's academic success.

Effects of Parent-adolescent Relationships on Adolescent Depression Symptoms and Somatic Symptoms

It was hypothesized that greater parent-adolescent closeness (e.g., closeness with mother/father and caring from mother/father) would lead to fewer depression symptoms and somatic symptoms (e.g., depressed affect, positive affect, psychomotor retardation, interpersonal affect, somatic depression, and somatic symptoms-only). As hypothesized, a positive aspect of parent-adolescent relationships (e.g., closeness with father) was associated with decreased mental health problems in the form of (1) reduced depression symptoms as measured by lower depressed affect, positive affect, retardation, and interpersonal affect and (2) reduced somatic symptoms as measured by lower somatic

depression and somatic symptoms-only. This result is consistent with previous research showing the protective role of parent-adolescent bonding against adolescents' mental health problems (Arbona & Power, 2003; Hannum & Dvorak, 2004; Maffini et al., 2011; Willgerodt, 2008). In addition, it was expected that parent-adolescent conflict (e.g., conflict with mother/father) would lead to greater depression symptoms and somatic symptoms (e.g., depressed affect, positive affect, psychomotor retardation, interpersonal affect, somatic depression, and somatic symptoms-only). As expected, a negative aspect of parent-adolescent relationship (e.g., conflict with mother) was related to greater mental health problem in the form of greater depression symptoms as measured by greater interpersonal affect. This result is consistent with findings from previous studies (Forsmoso et al., 2000; Greenberger et al., 2000; Hannum & Dvorak, 2004; Lee & Liu, 2001) and the AFD model that suggests family conflict leads to individual psychopathology.

However, contrary to predictions and AFD theory, results from the present study indicated that caring from father was linked to increased somatic symptoms-only whereas closeness with father led to decreased somatic symptoms-only. The tenants of AFD would argue that family conflict increases adolescent mental health problems, which also suggests that parent-adolescent closeness decreases adolescent mental health problems. The result that caring from father was only associated with somatic symptoms as measured by somatic symptoms-only can be explained with the cultural expression of psychological distress among Asian Americans. Somatic complaints are a common way that Asian Americans express distress (Lin & Cheung, 1999; Maffini et al., 2011) and

thus may be more likely to be revealed in this non-clinical sample of Asian American adolescents. These results likely reflect the non-clinical nature of the sample in which levels of psychological distress were generally low.

Another possible explanation for the fact that caring from father resulted in more somatic symptoms-only might be related to how "caring" was interpreted for the Asian American adolescents in this nonclinical sample. Caring from mother/father was measured with the item "how much do you think your mother/father cares about you?" The concept of "caring" can be different from emotional closeness with parents, which was assumed to function inversely with family conflict. In Asian heritage families, parents care for their children by providing continual and instrumental support in exchange for children carrying out their parents' expectations and wishes (Chao, 1994; Chao & Kaeochinda, 2010; Kim & Rohner, 2002; Park & Chelsa, 2007). Rather than constant and emotional support from parents, caring from parents implies that children need to comply with parents' rule. Therefore, from the adolescents' perspective, caring from parents could be a burden for children, causing mental health problems.

Surprisingly, this study found that mother-adolescent relationships were relatively less influential in adolescent mental health. The only significant relationship was that conflict with mother increased adolescent depression symptoms as measured by interpersonal affect. One possible explanation lies in the differential roles of mothers and fathers in Asian heritage families. Since mothers are expected to consistently provide emotional support and be generally warmer than fathers (Chen et al., 2000; Ho, 1989; Russell et al., 2010), conflict with mother may lead to depression symptoms.

However, emotional closeness and caring in the daily lives are expected for mothers, maternal support may not cause changes in adolescent depression symptoms and somatic symptoms. Another possible explanation is that because mothers are more involved and more available than fathers, parenting attributes of mothers may be less salient in the minds of adolescents (Forehand &Nousiainen, 1993; Ang, 2006). Finally, this sample was a general rather than clinical sample. The patterns of relationships may be different in a clinical sample.

The Mediating Effects of Parent-adolescent Relationships between Asian Cultural Values and Somatic Symptoms-Only

It was proposed that parent-adolescent relationships as measured by closeness with mother/father, caring from mother/father, and conflict with mother/father mediate the relationship between expectations of adherence to Asian cultural values (e.g., maternal emphasis on collectivism, restricted autonomy, and parental academic expectations) and adolescent mental health problems (e.g., depressed affect, positive affect, psychomotor retardation, interpersonal affect, somatic depression, and somatic symptoms-only). Consistent with the hypothesis, this study found that parent-adolescent relationships (e.g., closeness with father) mediated the association between expectations of Asian cultural values (e.g., emphasis on collectivism and restricted autonomy) and one indicator of mental health problem, somatic symptoms-only. This result is consistent with previous studies with Asian American adolescents suggesting that parent-child closeness serve as a protective factor for youth adjustment as measured by problem behavior (Choi et al., 2008) and somatic symptoms (Maffini et al., 2011).

However, the mediating effect was significant for the relationship with father, not the relationship with mother. This finding seems to be consistent with a study conducted by Kim and Park (2011) that indicated only open communication with father had a moderating effect in the relationship between enculturation gap-distress and internalizing problems in Korean American adolescents while mother-adolescent communication had no direct or moderating effect on internalizing problems. They concluded that in adolescent children might turn to their fathers for emotional support and connection when they experience a stressful gap in ethnic cultures with their mothers because fathers tend to be more acculturated than mothers. In addition, Kim et al.'s (2009) study demonstrated that only the father's negative paternal parenting practices (e.g., less monitoring, less inductive reasoning and lower warmth) mediated the relationship between father-adolescent American orientation discrepancy and adolescent depressive symptoms in Chinese immigrant families whereas maternal parenting did not mediate the relationship between cultural discrepancy and adolescent depressive symptoms. The researchers pointed out the importance of father's protective role in children's well-being in immigrant families.

This finding suggests that although mothers are traditionally considered the nurturers of Asian families (Kim &Wong, 2002; Kim et al., 2009), it appears fathers play an important role in the emotional well-being of Asian American adolescents. It is also possible that fathers tend to be less emotionally available for their children due to their status as disciplinarian in the family (Ho, 1986; Chen et al., 2000). Thus, when

adolescents perceive emotional closeness with father, they may be protected from the negative effect of expectations of Asian cultural values.

Another possible explanation is related to acculturation of fathers and mothers. Social-structure factors such as employment may lead to different adaptation of immigrant women and immigrant men (Dion & Dion, 2001). Given mothers' lower rates of employment in the larger society, fathers are generally more involved in American cultural than mothers in Asian immigrant families (Costigan & Dokis, 2006; Kim, Gonzales, Stroh, & Wang, 2006) and mothers are more likely to be oriented towards the ethnic culture (Chance, Costigan, & Leadbeater, 2013; Su, 2014). In this case, fathers may be better to help adolescents with their problems because of their familiarity with American culture. Therefore, father-adolescent relationships only had a mediating effect on the relationship between cultural expectations and mental health problems. As noted earlier, the AFD model does not distinguish between mother-adolescent relationship and father-adolescent relationship. The finding from the present study highlights the role of parent gender in how cultural incongruence affects family functioning and adolescent mental health. Also, it revealed that gender role expectations influenced by Asian cultures affect how AFD dynamics in families lead to adolescent mental health problems. This interpretation is also consistent with the symbolic interaction perspective that addresses the role of cultural context in role expectations and explains how role expectations affect individual behavior and health.

Hwang (2006) proposed that family conflict mediates the relationship between AFD and individual psychopathology. Based on this framework, we expected that

parent-adolescent relationships would have a mediating effect between expectations of Asian cultural values and adolescent mental health problems including both depression symptoms and somatic symptoms. However, results from the present study found only somatic symptoms-only was affected by the mediating effect of father-adolescent relationships. This might be because psychological distress is often expressed somatically among Asian Americans (Lin & Cheung, 1999; Maffini et al., 2011). Since Asian American adolescents tend to report their stress with an experience of bodily symptoms, somatic symptoms-only may better represent their distress in this non-clinical sample.

The Moderating Effect of Child Nativity

Hwang (2006) argued that AFD can have a qualitatively different impact on immigrant families by children's generational status. Acculturation and maintenance of the ethnic culture may be different by children's place of birth and years of residence in the U.S., resulting in different AFD, family conflict, and individual psychopathology. We hypothesized that expectations of Asian cultural values would have a stronger effect on parent-adolescent relationships and mental health problems for U.S.-born adolescents, compared to their foreign-born counterparts since they may have less knowledge of Asian ethnic culture and therefore, the pressure from parents regarding Asian cultural values would have a more negative impact on their parent-adolescent relationships and mental health problems. However, results from the present study demonstrate there is no moderating effect on the relationships between expectations of Asian cultural values, parent-adolescent relationships, and mental health problems.

There are several reasons that may explain why there is no moderating effect of child nativity in the model. First, there may be other factors that affect cultural orientations of Asian American adolescents. For example, ethnic density of the neighborhood may influence how familiar Asian American adolescents are with their ethnic culture and their interactions with the peers from the same ethnic background (Fuligni, 2001; Hwang; 2006; Kim & Park, 2011; Kwak & Berry, 2001; Ying & Han, 2008). According to the Pew Research Center (2013), almost half of Asian Americans (47%) live in Western states. Although the ratio is slightly different by subgroup[2], the four subgroups included in this study are more likely to live in the West. Therefore, the maintenance of the ethnic culture may be qualitatively different between Asian American families living in the West and those in the Midwest. Adolescents living in the West are more likely to learn about their ethnic cultures and use their native languages through ethnic institutions such as churches, language schools, and markets. Therefore, AFD is less likely to occur to those families compared to those in the Midwest. In addition, age at immigration can also affect the cultural retention of Asian American adolescents since there are fundamental differences in the pace and mode of adaptation between persons who immigrate as adults and those who do so as children (Rumbaut, 2004). For instance, adolescents who immigrated to the U.S. at very young ages may acculturate more rapidly than their older counterparts. The degree of missing data on adolescents'

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[2] Most Japanese-Americans (71%) and most Filipino-Americans (66%) live in the West. Chinese Americans (49%) and Korean Americans (45%) also are more likely to live in the West than in any other region.

age at immigration precluded its use as a control variable[3]. Thus, the use of place of birth of adolescents might mask the generational difference in terms of cultural influences on family relationships and individual mental health.

Furthermore, parental nativity may play a role in the dynamics between parents and adolescents (Hwang, 2006). There might be differences in terms of acquiring knowledge of the ethic culture and expectations of the cultural values from parents between children born in the U.S. of two foreign-born parents and children born in the U.S. of one foreign-born parent and one U.S.-born parent. However, this study included only child nativity due to significant missing cases and not enough variation[4]. Therefore, this could lead to no significant group differences in family dynamics.

It is also possible that there is a universal pattern where parents' regulation of adolescents' everyday lives leads to negative parent-adolescent relationships and their adjustment regardless of child nativity (Fuligni, 1998; Kwak, 2003). Developmentally, adolescents begin to desire less control from parents and seek to spend more time with peers (Marcia, 1966; Steinberg & Silverberg, 1989). Although Asian cultures tend to emphasize collectivism, restricted autonomy, and academic success for their children compared to Western cultures, adolescents' universal tendency to be independent from parents is compounded in AFD, resulting in no significant difference in the effect of

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[3] More than 70% cases were missing.

[4] 14% of missing cases were found for both mother's and father's nativity. Also, most of mothers (87.1%) and fathers (87.3%) reported that they were foreign-born.

Asian cultural values on family relationships and their mental health between foreign-born and U.S.-born adolescents.

Another possible explanation is that immigrants are a select group of people from their home country (Fuligni, 2001; Portes & Rumbaut, 1996) and there may not be enough variation in ethnic cultural values on family relationships and mental health between immigrants and U.S.-born participants. Immigrant families who decided to leave their home countries may be more likely to adhere toward American cultural values and norms (Fuligni, 2001). Due to the occupational selectivity of the 1965 immigration Act, educated professionals from China, Japan, Korea, and the Philippines often were allowed to immigrate to the U.S. (Boyd, 1974). Therefore, their levels of education are significantly higher than the US national share (The Pew Research Center, 2013). Because of the preexisting inclination, the role of ethnic culture might not vary across child nativity. Although adolescents were born outside of the U.S., again, it is possible a proportion of those families may be as orientated towards American culture as families where adolescents were born in the U.S. Therefore, child nativity might not moderate the relationships when considered for the sample as a whole.

The Moderating Effect of Subgroup Ethnicity

Symbolic interaction theory and previous studies on Asian subcultures suggest that Asian subgroups have different role expectations and thus, AFD can have a different impact on Asian American youth and their families by subgroup ethnicity. Contrary to our expectation, the results from this study indicated subgroup ethnicity did not moderate the relationships between expectations of Asian cultural values, parent-adolescent

relationships, and mental health problems. The model worked similarly for East Asian American adolescents (e.g., Chinese, Japanese, and Korean) and Filipino American adolescents. There are possible reasons why the group difference was not found.

It is possible this study detected a universal pattern of Asian American parent-adolescents relationships that is reflective of AFD dynamics. Regardless of the country of origin, parental control on adolescents' daily life could impact parent-adolescent relationships and adolescent somatic symptoms-only. This indicates that constructs of Add Health are potent enough to capture some universal principles of the Asian American family experience in the U.S. Therefore, although there may be difference in family relationships by subgroup ethnicity, the general pattern is strong enough that the difference in the effects of cultural expectations on family relationships and somatic symptoms-only might not be found in this study. Moreover, the measures used in this study may not capture subgroup differences in the Asian American population because they were not culturally grounded. Thus, in contrary to symbolic interaction theory, the role of cultural context (i.e., subgroup ethnicity) was not found in this study. However, this does not mean that subcultural differences in parenting, family values, and family relationships do not matter in Asian American families (Crockett et al., 2010; Fuligni, 1998; Uba, 1994). Ultimately, a full test of these ideas necessitates inclusion of culturally relevant and culturally valid measures of family constructs in large studies like the Add Health study. Nevertheless, the absence of moderation for the psychologically healthy population in general suggests we can consider the findings from this study as

part of the foundation of understanding the developmental experience of Asian American adolescents in the U.S.

Significance of the Study

Findings from the present study lend support to Hwang's (2006) AFD model that cultural incongruence leads to increased family conflict, which in turn affects individual mental health. Although this study only included adolescents' perspectives of expectations of Asian cultural values from parents, results still indicated adolescents' perceived expectations of the ethnic culture is associated with parent-adolescent relationships and their mental health. This study also revealed that parent-adolescent closeness and caring independently affect adolescent mental health as well as family conflict. Moreover, this study finds that parent-adolescent relationships have differing associations with expectations of Asian cultural values and adolescent mental health by the gender of parents. By investigating diverse aspects of parent-adolescent relationships in Asian American families, this study can contribute to the model for parent-adolescent dynamics in Asian American families.

Using nationally representative data, findings from this study can be generalized to Asian American families in the U.S. According to the literature review on Asian American families, most studies used small samples focusing on specific ethnic groups. Therefore, findings from these previous studies often cannot be generalizable. However, this present study included a representative sample of diverse subgroup ethnicity (e.g., Chinese, Korean, Japanese, and Filipino). The results of this study can be applied to those ethnic groups in the U.S. Moreover, since this study suggested there

is no group difference in the model by child nativity and subgroup ethnicity, the model of this study can be used as a general model for Asian American adolescents and their families.

This study also contributes to the literature on Asian American adolescent mental health by examining longitudinal effects. This study finds that even after controlling for mental health problems at Wave I, expectations of Asian cultural values and parent-adolescent relationships at Wave I influenced their mental health at Wave II. The results indicate causal relationships between variables, contributing to a better understanding of adolescent mental health problems.

Limitations

This study has several limitations that should be addressed before interpreting the findings. First, the study would have been bolstered by parents' perspective of adherence to Asian cultural values. This would permit an assessment of the presence of a gap between parents' endorsement of their ethnic culture and the host culture, which was not possible in this study. This is important because of Hwang's (2006) emphasis on the impact of cultural incongruence between parents and children. Future research needs to assess that gap by measuring cultural orientations of both parents and children and cultural gaps not only in the ethnic culture but also in the host culture between parents and children. By measuring cultural gaps in both the ethnic culture and the host culture, future research will be able to examine which cultural gap is more influential in parent-adolescent relationships and adolescent mental health.

A second limitation is that the present study used data from the 1990's. Since this study used a sample of adolescents who were high school students in the mid 1990s, these finding may not be applicable to adolescents facing similar challenges in 2015. There might have been changes in the immigration system and policies, labor markets, and immigrants' adaptation in the U.S. For example, the Immigration Act of 1990 allowed more legal immigrants, especially skilled immigrants (Fix & Passel, 1994). In addition to changes in law, globalization spurred Asian immigrants who are more skilled and educated (The Pew Research Center, 2013). The contextual changes resulted in increases in the number of Asian immigrants, making it easier for Asian Americans to be enculturated. Therefore, findings from this present study may not apply to families of very recent immigrants. However, cultural conflicts between parents and children may still be relevant to immigrant families. Because cultural gaps between parents and children may exist in immigrant families, the results of this study can also have implications to recent immigrant families with some caution.

A third limitation is that this present study did not use Asian measures designed for use in Asian American adolescents. Although careful efforts were made to select measures which emphasized concepts and dynamics in Asian cultures based on the literature, they were not necessarily specific to Asian Americans. Because of the limitation of the measures, this study might not fully capture cultural values which influence family dynamics and adolescent mental health.

In addition, some measures assessing expectations of Asian cultural values combined constructs for perceptions of both parents (e.g., restricted autonomy and

academic expectations), but the other measure (e.g., collectivism) only examined the perception of mother. The limitation of the measures may not fully show parental expectations of Asian cultural values in this study. The inclusion of perceptions of both father and mother will be able to better assess how adolescent perceive expectations from parents regarding the ethnic culture. Despite these limitations, this study represents possibly the first national study of acculturative family distancing dynamics in Asian American adolescents. Moreover, the test of subgroup ethnicity and child nativity suggests family dynamics occur across Asian American families in a similar manner.

Suggestions for Future Research

More research is necessary to examine the effect the presence of a gap or lack of fit in cultural values between parents and adolescents on adolescent mental health. Furthermore, with special consideration paid to measures which are specific to Asian Americans. Not only should examine existing measures for validity, reliability, and cross-cultural equivalence across diverse Asian American subgroups, but also researches should develop appropriate measures for culture-specific constructs for Asian Americans. Culturally specific measures testing AFD may reveal moderational effect by subgroup ethnicity that may not be detectable in this current study.

For example, the Asian values scale developed by Kim, Atkinson, and Yang (1998) captures cultural values specific to Asian population such as conformity norms, emotional self-control, collectivism, humility, filial piety, and family recognition thorough achievement. Future studies using national samples should also utilize culturally specific measures to better understand family dynamics in Asian Americans.

Many studies have focused on measures applicable for a general population, ignoring differences in cultural meanings and contexts across diverse groups. It is important to include culturally appropriate measures in a national study to examine meaningful within-group differences in ethnic minority population. There are valid measures to access Asian American family constructs (e.g., Chao, 1994; Choi et al., 2012; Kim et al, 1998; Lee, Choe, Kim, & Ngo, 2000). Researchers should be sure to attend to assess language proficiency, acculturation, and other indication of communication quality among Asian American families. Though there is value in gaining an understanding of general norms, it is also important that researchers recognize deep understanding of culturally specific concepts and mechanisms. The US is growing more ethnically diverse (U.S. Census Bureau, December, 12, 2012), and research need to adapt to the new realities.

Moreover, the measures need to capture conflicts due to different cultural orientations between parents and children rather than simply everyday conflicts (e. g. argues over attire, schoolwork, and home chores). Hwang (2006) proposed cultural values, which contributes to family conflict among immigrant parents and their children based clinical anecdotes. The values included family bonding, harmony, and importance of social life vs. academic life. However, he did not differentiate it from cultural conflicts, which often occur to common adolescent children and parents. Recent studies have indicated the need to distinguish between everyday conflict and acculturation-based conflict (Fuligni, 2012; Juang et al., 2012). For example, with a sample of Chinese American adolescents, Juang et al., (2012) found that the two types of conflicts were unique predictors of psychology well-being, including depressive

symptoms, anxiety/somatization, loneliness, and self-esteem. Future research needs to take into account how the two types of conflicts are related and affect adolescent mental health.

In addition, future research needs to measure cultural gaps not only in the ethnic culture but also in the host culture between parents and children. By incorporating two different perspectives of cultural differences from children and parents, future studies will be able to better assess cultural dynamics between parents and children in Asian American families.

Future research should investigate the role of neighborhood in examining Asian American adolescents' enculturation. Considering the fact that their learning experience of the ethnic culture vary by the ethnic density of the region, future studies need to include more information about the region where Asian American adolescents live. In particular, the proportion of Asian Americans, the ethnicity of peer groups, or accessibility of ethnic cultural institutions (e.g., ethnic churches or temples) can be considered as these factors. They are likely to have a direct impact on the speed with which AFD process might occur. Communities with very low numbers of Asian Americans are likely to experience AFD in an accelerated manner. In contrast, communities with high ethnic density may be more likely to have ethnic institutions such as churches, temples, and language schools, which allow Asian American adolescents to learn their ethnic cultures. The settings may lead Asian American families to experience AFD in a manageable manner. Therefore, future studies can investigate how neighborhood factors affect their family relationships and individual mental health.

This present study examined the longitudinal effects of expectations of Asian cultural values and parent-adolescent relationships on adolescent mental health one year after. Future studies should expand to include the longitudinal effect of AFD through young adulthood or adulthood. Although the effect of relationships with parents can be changed or diminished as children grow old, their enculturation and acculturation process can occur not only in the family of origin but also in their own romantic relationships and in the relationship with their children. Given the fact that it has been about 50 years since the second wave of Asian American immigration, studies on Asian Americans should include diverse developmental stages of Asian Americans (Ng, 2010).

Hwang (2006) proposed the AFD model based on clinical cases in which Asian American adolescents experienced cultural conflicts and communication difficulties with their parents. The participants of the present study were the general Asian American population meaning that symptoms of psychological distress are likely to be low. Consistent with expectations, results showed that the levels of depression symptoms and somatic symptoms were low in this non-clinical sample. Due to the small variations in the mental health problems, few significant relationships were found between predictor and outcome variables in this study. However, this study found that AFD was associated with parent-adolescent relationships and adolescent mental health problems as measured by somatic symptoms-only. Asian Americans often express psychological distress via somatic symptoms (Lin & Cheung, 1999; Maffini et al., 2011). These findings fit with previous work in that area. The findings also indicate that AFD occurs even for the general Asian American families and this affects their family functioning and

individual mental health. Therefore, future studies targeting the general Asian American adolescents and their families should consider AFD when examining adolescent adjustment and parent-adolescent relationships.

This study found that the levels of mental health problems were low in this sample and therefore, it did not allow to find within-group differences in mental health problems. However, this result does not necessarily mean that Asian American adolescents are mentally healthy. It is possible that some group of Asian American youth have high levels of mental health problems. For example, adolescents who do not well in school could be more stressed about parental academic expectations. But due to small number of the group, their problems might not be shown in this study. To avoid problems with averaging scores, future research should categorize participants by the levels of mental health problems and examine risk and protective factors by each group.

Using Hwang's (2006) AFD theory, this study examined how Asian cultural expectations had negative impacts on family functioning and adolescent mental health. However, it is also important to find asset and protective factors of Asian American youth mental health outcomes. Researchers have indicated that Asian American parenting help to more easily inculcate values such as high academic achievement and strong work ethics (Hsin & Xie, 2014; Sakamoto, Kim, Takei, 2012) and protect their children from risk behaviors (Choo & Shek, 2013; Hahm et al., 2003; Supple & Small, 2006). More studies need to investigate strengths and advantages that can contribute to better health outcomes for Asian American youth.

Implications for Understanding Gender Dynamics in Asian American Families

Evidence form this study demonstrates that AFD is a useful as a conceptual model for each of the ethnic groups studied. Results from the present study suggest that maternal emphasis on collectivism is negatively associated with parent-adolescent relationships (e.g., closeness with mother/father and caring from mother/father) and restricted autonomy increases conflict with mother and father. However, results revealed that the effects of expectations of Asian cultural values on parent-adolescent relationships varied by the gender of parents. The AFD model does not distinguish family functioning by the gender of parents. This study found that adolescents' perception of their relationship with their father affect adolescent mental health problems. Specifically, closeness with father had a mediating effect between expectations of Asian cultural values and adolescent somatic symptoms-only. This emphasizes the importance the role of father-adolescent relationships in adolescent adjustment.

Because the findings are based on a general sample, the clinical implications are unclear. Nevertheless, the findings have some implications for clinicians who work with Asian American families. Clinicians should be aware of the fact that expectations for fathers and mothers are different (Ho, 1986; Kim &Wong, 2002) and they should assess the nature of the parenting behaviors of mothers and fathers as well as the nature of the parent-child relationship. These findings need to be replicated in both clinical and nonclinical samples to bolster the conclusions offered here.

Conclusions

This research provides support for Hwang's (2006) AFD model and symbolic interaction theory (LaRossa & Retizes, 1993) in a national sample of Asian American youth. This is likely the first study of its kind to use a national sample of Asian American youth to examine cultural dynamics in Asian American families. Nevertheless, research on these issues with this population remains scant and these findings would benefit from replication. Given the rate of growth in the Asian American population over the past 50 years (The Pew Research Center, 2013), the field is in need of much more research in this area. Researchers should pursue more national studies with culturally-specific measures wherever possible. More attention is needed with regard to the role of gender in family dynamics related to AFD. In order to examine gender pattern, future research could consider measuring AFD with both mother and father (e.g., cultural gaps with mother/father and communication difficulties with mother/father). Moreover, researches should pay more attention to understudied Asian subgroups such as South Asians (e.g., Asian Indian, Pakistan, and Bangladesh) (Tummala-Narra, Algeria, & Chen, 2012).

In order to better serve the needs of at-risk Asian American adolescents and their families, more research is also needed based on clinical samples. In terms of research methods, the field would benefit from small scale studies. By focusing on certain Asian subgroups, studies can unpack the dynamics unique to families within certain Asian subcultures. These findings can contribute to better understanding of acculturative and enculturative mechanisms in the families, which in turn could help in the development

culturally-specific measures. These efforts would provide enhanced guidance to policy makers, clinicians, and family professionals charged with facilitating positive development in this population.

Appendix A. Depression Symptoms Scale

How often was each of the following things true during the past seven days?
(0 = *never or rarely*; 1 = *sometimes*; 2 = *a lot of the time*; 3 = *most of the time or all the time*)

You were **bother**ed by things that usually don't bother you.
You didn't feel like eating, or your **appetite** was poor.
You felt that you could not shake off the **blues**, even with help from your family and your friends.
You felt that you were just as **good** as other people.*
You had trouble keeping your **mind** on what you were doing.
You felt **depressed**.
You felt that you were too **tired** to do things.
You felt **hopeful** about the future.*
You thought your life had been a **failure**.
You felt **fearful**.
You were **happy**.*
You **talk**ed **less** than usual.
You felt **lonely**.
People were **unfriendly** to you.
You **enjoy**ed life.*
You felt **sad**.
You felt that people **disliked** you.
It was hard to get **start**ed doing things.
You felt **life** was not worth living.

Note. *The four items were reverse coded so that greater values indicate higher depressive symptoms.

Appendix B. Somatic Symptoms Scale

How often you have had each of the following conditions in the past 12 months?
(0 = *never*; 1 = *just a few times*; 2 = *about once a week*; 3 = *almost every day*; 4 = *every day*)

a **headache**;
feeling **hot** all over suddenly, for no reason;
a **stomach ache** or an upset stomach;
cold sweats;
feeling physically **weak**, for no reason;
a **sore throat** or a cough;
feeling **very tired**, for no reason;
painful or very frequent **urination**;
feeling really **sick**;
waking up feeling **tired**;
skin problems, such as itching or pimples;
dizziness;
chest pains;
aches, **pains**, or soreness in your **muscle**s or joints;
poor **appetite**;
trouble falling a**sleep** or staying asleep;
trouble relaxing;
moodiness;
frequent **crying**;
fearfulness;

Appendix C. Maternal Emphasis on Collectivism (Wave I)

H1PF2 [Mom] encourages you to be independent.
(1 = *strongly agree*; 2 = *agree*; 3 = *neither agree nor disagree*; 4 = *disagree*; 5 = *strongly disagree*)

Appendix D. Restricted Autonomy Index (Wave I)

H1WP1	Do your parents let you make your own decisions about the time you must be home on weekend nights? (*yes* = 1; *no* = 0)
H1WP2	Do your parents let you make your own decisions about the people you hang around with? (*yes* = 1; *no* = 0)
H1WP3	Do your parents let you make your own decisions about what you wear? (*yes* = 1; *no* = 0)
H1WP4	Do your parents let you make your own decisions about how much television you watch? (*yes* = 1; *no* = 0)
H1WP5	Do your parents let you make your own decisions about which television programs you watch? (*yes* = 1; *no* = 0)
H1WP6	Do your parents let you make your own decisions about what time you go to bed on week nights? (*yes* = 1; *no* = 0)
H1WP7	Do your parents let you make your own decisions about what you eat? (*yes* = 1; *no* = 0)

Note. All the items were reverse coded (*yes* =0; *no* = 1).

Appendix E. Parental Academic Expectations (Wave I)

H1WP11 On a scale of 1 to 5, where 1 is low and 5 is high, how disappointed would your mother be if you did not graduate from college?

H1WP15 On a scale of 1 to 5, where 1 is low and 5 is high, how disappointed would your father be if you did not graduate from college?

Appendix F. Closeness with Mother (Wave I)

H1WP9 How close do you feel to your mother?
(1 = *not at all*; 2 = *very little*; 3 = *somewhat*; 4 = *quite a bit*; 5 = *very much*)

Appendix G. Caring from Mother (Wave I)

H1WP10 How much do you think your mother cares about you?
(1 = *not at all*; 2 = *very little*; 3 = *somewhat*; 4 = *quite a bit*; 5 = *very much*)

Appendix H. Conflict with Mother (Wave I)

H1WP17G Have you had a serious argument with your mother about your behavior in the past 4 weeks? (*yes* =1; *no* = 0)

Appendix I. Closeness with Father (Wave I)

H1WP13 How close do you feel to your father?
(1 = *not at all*; 2 = *very little*; 3 = *somewhat*; 4 = *quite a bit*; 5 = *very much*)

Appendix J. Caring from Father (Wave I)

H1WP14 How much do you think he [father] cares about you?
(1 = *not at all*; 2 = *very little*; 3 = *somewhat*; 4 = *quite a bit*; 5 = *very much*)

Appendix K. Conflict with Father (Wave I)

H1WP18G Have you had a serious argument with your father about your behavior in the past 4 weeks? (*yes* =1; *no* = 0)

Appendix L. Factor Analysis – Depression Symptoms Scale

Background and rationale for analyses. The CES-D (Center for Epidemiologic Studies Depression) was developed in 1976 for use in general adult population (aged 18 or older) (Radloff, 1977). Since its introduction, the CES-D scale has been used to measure depression symptoms in several populations including adolescent and elderly (Perreira, Deeb-sossa, Harris, & Bollen, 2005). Using principal components factor analysis for Black and White samples, Radloff (1977) suggested a four factor model: depressed affect, positive affect, somatic and retarded activity, and interpersonal.

Several studies have questioned the construct validity of the factor structure across ethnicity (Edman, Danko, Andrade, McArdle, Foster, & Glipa, 1999; Kim, Decoster, Huang, & Chiriboga, 2011; Kuo, 1984; Ying, 1988). For example, Edman et al. (1998) found that Filipino American adolescents did not distinguish depressed affect from somatic-retardation symptoms. They also failed to make a distinction between the depressed affect and somatic-retardation items from the interpersonal items. Other studies on Chinese immigrants revealed low construct validity (Gupta & Yick, 2001; Kuo, 1984; Ying, 1988). Depressed affect and somatic items, and depressed affect and interpersonal items loaded together.

Potential reasons for the different responses to the CES-D scale could include cultural differences in conceptualization, language, and social desirability. Problems arise when Western measures of depression are applied to non-Western culture because of a difference in conceptualization (Cheung & Bagley, 1998). Unlike in Western cultures, where the body and mind are viewed separately, they are viewed as integrated in

Asian culture (Ying, 2002). Asians do not differentiate emotional from physical well-being and identify a strong interpersonal component to depression (Kim, 2002; Marsella, Sanborn, Kameoka, Shizuru, & Brennan, 1975; Noh, Avison, & Kaspar, 1992; Ying, 1988). Asians also tend to avoid expressing positive affect because modesty and self-effacement are highly valued in Asian culture (Ying, 2002). In addition, language significantly affects psychopathology in ethnic population (Perreira et al., 2005; Tran, Ngo, & Conway, 2003). Since feelings reported in a native language may be expressed differently in a second language, the CES-D was not recommended to use for bilingual populations (Radloff, 1977). Lastly, social desirability can lead cross-ethnic differences (Van de Vijver & Leung, 2001). Although it is universal that individuals concern for face, those from Asian culture are more likely to be conscious about face in the social interactions and avoid the loss of face (Sue & Sue, 1987; Zane & Yeh, 2002).

Studies have tested the validity of the CES-D in Asian American population (Edman et al., 1998; Guspa & Yick, 2001; Kim, Han, & Philips, 2003; Noh et al., 1992; Tran et al., 2003; Ying, 1988; Ying, Lee, Tsai, Yeh, & Huang, 2000). There was no consensus on the number of factors, ranging from two to five. Except for one study (Edman et al, 1998), most studies used adult Asian-American samples. Moreover, the samples were small and collected from one specific region; therefore their findings cannot be generalized to the larger populations.

It should be noted that the CES-D scale used in Add Health was different from the original scale. Using the Add Health version of the CES-D scale, Perreira and colleagues (2005) tested construct validity with a sample of diverse ethnic background and immigrant status. Although the results indicated ethnic differences in parameter

estimates, it did not show how the factor structure is different in the Asian American sample. Because the theoretical basis for the factor structure is weak, especially in Asian American adolescents, this study assessed the validity of depression symptoms scale with a nationally representative sample of Asian American adolescents.

Analyses. The exploratory factor analysis (EFA) was utilized to identify the number of constructs and underlying factor structure of the CES-D scale. This method is especially useful in understanding the factor structure of a scale when it is either in development has a substantially different structure compared to existing models (Lee, 2011). The Mplus version 7 was used to conduct an exploratory factor analysis (EFA). To account for the clustered sampling design, all EFAs included sample weights. Because approximately 10% is enough shared variance to regard a variable useful for factor interpretation (Bandalos & Finney, 2010), a factor loading cut-off value of .32 was used in this study. The loading that is largest in absolute value was mainly considered. The number of underlying factors in the item set was chosen by using the eigenvalue greater than 1 criterion. The scale's goodness of fit was evaluated using the fit indices provided by the Mplus output for EFA for categorical variables, including the CFI and RMSEA. After the fit indices for EFA were judged as acceptable, confirmatory factor analysis (CFA) was then conducted to examine whether the factor structure was applicable to each subgroup.

The 19 items measuring depressive symptoms in the dataset were assumed to be non-normally distributed since these items were measured on a 4-point Likert scale. To address this, the estimation of the parameters in the factor model was performed using the WLSMV (Weighted Least Squared Means and Variance adjusted) estimator, a procedure

that deals with non-normal data (Finney & Distefano, 2006). Oblique rotation was used to take into account that the dimensions underlying construct in the behavioral and social science tend to be correlated (Bandalos & Finney, 2010).

The EFA suggested a four-factor model for the full sample, based on the eigenvalue greater than 1 criterion. The EFA factor loadings for the 4-factor model are shown in Table 18. The results shows that items "bother," "appetite," "blues," "depressed," "failure," "fearful," "lonely," "sad," and "life" loaded on factor 1 (*depressed affect*). Items "good," "hopeful," "happy," and "enjoy" loaded on factor two (*positive affect*). Items "mind," "tired," and "start" loaded factor three (*psychomotor retardation*). Items "talk less," "unfriendly," and "disliked" loaded on factor four (*interpersonal problems*). The fit indices for the exploratory model were CFI = .992, RMSEA = 0.020. The **f**t indices indicated fairly good fit. Reliabilities for each of the subscales varied, with reliability for the positive affect being .85, for the depressed affect being .75, for the psychomotor retardation was .63 for interpersonal problems being .57.

Except for the Positive affect factor, all other factors varied conceptually and in item loading compared to Radloff's (1977) findings. Items for the somatic and retarded activity as found by Radloff (1977) "bother", "appetite" factored with the depressed factor in this study. In addition, "talk less", which loaded on Radloff's somatic and retarded activity, was loaded on interpersonal problems. This pattern is consistent with previous findings that individuals from Asian cultures tend to somatize depressive symptoms (Kalibatseva & Leong, 2011; Ying, 2002).

Table 18

Exploratory Factor Analysis for the Depression Symptoms Scale Using the Full Sample

	Factor 1 Depressed affect	Factor 2 Positive affect	Factor 3 Psychomotor retardation	Factor 4 Interpersonal problems
Bother	**.575**	-.054	.044	-.048
Appetite	**.433**	-.242	.123	.135
Blues	**.580**	.134	.233	.018
Good	.009	**.468**	-.109	.400
Mind	.293	-.154	**.519**	.040
Depressed	**.829**	.085	.123	-.244
Tired	.334	.003	**.437**	-.009
Hopeful	-.007	**.575**	.077	.231
Failure	**.517**	.165	-.063	.267
Fearful	**.476**	-.013	.068	.339
Happy	.131	**.653**	.190	.053
Talk less	.271	-.182	.107	**.336**
Lonely	**.860**	-.010	-.112	.032
Unfriendly	.120	-.034	.327	.360
Enjoy	.379	**.597**	.017	-.048
Sad	**.886**	-.010	-.061	.015
Disliked	.002	.093	.360	**.659**
Start	-.012	.072	**.687**	-.096
Life	.497	.021	-.084	.269

Note. Highest loadings over .32 were bolded.

Factor analysis for subgroups. The CFA for a 4-factor model was conducted in the four subgroups. Loadings were comparable to the loadings in the exploratory analysis. Fit indices were shown to be fairly good fit, with the CFI being .973 and the RMSEA being .030 for the foreign-born sample, the CFI being .978 and the RMSEA being .033 for the U.S.-born sample, the CFI being .964 and the RMSEA being .042 for the East Asian sample, and the CFI being .951 and the RMSEA being .036 for the Filipino sample. Since the factor structure was confirmed to be appropriate for use with

this sample, the four subscales were used in the structural model. The summed scores for each subscale were used.

Appendix M. Factor Analysis – Somatic Symptoms Scale

Background and rationale for analyses. There is no universally agreed definition that explains which symptoms should be included as somatic symptoms (Chaturvedi & Desai, 2013). Therefore, many different questionnaires are available and the use of these questionnaires differ among studies (Chaturvedi & Desai, 2013; Zijlema, Stolk, Löwe, Rief, White, & Rosmalen, 2013). Although not found all studies, previous findings have suggested four clusters: cardiopulmonary, gastrointestinal, musculoskeletal, and general symptoms (Fink, Toft, Hansen, Ørnbøl, & Olesen, 2007; Kroenke, Spitzer, & Swindle, 1998; Rosmalen, Tak, & De Jonge, 2011). However, most questionnaires have been used primary care, general hospital and psychiatric settings, targeting adult patients. Therefore, it is needed to explore underlying structures of a set of interrelated somatic symptoms in an adolescent sample.

The somatic symptoms scale in the Add Health study included a total of 20 items. However, there is no consistency among previous investigators who have used the scale on which items were used. One study conducted by Wang (2003) on Asian American and White American adolescents used all of the items. Other studies on Asian American adolescents have used a subset of the scale, ranging from 10 items to 14 items. (Maffini et al., 2011; Rhee, 2005; Rhee, Holditch-Davis, & Miles, 2005; Walsemann, Bell, & Maitra; 2011; Wilgerodt & Thompson, 2006). In addition, the factor structure of the somatic symptoms was rarely discussed in Asian American adolescents within these previous studies. Because of limited theoretical background regarding the somatic

symptoms scale, this study explored underlying structures of the items without imposing a preconceived structure. The result can contribute to validation of the measure and therefore, better understanding of somatic symptoms in Asian American adolescents.

Analyses. The EFA was conducted with Mplus version 7. The clustered sampling design effect was adjusted by including sample weights. The same guideline for the factor analysis on the depressive symptoms scale was applied. The scale's goodness of fit was evaluated using the fit indices provided by the Mplus output for EFA for continuous variables, including the CFI, RMSEA, and SRMR. After the fit indices for EFA were acceptable, CFA was then conducted to examine whether the factor structure was applicable to each subgroup.

The 20 items measuring somatic symptoms in the dataset were assumed to be normally distributed since these items were measured on a 5-point Likert scale. The estimation of the parameters in the factor model was performed using the MLR (Maximum Likelihood with Robust standard errors and chi-square) estimator, which is robust to stratified survey data (Muthén & Muthén, 1998-2012). Oblique rotation was used.

Items "moodiness" and "fearfulness" were removed since their contents implied mental distress rather than bodily symptoms. In addition, item "frequent urination" and item "skin problems" were removed because of its irrelevance to adolescents' general somatic symptoms. The initial EFA on the remaining set of 16 items were conducted (Table 19). The analysis suggested a two-factor model based on one eigenvalue >1 criterion. The result shows that item "stomachache" and item "frequent crying" were

loaded less than .32 on neither of the two factors. Therefore, the two item were removed and additional factor analysis on the remaining set of 14 items was conducted.

The final EFA supported a 2-factor model for the full sample, based on one eigenvalue >1. The EFA factor loadings for the 2-factor model are shown in Table 24. The results shows that items "very tired," "tired," "appetite," "trouble sleep," and "trouble relaxing" on factor 1 (*somatic depression*) and items "headache," " hot," "cold sweat," "weak," "sore throat," "sick," "dizziness," "chest pains, and "muscle pains" on factor 2 (*somatic symptoms-only*). The fit indices for the final model were CFI = .925, RMSEA = .037, SRMR = .043, indicating good fit. Reliabilities for each of the subscales were fairly acceptable, with reliability for the somatic symptoms-only being .66, for the somatic depression being .68.

The pattern aligns with the Chaturvedi & Desai (2013)'s definition that somatic symptoms include not only somatic symptoms specifically but also manifestation of underlying anxiety or depression (Chaturvedi & Desai, 2013). According to the DSM IV (APA, 1994), somatic symptoms for major depressive disorder include sleep disturbance, appetite disturbance, and fatigue or loss of energy (Khapfhammer, 2006). The 16 items can be categorized into (1) somatic depression which indicates depressive symptoms and (2) somatic symptoms-only.

Table 19

Exploratory Factor Analysis for Somatic Symptoms Scale Using the Full Sample

	EFA initial model		EFA final model	
	Factor 1	Factor 2	Factor 1 Somatic depression	Factor 2 Somatic symptoms-only
Headache	-.062	.409	-.067	**.393**
Feeling hot	.023	.456	.021	**.462**
Cold sweats	-.130	.378	-.135	**.368**
Weak	.148	.525	.148	**.541**
Sore throat	-.035	.552	-.041	**.553**
Very tired	.324	.356	.318	**.366**
Sick	.123	.400	.122	**.398**
Tired	.428	.222	**.417**	.229
Dizziness	-.041	.651	-.044	**.645**
Chest pains	.022	.574	.018	**.587**
Muscle pains	.150	.342	.143	**.348**
Appetite	.326	.230	**.319**	.225
Trouble sleep	.687	-.018	**.678**	-.013
Trouble relaxing	.724	.006	**.732**	.006
Stomach ache	.180	.201		
Crying	.135	.219		

Note. Highest loadings over .32 were bolded.

Factor analysis for subgroups. The CFA for a 2-factor model was conducted in the four subgroups. Loadings were comparable to the loadings in the exploratory analysis. Fit indices were shown to be fairly good fit (Foreign-born: CFI = .929, RMSEA = .036, SRMR = .061, U.S.-born: CFI = .876 and RMSEA =.047, SRMR = .063, East Asian: CFI = .876 and RMSEA = .047, SRMR = .063, Filipino: CFI =.901, RMSEA = .043, SRMR = .061). Although the CFIs were slightly below the threshold (Hancock & Muller,

2014), other indices were an excellent fit. Therefore, the factor structure was appropriate for use with this sample. In the structural model analysis, the two subscales were used by adding up the scores for each subscale.

Appendix N. Correlations among Control Variables and Path Model Variables

Table 20

Correlations among Control Variables and Path Model Variables, Full Sample

	Age	Gender [a]	Family structure [b]	Mother's education	Father's education	Depressed affect (W1)	Positive affect (W1)	Psychomotor retardation (W1)	Interpersonal affect (W1)	Somatic depression (W1)	Somatic symptoms-only (W1)
Maternal emphasis on collectivism	.05	.04	**.09***	-.03	-.02	**.17*****	**.19*****	**.12****	.05	**.09***	**.12***
Parental emphasis on restricted autonomy	**-17*****	.06	.02	.01	-.05	.06	.07	-.03	**.09***	-.00	-.05
Parental academic expectations	**.10***	**-.09***	.01	**.12****	**.12***	.02	-.06	-.00	.02	-.04	.02
Closeness with mother	**-.11***	**.11***	-.00	.02	.06	**-.22*****	**-.17*****	**-.15*****	-.08	**-.11***	**-.14****
Caring from mother	-.00	.08	**-.12****	.05	.03	**-.18*****	**-.12****	-.01	-.04	-.04	.01
Conflict with mother	.04	-.03	.05	.08	**.14****	**.20*****	.04	**.11***	**.09***	**.19*****	**.15*****
Closeness with father	**-.16*****	**.11***	.02	-.01	.07	**-.31*****	**-.21*****	**-.22*****	**-.12****	**-.13****	**-.19*****
Caring from father	-.04	-.00	-.08	.06	.05	**-.17*****	**-.14****	-.03	-.06	**-.10***	-.09
Conflict with father	**.10***	-.04	.02	.07	.04	**.15****	.05	**.17*****	.07	**.18*****	**.15*****
Depressed affect (W2)	**.20*****	**-.14****	-.04	.05	-.04	**.53*****	**.23*****	**.34*****	**.34*****	**.25*****	**.31*****
Positive affect (W2)	**.13****	-.02	-.07	-.02	**-.12***	**.36*****	**.46*****	**.22*****	**.28*****	.07	**.19*****
Psychomotor retardation (W2)	**.10***	-.07	-.01	.01	-.03	**.35*****	**.15****	**.42*****	**.25*****	**.23*****	**.36*****
Interpersonal affect (W2)	.06	.04	.02	.02	-.02	**.32*****	**.15*****	**.28*****	**.38*****	**.23*****	**.21*****
Somatic depression (W2)	.02	**-.10***	-.06	.01	-.03	**.28*****	.05	**.27*****	**.23*****	**.45*****	**.37*****
Somatic symptoms-only (W2)	.01	**-.15****	-.04	.03	-.01	**.34*****	**.09***	**.34*****	**.21*****	**.30*****	**.50*****

Note. Significant correlation coefficients were bolded.

[a]Gender: 0 = Female, 1= Male

[b]Family Structure: 1= Two-biological parent family, 2=Step/adoptive/foster family

$^{*}p < .05$, $^{**}p < .05$, $^{***}p < .001$

Table 21

Correlations among Control Variables and Path Model Variables, Foreign-born Sample

	Age	Gender [a]	Family structure [b]	Mother's education	Father's education	Depressed affect (W1)	Positive affect (W1)	Psychomotor retardation (W1)	Interpersonal affect (W1)	Somatic depression (W1)	Somatic symptoms-only (W1)
Maternal emphasis on collectivism	.08	-.02	.12	.05	.06	.08	.12	.03	-.03	.09	.11
Parental emphasis on restricted autonomy	**-.12***	.07	.03	-.01	-.06	.05	.12	.02	.08	-.04	-.07
Parental academic expectations	.05	**-.17****	-.05	**.18****	.13	.02	-.10	-.00	-.00	-.03	.02
Closeness with mother	.00	.11	.01	-.04	.07	**-.20****	**-.16***	-.12	-.07	-.09	-.09
Caring from mother	.08	**.15***	-.11	-.00	.02	**-.17****	-.09	.05	-.03	-.07	.04
Conflict with mother	.08	.01	.01	.09	**.16***	**.15***	.02	**.14***	.07	**.19****	**.13***
Closeness with father	-.09	.06	-.03	-.06	.08	**-.27*****	-.11	**-.14***	-.11	**-.14***	-.10
Caring from father	.01	-.03	-.06	.07	.03	-.12	-.04	-.02	-.02	-.08	-.04
Conflict with father	.09	-.04	-.02	**.17****	**.14***	**.18****	.00	**.19****	**.17****	**.21****	**.17****
Depressed affect (W2)	**.18****	-.12	.00	.12	-.01	**.44*****	**.20****	**.32*****	**.31*****	**.22*****	**.27*****
Positive affect (W2)	**.14***	.01	-.06	-.01	-.04	**.34*****	**.42*****	**.17****	**.27*****	.05	**.15***
Psychomotor retardation (W2)	.11	-.05	.04	.09	.03	**.37*****	**.13***	**.42*****	**.27*****	**.23*****	**.38*****
Interpersonal affect (W2)	.03	.00	.07	.09	.02	**.28*****	.10	**.29*****	**.37*****	**.21*****	**.17****
Somatic depression (W2)	.02	-.10	-.00	.01	.01	**.19****	.01	**.24*****	**.14***	**.39*****	**.28*****
Somatic symptoms-only (W2)	-.03	**-.13***	.02	.09	.02	**.28*****	.08	**.29*****	**.15***	**.30*****	**.44*****

Note. Significant correlation coefficients were bolded.

[a]Gender: 0 = Female, 1= Male

[b]Family Structure: 1= Two-biological parent family, 2=Step/adoptive/foster family

$^{*}p < .05$, $^{**}p < .05$, $^{***}p < .001$

Table 22

Correlations among Control Variables and Path Model Variables, U.S.-born Sample

	Age	Gender [a]	Family structure [b]	Mother's education	Father's education	Depressed affect (W1)	Positive affect (W1)	Psychomotor retardation (W1)	Interpersonal affect (W1)	Somatic depression (W1)	Somatic symptoms-only (W1)
Maternal emphasis on collectivism	**.13***	.12	.03	-.06	-.10	**.25*****	**.25*****	**.19****	.11	.08	**.13***
Parental emphasis on restricted autonomy	**-.25*****	.05	.02	.03	-.05	.06	.02	-.08	.09	.04	-.02
Parental academic expectations	**.15***	-.01	.04	.05	.11	.02	-.03	-.01	.04	-.05	.01
Closeness with mother	**-.24*****	.10	-.01	.10	.03	**-.25*****	**-.19****	**-.20****	-.09	**-.13***	**-.20****
Caring from mother	-.10	-.02	**-.13***	.13	.05	**-.20****	**-.16***	-.07	-.06	-.01	-.05
Conflict with mother	-.01	-.07	.11	.07	.11	**.24*****	.05	.07	.12	**.19****	**.18****
Closeness with father	**-.26*****	**.18****	.07	.06	.06	**-.36*****	**-.31*****	**-.30*****	**-.14***	-.12	**-.30*****
Caring from father	-.08	.02	-.09	.04	.08	**-.22*****	**-.24*****	-.04	-.10	**-.13***	**-.15***
Conflict with father	.07	-.02	.05	-.04	-.06	.10	.09	.12	-.07	**.15***	**.13***
Depressed affect (W2)	**.19****	**-.13***	-.11	-.03	-.06	**.60*****	**.25*****	**.34*****	**.35*****	**.27*****	**.37*****
Positive affect (W2)	.08	-.03	-.10	-.03	**-.19****	**.36*****	**.50*****	**.26*****	**.28*****	.09	**.23*****
Psychomotor retardation (W2)	.04	-.07	-.11	-.08	-.09	**.32*****	**.16***	**.41*****	**.21****	**.23*****	**.34*****
Interpersonal affect (W2)	.02	.10	-.06	-.06	-.05	**.35*****	**.19****	**.25*****	**.38*****	**.26*****	**.27*****
Somatic depression (W2)	.03	-.08	**-.14***	.01	-.07	**.38*****	.09	**.32*****	**.35*****	**.53*****	**.47*****
Somatic symptoms-only (W2)	.05	**-.16***	**-.15***	-.04	-.04	**.40*****	.10	**.41*****	**.28*****	**.30*****	**.57*****

Note. Significant correlation coefficients were bolded.

[a]Gender: 0 = Female, 1= Male

[b]Family Structure: 1= Two-biological parent family, 2=Step/adoptive/foster family

$^{*}p < .05$, $^{**}p < .05$, $^{***}p < .001$

Table 23

Correlations among Control Variables and Path Model Variables, East Asian Sample

	Age	Gender [a]	Family structure [b]	Mother's education	Father's education	Depressed affect (W1)	Positive affect (W1)	Psychomotor retardation (W1)	Interpersonal affect (W1)	Somatic depression (W1)	Somatic symptoms-only (W1)
Maternal emphasis on collectivism	.07	**.14***	-.03	-.03	-.05	**.17***	**.14***	.08	**.14***	-.04	.05
Parental emphasis on restricted autonomy	**-.26*****	.06	-.00	.03	-.04	.07	.03	-.04	.12	.02	.02
Parental academic expectations	.03	.01	.02	.11	.11	**-.14***	-.10	-.12	-.04	-.05	-.07
Closeness with mother	**-.21****	.01	.10	**.14***	.13	**-.21****	**-.24*****	**-.15***	**-.17***	-.09	-.12
Caring from mother	-.07	-.01	-.00	.08	.13	**-.18****	**-.26*****	-.08	**-.24*****	.01	-.02
Conflict with mother	-.04	-.02	.05	.07	.13	**.19****	.08	.05	.11	**.15***	**.19****
Closeness with father	**.21****	.02	.06	.13	**.17***	**-.31*****	**-.23*****	**-.14***	**-.16***	-.09	**-.16***
Caring from father	-.08	-.08	-.02	.08	**.16***	**-.20****	**-.16***	-.03	**-.17***	-.09	-.09
Conflict with father	.02	.02	-.02	.06	.08	.09	.03	.13	-.04	**.16***	**.20****
Depressed affect	**.15***	-.10	-.06	-.03	-.05	**.48*****	**.27*****	**.29*****	**.25*****	.13	**.24*****
Positive affect (W2)	.04	-.02	**-.14***	-.08	**-.15***	**.50*****	**.55*****	**.27*****	**.35*****	**.14***	**.25*****
Psychomotor retardation (W2)	.01	-.01	-.10	-.02	-.01	**.29*****	.13	**.44*****	**.14***	.08	**.35*****
Interpersonal affect (W2)	-.03	.12	-.05	-.03	-.05	**.25*****	**.19****	**.17***	**.31*****	**.15***	**.15***
Somatic depression (W2)	-.01	-.04	-.03	.05	-.02	**.24*****	.01	**.34*****	**.21****	**.43*****	**.31*****
Somatic symptoms-only (W2)	.03	-.09	-.04	.01	-.05	**.36*****	.11	**.37*****	**.21****	**.30*****	**.53*****

Note. Significant correlation coefficients were bolded.

[a]Gender: 0 = Female, 1= Male

[b]Family Structure: 1= Two-biological parent family, 2=Step/adoptive/foster family

$^{*}p < .05$, $^{**}p < .05$, $^{***}p < .001$

Table 24

Correlations among Control Variables and Path Model Variables, Filipino Sample

	Age	Gender[a]	Family structure[b]	Mother's education	Father's education	Depressed affect (W1)	Positive affect (W1)	Psychomotor retardation (W1)	Interpersonal affect (W1)	Somatic depression (W1)	Somatic symptoms-only (W1)
Maternal emphasis on collectivism	.01	-.05	**.17****	-.07	-.01	**.16****	**.21*****	**.13***	-.04	**.17****	**.16***
Parental emphasis on restricted autonomy	**-.13***	.05	.04	-.04	-.07	.04	.10	-.03	.07	-.02	-.10
Parental academic expectations	**.14***	**-.19****	-.04	**.13***	.12	.12	-.04	.08	.05	-.04	.08
Closeness with mother	-.02	**.17****	-.05	-.06	.00	**-.22*****	-.11	**-.15***	-.01	-.11	**-.15***
Caring from mother	.05	**.14***	**.19****	.04	-.05	**-.19****	-.01	.04	.10	-.07	.02
Conflict with mother	.10	-.03	.05	.09	**.14***	**.21*****	-.00	**.15***	.09	**.22*****	**.13***
Closeness with father	-.09	**.18****	.00	-.09	-.00	**-.30*****	**-.18****	**-.25*****	-.07	**-.14***	**-.20****
Caring from father	-.02	.05	-.11	.06	-.06	**-.15***	-.12	-.03	.03	-.11	-.08
Conflict with father	.09	-.07	.02	.01	-.02	**.14***	.03	**.15***	.11	**.18****	.11
Depressed affect (W2)	**.16***	**-.16***	-.05	.02	-.07	**.53*****	**.16****	**.33*****	**.36*****	**.30*****	**.35*****
Positive affect (W2)	.10	-.01	-.04	-.06	-.11	**.21*****	**.34*****	**.14***	**.18****	-.03	**.12***
Psychomotor retardation (W2)	.10	-.11	.02	-.02	-.07	**.37*****	**.14***	**.39*****	**.31*****	**.32*****	**.37*****
Interpersonal affect (W2)	.02	-.01	.04	-.04	-.03	**.32*****	.08	**.31*****	**.41*****	**.26*****	**.24*****
Somatic depression (W2)	.02	**-.12***	-.08	-.05	-.03	**.29*****	.06	**.22*****	**.24*****	**.46*****	**.40*****
Somatic symptoms-only (W2)	.02	**-.20****	-.04	.06	.03	**.35*****	.08	**.34*****	**.23*****	**.31*****	**.48*****

Note. Significant correlation coefficients were bolded.

[a]Gender: 0 = Female, 1= Male

[b]Family Structure: 1= Two-biological parent family, 2=Step/adoptive/foster family

$^{*}p < .05$, $^{**}p < .05$, $^{***}p < .001$

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