ACCULTURATION, FAMILY DYNAMICS AND PSYCHOLOGICAL
WELL-BEING AMONG ASIAN AND HISPANIC ADOLESCENTS
IN IMMIGRANT FAMILIES: A COMPARATIVE ANALYSIS

by

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Acculturation, Family Dynamics and Psychological Well-Being among Asian and Hispanic Adolescents in Immigrant Families: A Comparative Analysis

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Abstract

Past research has consistently supported the view that adolescents in both Asian and Hispanic immigrant families may experience mental health problems such as depression and low self-esteem. The mechanisms influencing psychological well-being (PWB) may be conditioned by unique aspects of Asian and Hispanic culture. Based on the ecological systems framework, family systems theories, acculturation theories, and relevant literature, factors such as family dynamics, acculturation and their interactions may be important in shaping adolescent PWB. Examining these factors from a comparative perspective, between Asian and Hispanic adolescents, could provide new insights into the ways culturally responsive and competent services are planned and delivered.

Using data from the Children of Immigrants Longitudinal Study, this research investigates the effects of family dynamics and acculturation on PWB among Asian and Hispanic adolescents. It also examines the moderating relationships between intergenerational conflict (IC) and family cohesion, familism and bicultural acculturation. How these factors operate similarly or differently for Asian and Hispanic adolescents is also studied. The results show that IC, family cohesion and adolescent English proficiency are important predictors of PWB for both ethnic groups. However, findings also reveal a great deal of between-group variation. For example, adolescent bicultural acculturation and parental acculturation affect the two groups differently. The moderating relationships are also different for the two groups: family cohesion buffers the effect of IC among Hispanics but not Asians; familism exacerbates the effect of IC among Asians but not Hispanics; bilingualism decreases the effect of IC only among Asians; although
preference for both English and foreign languages decreases the effect of IC among Hispanics, it increases the effect of IC among Asians.

These findings point to the important and complex ways in which acculturation, family dynamics and their interactions operate as risk or protective factors for PWB among adolescents from Asian and Hispanic immigrant families. Social work professionals working with these populations should familiarize themselves with themes among these factors and make efforts to develop and implement innovative interventions. This will help immigrants and their children to cope with immigration related stressors such as IC. Policy implications are discussed.
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INTRODUCTION

Using a comparative perspective, the present study focuses on the risk and protective factors for psychological well-being (PWB) of Asian and Hispanic adolescents in immigrant families living in the U.S. Specifically, the study investigates the differences and similarities between Asian and Hispanic adolescents with regard to the effects of family dynamics, acculturation, and their interrelationships on adolescent PWB. The first part of the study is an introduction. Chapter II describes the three theoretical perspectives that inform the research (the ecological systems theory, family systems theories, and acculturation theories), and reviews the literature related to adolescent PWB and its predictors. Chapter III presents the methodology for the study, including research questions and hypotheses, research design, measures and data analysis strategy. Chapter IV reports major findings of the research. Chapter V discusses these findings, provides implications for social work practice, research and policy, and offers suggestions for future research.

To help provide context for the importance of this study, the introduction provides demographic information about children of immigrants, highlighting that children of Asian and Hispanic immigrants constitute the two fastest growing groups in the U.S. Epidemiological data on mental health issues confronting Asian and Hispanic adolescents in the U.S. are also presented. The importance of a focus on acculturation and family environment as predictors of PWB is introduced, and the relevance of the research to social work practice is explained.
Demographic Overview of Asian and Hispanic Immigrants

The U.S. has long been well-known for being a country of immigrants in that its population includes a substantial proportion of immigrants. The pattern of immigration has changed dramatically since the 1960s. To facilitate a better understanding of today’s immigrants, the introduction of this dissertation starts with a brief description of the demographic characteristics of these immigrant groups. Information about race/ethnicity, population size, migration history and destination, socioeconomic status of major immigrant groups is presented. Because this study pertains to adolescents from immigrant families, a description of the second generation of children of immigrants is also provided.

Prior to 1965, immigrant law was based on a national origins quota system and favored immigrants from European countries; since 1965, it has been utilizing a preference system that focuses on immigrants’ skills and family relationships with U.S. citizens or residents. Consequently, new immigrants have mostly come from Asian and Latin-American countries. According to the 2010 Census (Hoeffel, Rastogi, Kim, & Shahid, 2012), Chinese Americans (N=4.0 million) are the largest Asian American group in the U.S., followed by Filipino Americans (3.4 million), Asian Indian Americans (3.2 million), and Vietnamese Americans (1.7 million). Of the 17.3 million Asian Americans, about 32% (5.6 million) live in California. Asian Americans, as a whole, have been portrayed as a “model minority”, yet there are substantial within-group differences: Chinese, Filipino, Asian Indian and Korean immigrants, for example, are mostly middle-class, college-educated, and English-speaking professionals (e.g., Tolentino, 2003). On the other hand, Laotians, Vietnamese, Hmong, and Cambodians consist mostly of
refugees who fled to the U.S. due to persecution in their countries of origin in the 1970s and 1980s (Bednorz & Caldwell, 2003).

According to the 2010 Census (Ennis, Rios-Vargas, & Albert, 2011), the Hispanic or Latin American population totals more than 50 million, over 16% of the U.S. total population. Hispanic Americans include four major groups: Mexicans, Central Americans (e.g., Nicaraguans), South Americans (e.g., Colombians), and Caribbeans (e.g., Cubans, Dominicans). The majority of Hispanic Americans are Mexican (63%, N=31.8 million), followed by Puerto Rican (4.6 million), Cuban (1.8 million), Salvadoran (1.7 million) and Dominican (1.4 million) (Ennis et al., 2011). The 2010 Census data (Ennis et al., 2011) indicate that California, Texas, and Florida, the three states with highest number of Hispanic population, account for 28%, 19% and 8% of the total Hispanic population, respectively. In Florida alone, for example, nearly one out of four people in the state are of Hispanic origin. It also has the largest number of Cuban immigrants in the U.S. (1.2 million).

Socioeconomic status varies greatly between different ethnic groups of Hispanic immigrants. For instance, Cuban immigrants in south Florida are often considered relatively successful as they established their own institutions such as banks, schools, newspapers and other professional agencies (Colon & Sardinas, 2003). Mexican immigrants, many of them being undocumented and low educated, typically work in low-skill and low-paying jobs in urban areas (Zuniga, 2003).

The number of American children in immigrant families (defined as children under age 18 who were foreign-born or U.S.-born having at least one foreign-born parent) has grown rapidly in recent decades. According to U.S. Census 2000, there were
13.5 million children under age 18 living in immigrant families, which was a 63% (5.2 million) increase from 8.3 million in 1990 (Beavers & D'Amico, 2005). Among them, a vast majority (10.3 million) were U.S.-born and had at least one foreign-born parent. In addition, about four-fifths of the additional 5.2 million children were U.S.-born children with foreign-born parents (Beavers & D'Amico, 2005). In the early 2000s, it was also reported that one out of five children in the U.S. were from immigrant families (Suárez-Orozco & Suárez-Orozco, 2001). More recently, the National KIDS COUNT Program, a project of the Annie E. Casey Foundation, reports that the total number of children in immigrant families has grown to 17.4 million in 2010, which is a 29% increase from 2000 (Annie E. Casey Foundation, 2010a). U.S. Census 2010 data also indicate that nearly one fourth of the total child population live in immigrant families.1

Corresponding to the new immigrant pattern, Asian and Hispanic children constitute the majority of children in immigrant families. Earlier data show that, in 2000, Hispanic and Asian children represent about 52% and 16% of the total population of children in immigrant families, respectively (Beavers & D'Amico, 2005). Recently, the KIDS COUNT Data Center released a report indicating that, as of 2010, the percentage of Hispanic and Asian children had increased, making up 62% and 23% of all children in immigrant families (Annie E. Casey Foundation, 2010b).

Mental Health Issues among Asian and Hispanic Adolescents

Adolescents in both Asian and Hispanic immigrant families may experience mental health issues such as depression and low self-esteem. Available evidence points to a problematic pattern for both ethnic groups. Asian American older adolescents, for

1 According to U.S. Census 2010 data, the total number of the U.S. population aged under 18 years has reached about 72.3 million in 2010. See Age and Sex Composition: 2010, available online at http://2010.census.gov/2010census/data/2010-census-briefs.php
example, have been found to demonstrate significantly more depressive symptomatology and lower self-esteem than their Caucasian counterparts (Lorenzo, Frost, & Reinherz, 2000). Likewise, Hispanic American adolescents have been reported to show similar or lower rates of emotional problems as white adolescents (Roberts & Roberts, 2010; Simpson, Bloom, Cohen, Blumberg, & Bourdon, 2005); however, earlier evidence (more recent data are not available) suggested that Mexican American adolescents, one of the largest Hispanic groups, may be more likely to be diagnosed with major depression than their Caucasian counterparts, with prevalence rates of 12.0% and 6.9%, respectively (Roberts, Roberts, & Chen, 1997).

The Role of Acculturation and Family Factors

Asian and Hispanic adolescents in immigrant families may experience stressors associated with immigration status on a daily basis. Since they are exposed to cultural patterns that are dramatically different from that of non-immigrants in U.S. society, they have been frequently described as “straddling different worlds” (Zhou, 2001). In the process of acculturation, they are constantly confronted with two different worlds through their interactions with family members, U.S. peers and the larger society. In the process of adapting to these different worlds, they may experience various types of stress that may lead to psychological conditions (Berry, Kim, Minde, & Mok, 1987; Hwang & Ting, 2008; Park, 2009; Romero & Roberts, 2003). For instance, they may find themselves in conflict with their parents due to different expectations about behaviors and cultural attitudes. This may in turn have psychological consequences for adolescents. Therefore, as Asian and Hispanic adolescents grow up, the way they experience acculturation and
interact with their families may put them at risk for psychological adjustment problems such as ethnic identity issues, low self-esteem and other psychological conditions.

Although both groups may be more at risk of mental health problems than non-immigrant whites, the mechanisms influencing well-being may be conditioned by unique aspects of Asian and Hispanic culture. However, few studies have compared PWB between Asian and Hispanic adolescents. Existing evidence indicates that Asian American adolescents may experience more depressive symptoms and lower self-esteem, compared to their Hispanic counterparts (Lorenzo et al., 2000; Way & Chen, 2000). This could be associated with different views on adolescent autonomy between the two ethnic groups. For example, one early study indicated that parents and adolescents of Asian origin expect autonomy later than Hispanic parents and adolescents (Feldman & Quatman, 1988). However, a relatively recent study (more recent data are not available) found no significant difference in terms of expectations of autonomy between the two groups (Fuligni, 1998b).

Moreover, it has been reported that Asian adolescents from immigrant families may suffer more acculturative stress than their Hispanic counterparts (Romero, Carvajal, Valle, & Orduña, 2007). In terms of the influence of familistic values, Hispanic adolescents who had a stronger sense of familism were found to experience lower levels of intergenerational conflict (IC) (Kuhlberg, Peña, & Zayas, 2010). On the other hand, Asian familistic values which address children’s obedience, respect for elders, and the importance of continuing family bloodline may exacerbate IC in some family interactions (Stodoiska, 2008). Differences in the association between familism and IC, in turn, may contribute to the variation in PWB between Asian and Hispanic adolescents.
Statement of Purpose

This study focuses on family dynamics and acculturation in relation to PWB of Asian and Hispanic adolescents in immigrant families in the U.S. Predictors of PWB are examined separately for Asian and Hispanic adolescents to identify similarities and differences. The focus on Asian and Hispanic adolescents is important because they represent the two fastest growing immigrant groups in the U.S. The comparative approach is needed because, as discussed earlier, existing evidence does suggest some variations between the two groups. Additionally, a comparative perspective is important because if there are differences, then the policy and program responses will need to be developed taking those differences into account.

Informed by three broad theoretical perspectives (the ecological systems framework, family systems theories, and acculturation theories), this study investigates the relationship of PWB with a set of variables measuring family dynamics and acculturation separately for Asian and Hispanic adolescents. Family dynamics include measures of family cohesion, intergenerational conflict, parent-child communication and parental monitoring. Acculturation variables involve adolescent acculturation (including both unidimensional and bidimensional measures), and parental acculturation (unidimensional measures). In addition, the interrelationships between IC and family cohesion, adolescent bicultural acculturation, and adolescents’ perceived familism are also examined.
Relevance to Social Work Practice

Family systems and immigrant social work

Social work professionals have relied on family systems theories to develop a variety of family-oriented interventions or treatments. For example, family clinicians have focused on family communication as an approach to reducing conflictive relationships and enhancing supportive relationships between family members (Dore, 2008). Structural family therapists, on the other hand, stress the role of parental authority and family rules in dealing with troubled children with emotional problems. However, very little research reports on use of these techniques among immigrant families. By explicitly studying the impact of parent-child interactions (including conflict, communication and family rules) on PWB among children from immigrant families, the results of this dissertation research could inform family assessment and treatment approaches among immigrants. For example, it examines particular parent-child dynamics such as intergenerational conflict, family cohesion, parent-child communication and parental control in Asian and Hispanic immigrant families, all of which could differ from those in non-immigrant families. Therefore, a clearer understanding of these factors can facilitate the application of existing family assessment tools as well as the development of new tools for different immigrant groups.

Acculturation and social work

One of the purposes of this study is to examine the effect of acculturation on PWB. Acculturation is an important construct related to psychological and social adaptation of immigrants, yet it has received more attention in other disciplines than in social work. This study examines the relationships between adolescent PWB and a
variety of items that measure different aspects of acculturation including level of acculturation, national-origin cultural attitudes (e.g., familism), and bicultural orientations. It has been proposed that social work researchers and practitioners working with immigrant populations need to be aware of the importance of biculturalism (Fong, 2003a). Rather than assume that immigrants experience an automatic process of acculturation into the host society, they may need to consider indigenous cultural values and immigrant bicultural behaviors when designing interventions for adolescents from immigrant families. One example of such programs is Strengthening Intergenerational/Intercultural Ties in Immigrant Families (SITIF) (Ying, 1999, 2007), which helps parents gain awareness of cultural differences, knowledge about American culture, as well as intergenerational communication and parenting skills aligned with new cultural values. Results from this study will help inform the extent to which such programs require modification for Asian and/or Hispanic immigrants.

In addition, there is a need to integrate the assessment of acculturation into social work practice with immigrants and their families (Fong, 2003a). But the issue remains as to how to measure acculturation more accurately. This study utilizes a range of measures of acculturation (both unidimensional and bidimensional, across different domains such as practices and values), all of which are linked to adolescent PWB. Thus, it is likely to show which type of measure is more important for social work practice with adolescents in immigrant families.

**Culturally competent services**

Immigrant families often have distinct cultures, values, histories, rituals, roles, and structures. Understanding this uniqueness lays the foundation for providing culturally
competent services to immigrants. By comparing children of Asian and Hispanic immigrants, the present study aims to identify some between-group differences in risk and protective factors for adolescent PWB. It can help program developers incorporate distinct protocols for Asian and Hispanic populations to enhance culturally responsive assessment and intervention strategies, which, in turn, could help to eliminate mental health disparities in service access and utilization.

CHAPTER II: THEORETICAL FRAMEWORK AND LITERATURE REVIEW

To examine PWB among children of immigrants, the dissertation draws on three interdisciplinary psychological and sociological perspectives (ecological systems theory, family systems theories and acculturation theories) as well as prior research to inform hypotheses about the influence of family and acculturation factors on adolescent PWB. Following a definition of PWB, prior research on PWB among Asian and Hispanic adolescents in immigrant families in the U.S. is reviewed.

Defining Psychological Well-Being

Since the theoretical framework and the literature review are intended to explain PWB among adolescents from Asian and Hispanic immigrant families, it is critical to clarify how PWB is defined in the literature. Some researchers assert that PWB is comprised of a set of psychological indices such as self-esteem, happiness, life satisfaction, and psychiatric symptomatology (Baruch & Barnett, 1986). Others contend that PWB includes additional indices such as positive relations with others, autonomy, purpose in life, and personal growth (Ryff, 1989). More recently, researchers have attempted to classify PWB into positive functioning (life satisfaction, happiness, positive
affect and higher morale) and negative functioning (mental health symptomatology, suicidal thoughts and behaviors and substance abuse) (Moreira-Almeida, Lotufo Neto, & Koenig, 2006).

In research on immigrants, PWB may be used as a substitute term for mental health conditions or outcomes (Jensen, 2007). Some have operationalized PWB with various psychological constructs including positive outcomes such as self-esteem, self-efficacy and positive affect as well as negative outcomes such as depression, internalized problems, negative affect and other psychological distress (e.g., Harker, 2001; Lee, Su, & Yoshida, 2005). In addition to these psychological constructs, behavioral dimensions including substance abuse, delinquency, and externalizing behavior issues (such as aggression, and conduct disorders) have also been viewed as dimensions of PWB (e.g., Perreira & Ornelas, 2011). For the most part, the present study does not review research on these behavioral constructs for two reasons: (1) including multiple dimensions of PWB could make it difficult to interpret results relating to the relationship between PWB and acculturation and family factors; (2) the data used for the study do not have measures of behavioral dimensions of PWB. Nevertheless, when evidence of acculturation and family factors in relation to PWB among adolescents in immigrant families is otherwise not available, the literature review incorporates studies that examine behavioral aspects of PWB.

**Ecological Systems Theory and PWB**

Ecological systems theory, proposed by Bronfenbrenner (1979), is rooted in general systems theories. General systems theorists develop their theories based on a series of assumptions: 1) a social system comprises interrelated members who constitute
a unit, or a whole; 2) there is a high degree of interdependence and internal organization among members of a social system; 3) the life of a social system is more than just the sum of its participants’ activities; and 4) the change in any one member of the social system affects its nature as a whole (Greene, 1991, p. 236). According to general systems theory, systems may be defined as “entities standing in interaction” (von Bertalanffy, 1969, p. 33). Its underlying principle is that each entity in the system is impacted by all other entities.

Consistent with this perspective, ecological systems theory contends that contextual systems at different levels may promote or delay child development. According to the theory, the contextual factors that may impact child development and well-being include four different levels: the micro-, meso-, exo-, and macro-systems. The micro-system represents an individual’s immediate context such as activities, social roles and interpersonal relations (e.g., a child’s home, peers, and school). The meso-system is depicted as interrelationships between two or more Microsystems that directly involve the child. For example, both teachers and parents directly impact the child and their interactions are viewed as part of the meso-system (similarly, for example, interactions between a child’s religious community and neighborhood). The exo-system is also composed of relationships between two or more systems, but the child may not directly function in the systems (e.g., parents’ workplaces, community-based programs). Lastly, the macro-system includes cultural values, laws and customs (Bronfenbrenner, 1994).

Ecological systems theory is useful for studying PWB among children in immigrant families. Based on this framework, investigators have proposed conceptual models that can explain PWB among children of immigrants. Jensen’s (2007) model, for
example, specifies some aspects in each level that are relevant to development among children of immigrants. Family and school environment (e.g., family interactions) and peer interactions are viewed as part of the micro-system. The meso-system includes child acculturation (e.g., acculturation practices) and interactions between micro-systems (e.g., interactions between home and school). The exo-system includes parental acculturation and parental acculturation stressors (e.g., lack of social and cultural support, economic pressure). At the macro level, cultural influences from society at large (e.g., cultural values, belief systems, lifestyles) are included.

Similarly, Johnson (2007) proposed a model for social ecology of acculturation among children of immigrants. Consistent with ecological systems theory, parental characteristics (e.g., demographics, psychological factors), and parent-child relationships (e.g., family structure, family functioning) are seen as part of the micro-system. Family social networks, residential characteristics and availability of social services are relevant factors to the exo-system. At the macro level, factors such as immigration policies and societal attitudes are included. Additionally, both Jensen (2007) and Johnson (2007) reviewed that factors from different systems may be interacting with each other and create a complicated ecological context that influences PWB of acculturating children of immigrants.

Family Systems Theories and PWB

An overview of family systems theories

A key component of micro-systems is the family system which appears to have the most significant effect on child development (Bronfenbrenner, 1994). Family systems theories are based on assumptions similar to those that underpin general systems theories
such as Bronfenbrenner’s: 1) all parts of the family are interrelated; 2) one part of the family cannot be understood in isolation from the rest of the family system; 3) the transactional patterns of the family system strongly shape the behavior of family members; and 4) family functioning cannot be fully understood by simply understanding each of the individual family members or subgroups (Miller, Ryan, Keitner, Bishop, & Epstein, 2000, p. 169). From this point of view, a family is defined as a social system consisting of members who not only live in one household but impact each other in terms of individual functioning (Ackerman, 1984; Terkelsen, 1980).

Family systems theorists argue that, as part of the family system, what one family member does or experiences in his/her daily life influences other family members (Ponzetti, 2002). In addition, family is a complicated system encompassing various smaller units or subsystems, such as marital, parent-child, and sibling subsystems, which also interact with each other (Minuchin, 1974; Ponzetti, 2002). Furthermore, interactions between family subsystems also impact individual behaviors. Therefore, family systems theories emphasize family dynamics as a locus of interventions to address individual problems (Greene, 1991).

The Circumplex Model of Marital and Family Systems

Based on family systems theories, there are many different perspectives on family assessment and therapy (Dore, 2008). A full review of these perspectives is beyond the scope of this study. Instead, the study reviews two integrative models that are derived from or related to various family systems perspectives. On the one hand, the Circumplex Model of Marital and Family Systems (CMMFS), developed by Olson (Olson, 2000), is a useful framework that is developed for assessing and treating families with a focus on
family functioning. It is informative for this study as family functioning is likely to predict individual adjustment from a family systems perspective. On the other hand, developmental psychologists also contribute to the family systems theories by articulating the role of parent-adolescent conflict in shaping adolescent development outcomes.

According to Olson (2000), the CMMFS involves three aspects of family dynamics, including cohesion, flexibility and communication. Family cohesion is defined as the emotional bonding that family members have towards one another. Typically, a well-functioning family maintains separated (low to moderate) or connected (moderate to high) levels of cohesion as opposed to disengaged (very low) and enmeshed (very high) cohesion within a dysfuncitoning family. Flexibility pertains to the change in family’s leadership (e.g., discipline and control), roles (e.g., caretaker and bread-earner) and rules (e.g., rules regarding TV watching and dating for children). It can also be described in terms of levels: rigid (very low), structured (low to moderate), flexible (moderate to high), and chaotic (very high). Families with structured and flexible roles and rules tend to function better than those with rigid and chaotic roles and rules. Finally, in Olson’s model, communication is an additional dimension which facilitates movement on the other two dimensions. Communication is the flow of information between and among family members (Greene, 1991). It may be measured by its content (e.g., children talk about school experience with their parents), as well as its format such as listening skills, speaking skills, information clarity and continuity tracking (Dore, 2008; Olson, 2000).

**Family autonomy, harmony and conflict**

Developmental psychologists have addressed the role of family systems by conceptualizing three key dimensions with respect to parent-adolescent relationships,
namely (a) autonomy, (b) harmony, and (c) conflict (Steinberg, 1990). While autonomy and harmony are in alignment with the dimensions of flexibility and cohesion in Olson’s (2000) model, developmental psychologists have greatly contributed to family systems theories by addressing the role of IC. Unlike psychoanalytic theorists, who insist that IC may be normative, typical and even desirable during adolescence, developmental psychologists argue that the majority of adolescents maintain a healthy relationship with their parents (Steinberg, 2001). If conflict does exist between parents and adolescents, it is often not as intense as the level of angry fight or hostility (Steinberg, 1990). As for the conflictual issues, mundane issues of daily life (including chores, attire, and curfew) are at the core of intergenerational problems (Lee, 2004; Smetana, 1988a, 1989; Steinberg & Silk, 2002). Parents and adolescents often have different understandings about these issues, i.e., parents’ view of mundane issues as conventional or moral issues vs. adolescents’ view as personal issues, which renders the relationship vulnerable to conflict (Collins, 1990; Smetana, 1988b). Therefore, not necessarily a function of adolescence, IC may result from adolescents’ new perceptions of autonomy, family rules and parental authority as they enter puberty (Steinberg & Silk, 2002).

**Family dynamics and PWB**

**Studies on adolescents in the general population**

Developmental psychologists have linked various dimensions of family dynamics (especially parent-child relationships) to PWB among adolescents in the general population. (For a detailed review, see Steinberg & Silk, 2002). As for the relation of IC to PWB, evidence first supports the association between different types of family conflict and PWB. For instance, marital conflict, parent-adolescent conflict, and general family
conflict, have all been found to be associated with lower self-esteem, more anxiety, derogation and suicidal ideas among adolescents (Shagle & Barber, 1993; Slater & Haber, 1984). Parent-child conflict, in particular, has been linked to emotional and behavioral problems, as well as various childhood mental disorders (Burt, Krueger, McGue, & Iacono, 2003; Chaplin et al., 2012; Conger, Ge, Elder, Lorenz, & Simons, 1994).

However, mild parent-child conflict could be a positive influence on adolescent development, especially when the family displays high cohesion, pointing to the possibility of an interaction between cohesion and IC in relation to PWB (Cooper, 1988).

Regarding the relation of PWB to family cohesion, adolescents who report higher levels of cohesion or harmony with their parents tend to have better psychosocial well-being (Garber, Robinson, & Valentiner, 1997). Longitudinal analysis also suggests higher family cohesion is related to better adolescent self-esteem over time (Baldwin & Hoffmann, 2002). In addition, parental monitoring (such as more parental rules of adolescent activities) is found to predict better psychological outcomes such as lower level depression (Jacobson & Crockett, 2000; Linver & Silverberg, 1997), although excessive control may lead to opposite outcomes (Garber et al., 1997).

Finally, open and less problematic parent-adolescent communication is related to better adolescent PWB including higher self-esteem and positive affect (Jackson, Bijstra, Oostra, & Bosma, 1998). For instance, parent reports of higher quality of parent-adolescent communication is negatively associated with depression and anxiety among adolescents (Hartos & Power, 2000). It has also been suggested that a bidirectional communication process between parents and their adolescent children could be particularly important for promoting adolescents’ positive well-being (Kerr & Stattin,
Studies on adolescents in immigrant families

Studies show that IC is more likely to occur in immigrant families than in nonimmigrant families (Kwak, 2003; Lee, 2004; Stuart, Ward, Jose, & Narayanan, 2010). Kwak (2003, p. 121), for example, noted three reasons that may contribute to relational difficulties between immigrant parents and their adolescent children. First, as adolescents acculturate more quickly than their parents, they may disagree with parents on the process of family socialization. Second, IC may occur when parents try to transmit their cultures of ethnic heritage to the younger generation. Third, confronted with two distinct cultures simultaneously, adolescents in immigrant families may have a delayed self-concept and are thus less committed to new family roles.

In addition, Stuart and colleagues (2010) posed a framework of IC in immigrant families which emphasizes the roles of cultural maintenance, cultural adjustment, family dynamics change and links with extended family in determining intergenerational disagreement. According to Stuart et al. (2010), adolescents from immigrant families mostly complain about their lack of privacy, low parental trust and overwhelming control from their parents in peer relationships and dating. These acculturation-related discords may lead to aggravated IC. In addition, these kinds of conflicts do not preclude the existence of normative conflict due to adolescents’ developmental needs for more autonomy in issues such as media, money, housework, clothing etc. However, as Fuligni (1998b) noted, the compounding effect of development may become less significant than that of acculturation experiences for Asian and Hispanic adolescents in immigrant families.
Mounting research has investigated the association between IC and PWB of adolescents from immigrant families. Findings are extremely consistent in terms of the detrimental effect of IC on adolescent PWB. Evidence of the positive association between IC and depression and other mental health issues, for instance, has been reported among adolescents from different immigrant groups, including Asians such as Chinese (Lim, Yeh, Liang, Lau, & McCabe, 2009; Shek, 1998), Vietnamese (Phinney & Ong, 2002) and Filipinos (Ying & Han, 2006), as well as Hispanics such as Mexicans (Behnke, Plunkett, Sands, & Bámaca-Colbert, 2011; Pasch et al., 2006), Salvadorans (Behnke et al., 2011; Smokowski, Rose, & Bacallao, 2010), and Colombians (Smokowski et al., 2010).

However, it is less clear how IC may interact with other family constructs, such as family cohesion, in shaping adolescents’ psychological outcomes. For instance, the effect of IC on PWB may be less detrimental for adolescents from immigrant families with higher level of family cohesion, as suggested by the developmental psychology literature.

Although immigrant parents may stress and nurture family cohesion among their adolescent children (Kwak, 2003), empirical research on the effect of family cohesion on PWB among adolescents from immigrant families is still lacking. Evidence of the effects of parent-child communication and parental monitoring is also limited. Existing evidence reveals that more open communication is predictive of higher self-esteem among the first and second generation of children of Asian immigrants (Rhee, Chang, & Rhee, 2003). In addition, studies on Hispanic adolescents from immigrant families have attributed adolescent substance use to insufficient parental monitoring, but not to less cohesive family environment or communication (Wagner et al., 2010).
Acculturation Theories and PWB

A unidimensional perspective on acculturation

Historically, acculturation has been defined as “phenomena which result when groups of individuals having different cultures come into continuous first-hand contact with subsequent changes in the original culture patterns of either or both groups” (Redfield, Linton, & Herskovits, 1936, p. 149). Based on this definition, acculturation theories first involve different perspectives on the dimensionality of acculturation. On the one hand, some theorists perceive that acculturation is a unidimensional process in which the acculturating individual moves on a continuum ranging from heritage culture to mainstream culture. In other words, he/she loses heritage culture when adapting to receiving culture (Gordon, 1964). Therefore, immigrants’ involvement in U.S. culture and in national-origin culture is mutually exclusive. Since this is a classic perspective and has been widely accepted, researchers (e.g., Dinh, Roosa, Tein, & Lopez, 2002; Jensen, 2007; Pasch et al., 2006) still follow this tradition and study acculturation in terms of its “level” or “degree” (Berry, 2003, p.22). For example, Pasch and colleagues (2006) measured acculturation in term of language use with friends (a 5-point Likert scale ranging from “Only Spanish” to “Only English”).

Unidimensional acculturation and PWB

From a unidimensional perspective, evidence is inconclusive in terms of the impact of acculturation on PWB. Traditionally, a high level of acculturation (e.g., assimilation) is believed to be related to less acculturative stress and in turn, fewer mental health problems in immigrants (Organista, Organista, & Kurasaki, 2003). For instance, more acculturated Asian-American adolescents of Chinese, Korean, and Japanese
backgrounds were found to display fewer mental health symptoms (e.g., depression) than their counterparts less acculturated into U.S. culture (Crane, Ngai, Larson, & Hafen, 2005; Yeh, 2003). Conversely, high level of acculturation is also seen as a risk factor for psychological distress among immigrants (Falicov, 2005). In one study, for example, more acculturated Chinese youth (measured by preference in speaking English) were more likely to have social adjustment difficulties including negative self-images and low self-esteem (Florsheim, 1997). Still, in another study on adolescents in Puerto Rican immigrant families, evidence revealed no relationship between youth acculturation level and their internalizing behaviors (Duarte et al., 2008).

As to the relation of national-origin orientations to PWB, researchers generally agree that culture-of-origin involvement (e.g., holding on to cultural values of family embeddedness) is an asset associated with better adolescent outcomes (Kwak, 2003; Smokowski, Rose, & Bacallao, 2008). For instance, a strong sense of certain familistic values perceived by adolescents has been found to be associated with better PWB among adolescent children of both Asian (e.g., Juang & Cookston, 2009) and Hispanic immigrants (e.g., Smokowski & Bacallao, 2007; Smokowski, Chapman, & Bacallao, 2007; Smokowski et al., 2010).

In addition, few empirical studies have examined the effect of parental acculturation on adolescents PWB. Existing evidence indicates that Hmong adolescents in immigrant families who perceive their parents as more acculturated into the U.S. society (e.g., behaviors, attitudes) tend to have more behavior problems and mental health symptoms (e.g., anxiety) than those who perceive their parents as less acculturated; however, Hmong parents’ reports of their own acculturation were not significantly
associated with adolescent psychological outcomes (Xiong, 2005). These results revealed parental acculturation levels may vary simply due to different methods of data collection (i.e., parents’ own report vs. adolescents’ perceptions).

**A bidimensional perspective on acculturation**

**Berry’s acculturation theory**

Recently, more and more researchers have begun to argue that maintenance of traditional culture and endorsement of dominant culture coexist with one another (De La Rosa, 2002; Dinh et al., 2002; Thomas, 1995). Some even argue that only bidimensional measures of acculturation should be used in research (Arends-Toth & van de Vijver, 2006). Consistent with this view, Berry’s (1997) acculturation theory is probably the most well-known theory centering on acculturation strategies.

As shown in Figure 1, the two lines with arrowheads on both sides indicate that acculturation involves two dimensions: cultural adaptation and cultural maintenance. By categorizing cultural maintenance and adaptation into low and high levels, Berry (1997) identifies four acculturation strategies: assimilation, separation, integration, and marginalization. Figure 1 also shows these four strategies based on the levels of cultural adaptation and maintenance. Assimilation is defined by high involvement in the dominant culture but low involvement with ethnic culture. Separation is the opposite of assimilation: high in ethnic culture and low in dominant culture. Integration means high involvement in both cultures, and marginalization denotes low involvement in both cultures (Berry, 1997, 2003, 2006).
Berry’s acculturation theory is inherently consistent with biculturalism, which is described as a status where the acculturating individual embraces heritage culture and receiving culture simultaneously (Berry, 1997). Bicultural individuals may keep two cultures separate in different aspects of acculturation, but they are also likely to integrate two cultures into a unique blend (Schwartz, Unger, Zamboanga, & Szapocznik, 2010). Therefore, bicultural acculturation is similar to the integration strategy of Berry’s acculturation theory which stresses high levels of both cultural adaptation and maintenance (Berry, 1997; Kim & Choi, 1994; Romero & Roberts, 2003).
Bidimensional acculturation and domains of acculturation

Acculturation may include two different domains (i.e., values and practices or behaviors). The smaller boxes in Figure 1 aligned along the two middle lines specify the two domains of acculturation. The behavioral domain of acculturation (i.e., acculturation with respect to cultural practices) refers to more overt changes in the acculturation process, including language, lifestyle, customs and other cultural practices (Schwartz et al., 2010; Szapocznik, Scopetta, Kurtines, & Aranalde, 1978). Value acculturation (i.e., acculturation with respect to cultural values), in contrast, involves the less overt part of acculturation and may take gradual adaptation on the part of immigrants (Schwartz et al., 2010).

Although Berry’s theory tends to emphasize the behavioral domain of acculturation (i.e., acculturation with respect to cultural practices), the bidimensional perspective is coherent with both domains of acculturation (Schwartz et al., 2010). For example, behavioral acculturation may involve American behaviors, national-origin behaviors, bicultural behaviors and marginalized behaviors (not embracing either behavior). Similarly, for Asian and Hispanic immigrants, value acculturation may include individualism of U.S. culture, collectivism of national-origin cultures, bicultural values, and marginalized values.

Adolescent bidimensional acculturation and PWB

From a bidimensional perspective, it has been often suggested that bicultural orientations (high scores on both the cultural adaptation scale and the cultural maintenance scale), as opposed to a unicultural orientation, may help to protect against psychological distress and promote better well-being (e.g., Berry, 2006; LaFromboise,
Coleman, & Gerton, 1993; Smokowski et al., 2008). These orientations may help adolescent children of immigrants deal with strains related to parental authority and discrimination from host society and therefore retain better PWB (Portes & Rumbaut, 2001). Empirical evidence, for example, indicates that biculturalism (measured by behavioral acculturation such as home language use and ethnic social relations) is protective against depression among Mexican American adolescents in immigrant families (Love & Buriel, 2007). Researchers have also suggested that when describing themselves as associated with both American identity and ethnic identity, adolescents from immigrant families show better psychological adjustment outcomes (LaFromboise et al., 1993; Phinney, Horenczyk, Liebkind, & Vedder, 2001).

As for the effect of integration as a bicultural orientation, similarly, many studies support the association between the integration strategy and better psychological and sociocultural adaptation outcomes among adolescents in immigrant families (Berry, 2006; Phinney et al., 2001; Updegraff & Umana-Taylor, 2010). For example, researchers have reported higher self-esteem among American-born Asian Indian adolescents who use integration as their acculturation strategies (Farver, Narang, & Bhadha, 2002). Among Mexican American adolescents, likewise, adolescents equally involved in both Mexican and Anglo cultures were found to show less depressive symptoms than those more involved in Mexican culture and less so in Anglo culture (Updegraff & Umana-Taylor, 2010).

**Interrelations between IC, Family Dynamics and Acculturation Factors**

According to ecological systems theory, different systems within one level may be influencing each other in shaping child development outcomes. For instance, at the
micro-level, different measures of family dynamics may interact with each other. Meanwhile, factors from different levels of systems depend on and interact with one another. For instance, the macro-system has cascading influences through the other levels and components within each system interact and influence one another. Likewise, family factors within the micro-system may interact with factors of the meso-, exo- and macro-systems.

Informed by ecological systems theory, how factors within a level or between different levels may interact with each other in shaping adolescent psychological outcomes is the focus of the study. Since the micro-system is assumed to be the most influential in shaping child development, this dissertation focuses on the effect of IC and its interactions with other family and acculturation factors. Existing research suggests at least three possible patterns: the interactions between IC and family cohesion (within the micro-level), familism (between the micro- and macro-level) and adolescent bicultural acculturation (between the micro- and meso-level).

**IC and family cohesion**

Family cohesion and IC have been examined together in relation to other constructs of family dynamics and societal factors. For example, good parent-child communication was found to be positively related to family cohesion but negatively to IC (Xia, Xie, Zhou, Defrain, & Combs, 2004). Also, among Chinese American adolescents, IC exacerbated the harmful effect of discrimination on adolescent well-being but family cohesion mitigated this effect (Juang & Alvarez, 2010). These results suggest that IC and family cohesion may be negatively associated and counteractive with each other in shaping adolescent outcomes. For example, among adolescents in general populations,
evidence indicates that IC could benefit adolescent PWB especially when the levels of family cohesion or harmony are high (Steinberg & Silk, 2002).

**IC and familism**

Research on both Asian and Hispanic adolescents from immigrant families revealed that familistic values were related to better family dynamics as indicated by lower levels of parent-child conflict and higher family cohesion (Fuligni, Tseng, & Lam, 1999; Kuhlberg et al., 2010). With respect to the relation of PWB to familism and IC, familism has been found to be a mediator between IC and psychological and social adjustment of adolescents from immigrant families (Smokowski & Bacallao, 2006), but evidence also supports that its effect on adolescent outcomes could be mediated by IC (Kuhlberg et al., 2010; Smokowski et al., 2007).

Familism and IC could interact with each other in shaping PWB among adolescents from immigrant families. It has been reported, for example, that familism moderates the effect of mother-child relationships on psychosocial outcomes (e.g., emotional adjustment and social functioning) among preschool-aged children of Mexican immigrants (Gamble & Modry-Mandell, 2008). To date, however, evidence of the effect of familism-by-IC interaction on PWB among adolescents from immigrant families has been rare.

**IC and adolescent bicultural acculturation**

Theorists assume that bicultural acculturation (both adolescent and parental) could decrease parent-child cultural differences and mitigate the intensity of IC, which, in turn, may improve adolescent PWB (Szapocznik et al., 1989). Based on this assumption, programs that increase adolescent and parental bicultural competencies have been
developed and tested among Cuban American families as well as other Hispanic families (Szapocznik et al., 1986; Szapocznik, Santisteban, Kurtines, Perez-Vidal, & Hervis, 1984). These programs were found to be effective in improving intergenerational relationships and reducing adolescent problem behaviors (e.g., Szapocznik et al., 1989), suggesting the harmful effect of IC on adolescent well-being could be eliminated by bicultural acculturation. In addition, another study found that a bicultural identity significantly reduced the damaging effect of acculturation stress on PWB of Asian and Hispanic adolescents in immigrant families (Johansen, 2011). Since some view IC due to acculturation differences as one type of acculturation stress (Szapocznik et al., 1989), Johansen’s (2011) study could lead us to argue that bicultural acculturation may lessen the negative effect of IC on PWB.

Summary

Figure 2 presents a model that synthesizes the theory-driven review of research on PWB among adolescent immigrants. It is consistent with ecological systems theory and Jensen’s (2007) and Johnson’s (2007) theoretical models of PWB among adolescents in immigrant families, posing four levels of ecological factors that are related to PWB of adolescents in immigrant families, i.e., factors of micro-, meso-, exo- and macro-systems (as shown by the four larger ovals in Figure 2). Family dynamics are included at the micro level because both theory and the literature underpin their importance. Furthermore, the meso-system includes adolescent acculturation behaviors, both unidimensional and bidimensional. The interaction within the micro-system is also part of the meso-system, i.e., that between IC and family cohesion (as shown by double-headed arrows within the micro-system). Parental acculturation is the contextual factor relevant to the exo level.
The macro-system incorporates adolescent acculturation values. Finally, the interrelationships between different levels of ecological systems are salient for this model, i.e., those between IC and familism and adolescent bicultural acculturation (as shown by double-headed arrows across systems).

Figure 2
The synthesized theoretical model

Meanwhile, the model is consistent with family system theories, which are focused on four dimensions of family interactions (i.e., family cohesion, IC, parental control and parent-child communication, not shown in the figure). Similarly, acculturation theories are reflected in this model by factors such as adolescent acculturation (behaviors as part of the meso-systems), parental acculturation behaviors
Informed by this synthesized theoretical model, the present study examines the differences and similarities between Asian and Hispanic adolescents in terms of the following three major research questions. The first is concerned with the effects of family dynamics on PWB of adolescents from Asian and Hispanic immigrant families. The developmental psychology literature clearly indicates that one of the most significant impacts on adolescent PWB is family dynamics. But do these factors play the same role in immigrant families? For instance, does IC play a negative role for PWB of adolescents from immigrant families? How do family cohesion, parental monitoring and parent-child communication affect their psychological outcomes?

The second major question is focused on the effects of acculturation on PWB of adolescents from immigrant families. Informed by acculturation theories, the effects of unidimensional acculturation (both adolescent acculturation and parental acculturation) and adolescent bicultural acculturation are investigated. Specifically, do adolescent levels of U.S. acculturation and PWB have an inverse relationship or a positive relationship? How do adolescents’ perceptions of familism influence PWB? Is familism a protective factor for PWB? Do parental levels of U.S. acculturation also impact adolescent PWB? Does adolescent bicultural acculturation positively influence PWB?

In addition, the ecological systems theory suggests that these factors could impact each other in shaping individual outcomes. As reviewed previously, the following three questions warrant our consideration: Is the detrimental effect of IC on adolescent PWB mitigated by higher levels of family cohesion? Is the effect of IC conditional on the level
of adolescent perceived familism? Does adolescent bicultural acculturation moderate the effect of IC on adolescent PWB?

**CHAPTER III: METHODOLOGY**

This chapter describes the methodology of the study and covers the following sections: research questions and hypotheses, research design (including data and sample), measures of study variables and data analysis strategy (including hierarchical regression and strategies of how to handle missing data).

**Research Questions and Hypotheses**

Using data from the Children of Immigrants Longitudinal Study (CILS), this dissertation research seeks to discover differences and similarities between Asian and Hispanic adolescents in terms of the following questions: (1) How do family dynamics (i.e., IC, family cohesion, parental monitoring and parent-child communication) influence PWB of adolescents from immigrant families? (2) How do adolescent and parental acculturation influence PWB of adolescents from immigrant families? And (3) Do family dynamics and acculturation factors interact with each other in shaping PWB of adolescents from immigrant families? These questions are addressed by testing the following 11 specific hypotheses for Asian and Hispanic adolescents separately.

**Hypotheses regarding family dynamics**

H1: IC is negatively associated with PWB of adolescents from immigrant families. H2: Family cohesion is positively associated with PWB of adolescents from immigrant families. H3: Parent child communication is positively associated with PWB of adolescents from immigrant families. H4: Parental monitoring is positively associated
with PWB of adolescents from immigrant families.

**Hypotheses regarding acculturation**

H5: Adolescent levels of U.S. acculturation are positively associated with PWB of adolescents from immigrant families. H6: Higher familism perceived by adolescents is associated with better PWB of adolescents from immigrant families. H7: Adolescent bicultural acculturation is related to better PWB of adolescents from immigrant families than U.S. acculturation and national-origin acculturation. H8: Parental levels of U.S. acculturation are negatively associated with adolescent PWB.

**Hypotheses regarding interactions**

H9: Family cohesion mitigates the harmful effect of IC on PWB of adolescents from immigrant families. H10: Familism decreases the harmful effect of IC on PWB of adolescents from immigrant families. H11: Adolescent bicultural acculturation decreases the harmful effect of IC on PWB of adolescents from immigrant families.

**Research Design**

**The Children of Immigrants Longitudinal Study**

This study uses a quantitative approach and involves secondary data analysis. The data are part of the Children of Immigrants Longitudinal Study (CILS; Portes & Rumbaut, 1991), which was designed to study the adaptation process of children of immigrants in the U.S. In the literature, “children of immigrants” (or “children in immigrant families”) is an umbrella term for children of the second, 1.5, and first generations (Nord & Griffin, 1998). Generally, the first generation includes children who were foreign born but immigrated to the U.S., and the second generation includes children of foreign-born parents who were born in the U.S. (Harris, 1999; Perreira & Ornelas, 2011). Within the
first generation, the term “1.5 generation” may be used to denote children born abroad but brought to the U.S. at an early age (e.g., before adolescence or age 12) (Portes & Rumbaut, 2001). In this sense, the term “first generation” only includes foreign-born children who immigrate to the U.S. at age 12 or older. Sometimes, the term “second generation” is used in a broader sense in order to include children of the 1.5 generation (Portes & Rumbaut 2001). Corresponding to the above classification, the sample of the CILS study included children of immigrants from both the second generation and the 1.5 generation, although the principle investigators (PIs) often referred to the sample broadly as “the new second generation” (Portes & Rumbaut 2001, p. 22).

In 1992, a total of 5,262 students, who were attending the 8th and 9th grades (aged from 13 to 17 years), filled out the Youth Adaptation and Growth Questionnaire regarding their national origin, parental education and occupation, family relationships, and social and psychological adaptation outcomes. Initially, the participants of the study came from a variety of different ethnic backgrounds (more than 70 nationalities). About half of the participants were female (N=2,887, 51.0%) and born in the United States (N=2,630, 50.0%).

Three years later, original participants were reinterviewed when they were about to graduate from high school. Although there was some loss to follow-up (19% of the original sample), the possibility of sampling bias was eliminated by the PIs of the CILS. They compared the retained to lost participants on measures in the first survey and found no differences in terms of gender, generation status, national origin, and other relevant characteristics (Portes & Rumbaut, 2001, 2005). One exception, however, did exist, which indicated adolescents from intact families (living with both biological parents)
were slightly overrepresented in the follow-up sample. But the follow-up sample was still fully representative of the original sample, as concluded by the PIs (Portes & Rumbaut, 2005).

In addition, to complement the adolescent data, the follow-up study included a parental survey which provided additional information on the adolescents’ family and social context. This survey was carried out simultaneously with the second adolescent survey. However, to reduce the complexity of locating and interviewing so many non-English speaking parents, parents of about half of the adolescents who participated in the follow-up survey were interviewed (N=2,442). Parents were selected randomly with differential probabilities by national origins to ensure a sufficient representation of participants from each national origin (Portes & Rumbaut, 2005). No languages other than English were used in the development of the survey instrument or the interview process.

Starting in 2001, a final survey was conducted among 3,613 respondents (68.9% of the original sample and 84.3% of the first follow-up) when they had reached early adulthood. The survey instrument used was quite different from the two used in previous surveys. It was much shorter and focused on patterns of adaptation in early adulthood (such as educational attainment, employment and occupational status, income, civil status and ethnicity of spouses/partners). Due to the high attrition rate from the first to final survey, the PIs recommended taking into account the potential sampling bias when using data from the final survey.
Because the study relies on de-identified publically available data, an exemption to the institutional review board (IRB) approval was received from the Office of Regulatory Research Compliance at University at Albany, State University of New York.

**Sampling procedure and data collection**

To ensure sufficient coverage of children of both Asian and Hispanic immigrants (new immigrants since the 1965 immigrant law), participants were recruited from two metropolitan areas: Miami/Ft. Lauderdale in Florida and San Diego in California. The rationale for doing this was explained clearly by one of the PIs (Rumbaut, 1994).

Specifically, in early 1990s, San Diego was already among the urban areas with greatest concentrations of immigrants from Mexican, Filipino, Vietnamese and Cambodian national-origins in the U.S; and it was also the primary settlement place for Laotian immigrants in the country. Similarly, the greater Miami area had the greatest concentrations of Colombian and Jamaican immigrants in the U.S. It was also the primary settlement area for Cubans and Nicaraguans living in this country. This diverse sample makes it possible for researchers to make comparisons between Asian and Hispanic groups.

Because of the lack of prior knowledge of children of immigrants, a full probability design was not plausible when the CILS study was first started. Instead, in the areas of greater Miami and San Diego, the participants of the original survey were recruited in a total of 49 junior high schools. Adolescents in greater Miami and San Diego constituted 54.0% (N=2,842) and 46.0% (N=2,420) of the original sample, respectively. In addition, at each site, about 75% adolescents in the subsample were recruited from local major immigrant groups. Among these groups, the number of
adolescents from a certain ethnic group was determined based on the proportion of their ethnic group in the total immigrant population in the area. The remaining quarter of the local subsample was composed of adolescents from smaller nationalities in the area.

At the time of the first survey, all 8th and 9th graders at each school took a brief survey to determine eligibility. The eligible students had to have at least one foreign-born parent, and to be either U.S.-born or foreign-born but brought to the U.S. by age 12. In addition, all foreign-born adolescents needed to live in the U.S. for at least 5 years in order to participate. Informed consent was then acquired from parents of eligible students. Finally, those who returned consent forms completed the interview at school and filled out the survey questionnaire. At the time of the follow-up survey, most students were able to be located and reinterviewed at school. But for some respondents who had relocated or dropped out of high school, questionnaires were completed through either home visits or mail surveys. For students who had returned to their country of origin, data were collected through telephone interviews, but this was rarely the case. Unlike the first two surveys where data were collected mostly in school, during 2001-2003, a second follow-up survey was conducted, by far, through mailed questionnaires because most respondents had left school during that time.

**Analytic sample**

By and large, most of the data analyzed for the present study are from the first follow-up survey of the CILS. Data from the first survey are adolescent gender, age, national origin, ethnicity and generation status, which were collected in the first survey. One of the reasons for relying on the follow-up survey is that parental data were only available in this survey. In addition, measures of some variables of interest are not
available in the first or final survey. Among all the participants of the follow-up survey (N=4,288), only those with an Asian or Hispanic origin are retained for the present study (N=3,863).

In addition, since parental data are vital for this study, Asian and Hispanic adolescent data are retained only if their parents also participated in the parental survey during the follow-up study. This results in a study sample of 2,088 adolescents and their parents. The sample as a whole was composed of older adolescents (M=17.17, SD=.86) and about two-thirds (66%) of them aged less than 18 years. About 85% of the sample had lived in the U.S. for more than ten years. Nearly half (45%) of the sample was born in the U.S. The mean Grade Point Average (GPA) among the sample was 2.64 (SD=.93). The average number of household members of the sample was 4.14 (SD=1.80) and most (71%) of them lived in an intact family.

For the purpose of hypothesis testing, the final sample is divided into two subsamples: the Asian subsample includes Filipinos, Vietnamese, Laotians, Cambodians, Hmong, Chinese and “other” Asian groups; the Hispanic subsample includes Cubans, Mexicans, Nicaraguans, Colombians, Dominicans and “other” Hispanic groups. Nearly half (45%, N=946) of the sample was of Asian origin. Among them, Filipino adolescents constitute the largest group in the Asian subsample (39%), followed by Vietnamese (26%), Laotians (14%), Cambodians (9%), Hmong (5%), Chinese (3%) and other Asians (3%). In the Hispanic subsample (55%, N=1,142), the largest ethnic group is Cuban (32%), followed by Mexican (29%), Nicaraguan (16%), Colombian (8%), and Dominican (3%). The Hispanic subsample also includes Hispanic adolescents who came from other South American countries (8%) and other Central American countries (4%).
As shown in Table 1, Asian and Hispanic adolescents were significantly different in age, generation status, length of residence, GPA, family structure and family size. Asian adolescents had a smaller length of residence in the U.S. than their Hispanic counterparts. However, Asians were older, maintained higher GPA and had a larger family size than Hispanics. They were also more likely to be born in foreign countries and live in an intact family.

**Measures**

Most of the measures of interest are mostly quantitative scales (e.g., the Rosenberg Self-esteem Scale) or indexes (e.g., the IC index and the family cohesion index). Some of the measures, such as bicultural acculturation, are comprised of one-item questions. Except for parent-child communication and parental control which are reported by parents, all other variables are based on adolescent data.
Table 1
Descriptive statistics of all study variables (except for national origin) by ethnicity (N=2,088)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Asian</th>
<th>Hispanic</th>
<th>p (t or χ²)</th>
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<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>M (SD)</td>
<td>Range</td>
</tr>
<tr>
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<td>Female</td>
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<td>552 (48.3)</td>
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<td>13 (1.1)</td>
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</table>
| **Notes:** National origins omitted because no comparison was made between the two groups. Highlights indicate significant differences in missingness between the two groups. *p<.05, **p<.01, ***p<.001**
Dependent variable: Psychological well-being

Psychological well-being of adolescents from immigrant families is the dependent variable for the study. A variety of measures can serve as indicators for PWB, but this study uses self-esteem as an indicator of PWB because it is highly related to other psychological outcomes and is often deemed as a central feature of mental health of adolescents (Rhee et al., 2003; Ryff, 1989).

Self-esteem is measured by the Rosenberg Self-esteem Scale (Rosenberg, 1965), which includes 10 questions with four-point Likert scale response options ranging from “Agree a lot” to “Disagree a lot”. Two illustrative questions are: “On the whole I am satisfied with myself” and “At times I think that I am no good at all”. For the purpose of this study, negative items were reverse coded and the scale was constructed in a way that the literature recommends: ranging from 0 to 3, with 0 indicating low self-esteem (Greenwald & Farnham, 2000). The scores of each item were summed up to indicate an overall evaluation of adolescents’ self-esteem (ranging from 0 to 30, with 0 indicating lowest self-esteem). In terms of the reliability of the scale, it has good test-retest reliability (with correlation coefficient ranging from .82 to .88), and internal reliability (with Cronbach’s alpha ranging from .77 to .88) (Rosenberg, 1986). The Cronbach’s alpha for the scale in this study is .84, .83, and .82, for the total sample, the Asian subsample, and the Hispanic subsample, respectively. According to commonly accepted rule of thumb (George & Mallery, 2010), this scale has good reliability (i.e., $0.8 \leq \alpha < 0.9$).
Independent variables

A total of four family variables and three acculturation variables are examined in the study. Family variables include IC, family cohesion, parental control and parent-child communication. Acculturation variables include adolescent and parental U.S. acculturation, adolescent familistic values and bicultural orientations. The selection of these variables is justified by the theoretical model as well the literature review presented earlier. Table 2 lists the theoretical dimensions, measures for each independent variable and reliability scores for each index.

Family variables

*Intergenerational conflict (IC).* IC is assessed by adolescents’ perceptions of intergenerational conflict. They IC index includes four items with Likert response scales ranging from “All of the time” to “Never”, or from “Very true” to “Not true at all”: (1) “How often do you get in trouble because your way of doing things is different from that of your parents?” (Ranging from (2) “My parents do not like me very much”; (3) “My parents and I often argue because we don’t share the same goals” and (4) “My parents are usually not very interested in what I say”. The IC index was constructed by PIs of the CILS study and has been used by other researchers (Portes & Rumbaut, 2001; Ying & Han, 2007b). The items were recoded so that higher scores indicate greater levels of perceived IC. The mean of the 4 items is calculated to achieve an overall IC score, with a possible range from 1 to 4. The reliability of the IC index has acceptable reliability in the total sample of this study, with a Cronbach’s Alpha equal to .71. For the Asian and Hispanic subsample, reliability scores of this index are .72 and .69, respectively (see Table 2).
<table>
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<th>Ecological Level</th>
<th>Theory</th>
<th>Concept</th>
<th>Variable</th>
<th>Measure</th>
<th>Reliability</th>
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<td>Exo</td>
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<td>Parental levels of U.S. acculturation</td>
<td>Parental English knowledge index</td>
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<tr>
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<td>.98</td>
<td>.96</td>
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<td>Meso</td>
<td>Bidimensional</td>
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<td>Adolescent English knowledge index</td>
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<td>.89</td>
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<td>.88</td>
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<td></td>
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<td>Adolescent language preference</td>
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<tr>
<td>Within micro- systems</td>
<td>Family systems theories &amp; Interactions</td>
<td>Family cohesion &amp; IC Indicators of family cohesion index X Indicators of IC index</td>
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<td></td>
<td></td>
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<tr>
<td>Micro- &amp; Macro- systems</td>
<td>Family cohesion &amp; IC &amp; Adolescent familism Indicators of IC index X</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Micro- &amp; Meso- systems</td>
<td>Family cohesion &amp; IC &amp; bicultural acculturation Indicators of family cohesion index X Indicators of IC index X measures of adolescent bicultural acculturation</td>
<td></td>
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</table>
*Family cohesion.* Adolescents’ perceptions of family cohesion is measured by an index composed of three 5-point Likert-type items: (1) “Family members like to spend free time with each other”; (2) “Family members feel very close to each other”; and (3) “Family togetherness is very important” (All items ranging from “Never” to “Always”). The mean of the three items is taken to show the overall level of family cohesion, with a potential range of 1 to 5. The family cohesion index has been used in research by PIs as well as other investigators (Portes & Rumbaut, 2001; Rumbaut, 2005; Ying & Han, 2008a, 2008b). The reliability scores of this index in the total sample, Asian subsample and Hispanic subsample are .85, .83, and .84, respectively.

*Parent-child communication.* Parent-child communication is measured by a communication index consisting of 2 questions regarding parents’ perceptions of intergenerational communication patterns. Specifically, they include (1) “How often do you or your spouse/partner talk with your child about his or her experience at school?”; and (2) “How often do you or your spouse/partner talk with your child about his or her educational plans for after high school? ”. Both questions are rated on a 4-point Likert response scale, ranging from “Not at all” to “Regularly”. This index was created based on a previous recommendation of using it to measure communicative/reserved dynamic between parents and adolescents (Thomas, 2004). The mean score of the two items is computed to estimate the overall communication level (possible range=1~4).

*Parental control.* Parental control is measured by an index of family rules. Specifically, parents responded yes or no to six items about the rules they set for their adolescent children at home. The first three rules are about television-related activities. One example is that whether parents set a rule for “how early or late he/she [the child]
may watch television”. The other three items are about “maintaining a certain grade of average”, “doing homework” and “doing household chores”, respectively. The index was constructed for this study, although it has been suggested as a measure of structure in the family environment (Thomas, 2004). The scores for these items originally range from 1 to 2, and were recoded into 0 (No) and 1(Yes). The total of the six items is then computed to indicate the overall level of parental control (possible range=0~6).

Acculturation variables

Adolescent levels of U.S. acculturation. Adolescent levels of U.S. acculturation are first measured by a single-item question: “How often do you prefer American ways of doing things?”. The original answers range from 1 (“All the time”) to 4 (“Never”). Responses were recoded so a higher score indicates higher U.S. preference. A second measure of this variable is the adolescent English knowledge index which consists of four questions: i.e., “How well do you speak/understand/read/write English?” All questions are rated on a 4-point Likert-type scale ranging from “Very little” to “Very well”. The mean score is calculated for this measure, yielding a possible range of 1-4. Using this index, the Cronbach reliability test yields a score of .93, .95 and .89 in the total sample, the Asian subsample and the Hispanic subsample, respectively. Both measures of adolescent U.S. acculturation have been used as acculturation indicators in research (e.g., Rumbaut, 2005).

Adolescent familistic values. Familistic values are assessed by adolescents’ perceptions of familism. The familism index includes three four-point Likert-type questions on attitudes toward parents/family. These questions are: (1) “If someone has the chance to help a person get a job, it is always better to choose a relative rather than a
friend”; (2) “When someone has a serious problem, only relatives can help”; and (3) “When looking for a job a person should find a job near his/her parents even if it means losing a better job somewhere else” (All questions ranging from “Disagree a lot” to “Agree a lot”). Scores were recoded in a way that a higher score indicates a stronger sense of familism. The mean score of the three questions is computed for the overall familism score, yielding a possible range from 1 to 4. Although the index was created by the PIs of the CILS and used by others (Rumbaut, 2005; Ying & Han, 2007a), the Cronbach’s reliability test produced relatively poor Alpha coefficients: .60, .64, and .56 in the total sample, the Asian subsample and the Hispanic subsample, respectively.

Adolescent bicultural acculturation. Bicultural acculturation is measured by adolescent bilingualism and language preference. Bilingualism is coded based on adolescent English and foreign language abilities. English ability is measured by the adolescent English knowledge index, which is also used as one of the measures of adolescent levels of U.S. acculturation. Foreign language ability is measured by the adolescent foreign language knowledge index which includes four 4-point Likert-type questions tapping how well respondents speak/understand/read/write foreign languages. The mean score of the four questions is computed as the overall foreign language knowledge score, yielding a possible range from 1 to 4. The Cronbach’s Alpha of the foreign language knowledge index was .87, .79 and .88 for the total sample, the Asian subsample, and the Hispanic subsample, respectively. To measure bilingualism, the mean scores of both indexes were recoded to generate four dummy coded variables (1=Yes; 0=No) for bilingual abilities. Specifically, consistent with the method used by the PIs of the CILS (Portes & Rumbaut, 2001), respondents who knew English very well (the mean
score is 3.75 or higher on the English knowledge index) and a foreign language at least well (the mean score is 3.25 or higher on the foreign language knowledge index) were classified as “fluent bilingual”. The other three dummy variables, including “fluent in English only” (English scores equal or greater than 3.75, foreign language scores smaller than 3.25), “fluent in foreign languages only” (English scores smaller than 3.75, foreign language scores equal or larger than 3.25) and “limited bilingual” (English scores smaller than 3.75, foreign languages score smaller than 3.25) were also generated accordingly.

Adolescent language preference is measured by one single-item question: “In what language do you prefer to speak most of the time?”. Respondents were asked to write their answers to this question. The answers could be English, any languages of countries of origin and bilingual (or depends on situation). As suggested by the PIs of the CILS (Portes & Rumbaut, 2001), these answers were recoded into a three-category variable (preference for English only, preference for foreign languages only and preference for both languages). Then three dummy coded variables (1=Yes, 0=No) were created based on these categories.

**Parental levels of U.S. acculturation.** This construct is measured by two indicators: adolescents’ perception of parental U.S. preference and parental English proficiency. Parental U.S. preference is based on a single-item question: “How often do your parents (or adults with whom you live) prefer American ways of doing things?” (Answers ranging from 1=“All the time” to 4 =“Never”). Responses were recoded for higher values to indicate higher preference. In addition, parental English proficiency is based on a 4-item English knowledge index, rated by parents themselves (i.e., “How well do you speak/understand/read/write English?”). All questions have a 4-point Likert-type
response scale ranging from “Very little” to “Very well”. The reliability of this index for the study sample is excellent (α = .97, .98, .96 for the total sample, the Asian subsample and the Hispanic subsample, respectively). Finally, like measures of adolescent U.S. acculturation, these two indexes have been used as measures of parental acculturation in the literature (Ying & Han, 2007b, 2008a).

Control variables

Evidence shows that adolescent gender, age, national origin, length of stay in the U.S., generation status, Grade Point Average (GPA), family structure and family size are all related to adolescent PWB. The present study considers the effects of these factors by including them as control variables.

Gender

It is often reported that adolescent boys often display higher self-esteem than girls (Polce-Lynch, Myers, Kliwer, & Kilmartin, 2001). In this study, respondents provided information of their gender in the first survey of the CILS study. It is coded as a dichotomous variable (0=male; 1=female).

Age

Age is also associated with adolescent well-being. For instance, self-esteem may increase with age for boys but decrease for girls (Block & Robins, 1993). Age was measured by a single-item “How old are you?” in the first survey of the CILS. The follow-up survey tool place three years after the first survey, therefore, age in the present study was recoded by adding three to the original age reported by adolescents.
Grade Point Average (GPA)

It was evidenced that GPA predicts both self-esteem and depression among children of immigrants (Espiritu & Wolf, 2001). In this study, information on GPA was collected by accessing school records.

National origin

National origin has been found to be related to adolescent PWB. For instance, Filipino and Vietnamese adolescents of immigrants reported lower self-esteem than adolescents from Latin and other Asian countries (Rumbaut, 1994). In the CILS data set, national origin is constructed from three questions in the first survey, which were about adolescents’ report on their fathers’, mothers’ and own national origins. In the sample, major national origins reported by adolescents include Asian countries (such as Vietnam, Laos, Cambodia and China) and Latin countries (including Cuba, Mexico, Nicaragua, Colombia, and the Dominican Republic).

Generation status

As for generation status, the second generation has been found to report lower self-esteem than the 1.5 generation (Rumbaut, 1994). In this study, generation status is measured by a single-item question: “In what country were you born?”. Adolescents who reported the United States as their birth country are coded as the second generation; those who reported foreign countries as their birth places are coded as the 1.5 generation (0=the second generation; 1=the 1.5 generation).

Length of residence in the U.S.

Evidence reveals a positive relationship between adolescent length of residence and self-esteem (Rhee et al., 2003). Length of residence is measured by a single-item
question: “How long have you lived in the U.S.?”. It is rated on a four-point Likert-type scale, ranging from “Less than 5 years” to “All my life”. Original answers are reversed and a larger score means a longer length of stay.

**Family structure**

Family structure has been found to be associated with self-esteem and depression among children of immigrants. The absence of the father from the home, for example, is related to lower self-esteem and higher depression among adolescents in immigrant families (Rumbaut, 1994). Respondents reported their family structure based on the following major criteria: 1=“Living with father and mother”, 2=“Living with father and step-mother/other female adult”, 3=“Living with mother and step-father/other male adult”, 4=“Father alone”, 5=“Mother alone”, and 6=“Alternate living with father/mother”. This variable is recoded into a 2-category variable (1=living with father and mother; 0=all other family types).

**Family size**

Family size is found to be positively related to adolescent adverse psychosocial outcomes such as delinquency (Demuth & Brown, 2004). Family size is measured by a single-item question: “In total, how many people, besides you [adolescents], live in the same house with you?”. The answers range from 0 to 16.

**Data Analysis Strategy**

**Hypotheses testing strategy**

Data analysis is carried out with STATA version 12.0. Frequency distribution and bivariate associations among variables were examined to confirm suitability for inclusion in the regression analysis. Regression diagnostics were performed to ensure that major
assumptions such as linearity, normality and homoscedasticity are met. Hierarchical regression\(^1\) is used for hypothesis testing purposes. It is suitable for testing the effects of a variety of variables in a specified order, especially when theories suggest that variables are of different importance (Brace, Kemp, & Snelgar, 2000). In this study, since family factors are more important than acculturation factors (as implied by the ecological systems theory), four blocks of variables are entered in the following specified order: Control variables, family factors, acculturation factors, and the interaction terms between IC and each of the family cohesion, adolescent familism and bicultural acculturation variables. The comparison between Asian and Hispanic groups is accomplished by running separate hierarchical regression models.

The product term regression method was used to conduct interaction analysis. The interaction terms were created by taking the products of two potentially interacting variables. Specifically, family cohesion and familism are both continuous variables and thus were directly multiplied with IC, which is also a continuous variable. Since bilingualism is a categorical variable, one dummy coded variable, proficiency in both languages, served as the reference group. Interaction terms between IC and the other three dummy coded variables (including proficiency in English only, proficiency in foreign languages only, and limited proficiency in both languages) were created. Similarly, for the language preference variable, preference for both languages was treated as the reference group and two interaction terms were created: the product of IC and preference for English only and that of IC and preference for foreign languages only.

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\(^1\) Hierarchical regression used here is different from hierarchical linear models that were developed by Raudenbush and Bryk, which is a statistical technique suitable for data with a hierarchical structure. See Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical Linear Models: Applications and Data Analysis Methods* (2nd ed.). Thousand Oaks, CA: Sage.
To reduce unnecessary complexity regarding interaction effects, four separate interaction models were established to examine if the interaction effects are significant while controlling for all other study variables. Model I examines the interaction term between IC and family cohesion; Model II examines the interaction between IC and familism; Model III examines the interaction terms between IC and the three dummy variables coded from bilingualism; and Model IV examines the interaction terms between IC and the two dummy variables coded from language preference. In order to be included in final step of the hierarchical models, the interaction term between IC and family cohesion needs to be significant in the above models. The same criterion applies to the other continuous variable familism. All interaction terms between IC and bilingualism are included if at least one interaction term between IC and the dummy variables coded from bilingualism is significant. This also applies to another categorical variable language preference.

**Strategies for handling missing data**

The pattern of missingness for each of the study variables was examined. Overall, the amount of missing data was minimal to moderate. In the Asian sample, two variables (i.e., bilingualism and language preference) each had 9% missing values, but missingness for all other variables was well below 5%. The Hispanic sample contains less than 5% missing data on all study variables. In addition, as suggested by results of $\chi^2$ tests for missingness (as shown in Table 1), the pattern of missing data did not significantly differ between Asian and Hispanic groups for most variables. However, Asian adolescents are more likely not to report information on bilingualism ($\chi^2(1, N=2,088)=59.82, p<.001$) and language preference ($\chi^2(1, N=2,088)=56.67, p<.001$) than Hispanic adolescents. On
the other hand, Hispanic adolescents are more likely not to report information on intergenerational conflict ($\chi^2(1, N=2,088)=6.23, p=.01$), adolescent U.S. preference ($\chi^2(1, N=2,088)=8.53, p=.003$), and parental U.S. preference ($\chi^2(1, N=2,088)=4.55, p=.03$). GPA also contained more missing observations among Hispanic adolescents ($\chi^2(1, N=2,088)=14.20, p<.001$). Nevertheless, these differences do not seem to be systematic across the two groups. Therefore, the pattern of missing data is deemed as missing at random, an assumption that must be met to use the multiple imputation procedure for handling missing data.

Two types of casewise deletion are first used to handle missing data. A full casewise deletion procedure is performed on all study variables with missing observations. The resulted sample contains 807 Asian adolescents and 1,008 Hispanic adolescents. Based on the full casewise deletion data, self-esteem was regressed on all predictor variables for the Asian and Hispanic subsample separately. These models serve three purposes: (1) comparing these models to those based on the imputed data provides some evidence of the validity of multiple imputation procedure (Treiman, 2009); (2) calculating simple intercepts and simple slopes to facilitate the probing and testing of two-way interactions between IC and family cohesion and familism; and (3) pre- and post-regression diagnostics related to linearity, normality, multicollinearity, homoscedasticity, model specifications and influence were examined based on these models, because STATA programs for regression diagnostics are often not available for imputed data (Royston & Division, 2005).

Based on the original study sample (N=2,088), a partial casewise deletion procedure is employed on self-esteem, adolescent English proficiency, and the control
variables including age, generation status, family structure, family size and GPA. Casewise deletion was used for self-esteem because imputing the dependent variable could bias the imputation estimates, especially when the imputation model contains only those variables in the analysis model (von Hippel, 2007). English proficiency is included in the casewise deletion procedure because it prevented the working MI model from reaching convergence. Casewise deletion is also used on control variables with missing data in that the effects of these variables are not the focus of the study. Table 3 shows the number of missing cases of each variable included in casewise deletion. A total of 72 cases (3.45%) are deleted after casewise deletion and the new sample included 2,016 observations. For Asian adolescents, 18 observations are lost after casewise deletion. For Hispanic adolescents, 54 observations are deleted after this procedure. The resulted sample size is 928 for the Asian subsample and 1,088 for the Hispanic subsample. The proportion of the lost data is well below the recommended criterion for using casewise deletion as a major way of handling missing data, which is typically less than 5% (Graham, 2009).

Table 3
Number of observations with missing data on self-esteem, adolescent English proficiency and covariates by ethnicity

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<th>Variables</th>
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</tr>
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<td>Family size</td>
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<tr>
<td>Grade Point Average</td>
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<td>17</td>
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<tr>
<td>Total cases deleted</td>
<td>18</td>
<td>54</td>
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</table>
Based on the new sample generated by the partial casewise deletion procedure (N=2,016), multiple imputation (MI) is implemented separately among the Asian and Hispanic subsample. For the Asian subsample, nine variables are imputed: IC, parent-child communication, parental control, adolescent U.S. preference, familism, bilingualism, language preference, and parental U.S. preference and English proficiency. One additional variable family cohesion is also imputed for the Hispanic subsample. Table 4 provides detailed information on the imputed variables including variable names, numbers of missing values, variable types and MI methods. Different regression methods are used based on the types of the imputation variables. Specifically, for continuous variables (IC, family cohesion, parent-child communication, adolescent and parental U.S. preference, parental English proficiency and adolescent perceived familism), ordinary least-squares regression (OLS) is used to build MI models. The count variable, parental control, is imputed based on Poisson regression models. Multinomial logistic regression (MLR) models are built to impute the four categorical variables of bicultural acculturation. Only variables in the analysis model are selected to construct the MI models.

Sequential regression multivariate imputation was performed in STATA as this method is capable of imputing missing values given arbitrary patterns for continuous, binary, ordinal, cardinal, or count variables (Raghunathan, Lepkowsk, Hoewyk, & Solenberger, 2001). It is appropriate for this study because the missingness of these variables is arbitrary for both the Asian and Hispanic subsample. To impute all the variables simultaneously, chained equations are constructed using the default specification with stata. Under this specification, the most observed variable is first
predicted from all complete predictors and all other imputation variables. The next most observed variable is predicted from all complete predictors, the previously imputed variable and all other imputation variables not imputed yet. The least observed variable is predicted from all complete predictors and all previously imputed variables. Additionally, five imputations are created on the missing data for both the Asian and Hispanic subsample. This is because the proportion of missing data was relatively low in the original study sample. For the same reason, interaction terms are not included in the imputation model but created after the MI procedure was carried out.

**Table 4**
Characteristics of imputed variables by ethnicity

<table>
<thead>
<tr>
<th>Variables</th>
<th># of Missing Values</th>
<th>Type</th>
<th>MI method</th>
</tr>
</thead>
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<tr>
<td></td>
<td>Asian</td>
<td>Hispanic</td>
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<tr>
<td>Family variables</td>
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<tr>
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</tr>
<tr>
<td>Parent-child communication</td>
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<td>Count</td>
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<td>Acculturation variables</td>
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<td>Parental U.S. preference</td>
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<td>Bilingualism</td>
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<tr>
<td>Language preference</td>
<td>90</td>
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<td>Total</td>
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<td>Total complete cases</td>
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<td>Total original cases</td>
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Notes: OLS=Ordinary Least-squares Regression; Poisson=Poisson Regression; MLR= Multinomial Logistic Regression.
CHAPTER IV: RESULTS

This chapter first presents results of descriptive statistics and bivariate correlations; and then results of multivariate models testing hypotheses based on imputed data. Results are reported separately for Asian and Hispanic adolescents. To be consistent with one-tailed hypothesis testing, all $p$ values reported in the following results are based on one-tailed tests, except for those tests on descriptive statistics, correlations and the $F$ statistic. By convention, .05 is used as an indicator for statistical significance. Unless it is less than .001, the exact $p$ value is always reported within the text. When appropriate, the unstandardized regression coefficient ($b$), the standardized regression coefficient ($\beta$), the $F$ statistic, the proportion of variance explained (both $R^2$ and adjusted $R^2$) are also presented.

Descriptive Statistics

Descriptive statistics (including mean, standard deviation, and range) of all study variables for Asian and Hispanic ethnic groups are also shown in Table 2. As t-tests and $\lambda^2$ tests indicate, most of the variables significantly differ between the two groups, with exceptions of parental U.S. preference, adolescent proficiency in foreign language only, preference for English only and bilingual preference. It is important to note that Asian adolescents in immigrant families have significantly lower self-esteem than their Hispanic counterparts, $t(2,052)=-10.85, p<.001$. In addition, Asian adolescents are more likely to experience problematic parent-child dynamics than Hispanic adolescents on all four measures: IC ($t(2071)=5.85, p<.001$), family cohesion ($t(2,080)= -5.23, p<.001$), parent-child communication ($t(2,074)= -15.87, p<.001$), and parental control ($t(2,063)= -3.61, p<.001$).
In terms of acculturation patterns, Asian adolescents are less acculturated on the measure of English proficiency than Hispanic adolescents, $t(2,085)=-10.54, p<.001$. Asian adolescents also perceive higher levels of familism, $t(2,071)=5.02, p<.001$. However, they report higher preference for U.S. ways of doing things, $t(2,068)=4.91, p<.001$. In addition, Hispanic adolescents are more likely to have bilingual proficiency, $\chi^2(1, N=1,975) = 361.94, p<.001$. Asian adolescents are more likely to be fluent in English only, $\chi^2(1, N=1,975)=78.61, p<.001$. They are also more likely to report preference for foreign languages only, $\chi^2(1, N=1,970)=6.23, p=.01$. Finally, levels of parental English proficiency are significantly higher among Hispanic than Asian parents, $t(2,046)=-2.40, p=.02$.

Correlations

The problem of multicollinearity may arise because this study uses the measure of adolescent English knowledge to construct several variables (i.e., adolescent English proficiency and adolescent bilingualism). To detect any potential problem regarding multicollinearity, correlations between all continuous independent variables are examined (missing values are handled by pairwise deletion). Table 5 shows correlations between all continuous independent variables (results for control variables are omitted). From the table, one can see that bivariate correlations are modest to moderate. Although it is very difficult to define a cutoff correlation score for the purpose of detecting multicollinearity problems, researchers typically agree on a score of .80 (Berry & Feldman, 1985). Judging by this criterion, the data do not have the problem of multicollinearity. Post-regression analysis also confirmed this pattern (with all estimates for Variance Inflation Factors smaller than 10).
Table 5
Correlations between continuous independent variables by ethnicity

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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<td>4. Parent-child communication</td>
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<td>6. Parental English proficiency</td>
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<td>.27&lt;sup&gt;c&lt;/sup&gt;</td>
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<td>7. Adolescent U.S. preference</td>
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<td>.13&lt;sup&gt;c&lt;/sup&gt;</td>
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<td>.11&lt;sup&gt;b&lt;/sup&gt;</td>
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<td>.40&lt;sup&gt;c&lt;/sup&gt;</td>
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<tr>
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<td>.20&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.56&lt;sup&gt;c&lt;/sup&gt;</td>
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<td>-.10&lt;sup&gt;b&lt;/sup&gt;</td>
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<td></td>
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</table>

Notes: <sup>a</sup>p<.05; <sup>b</sup>p<.01; <sup>c</sup>p<.001.

**Results for Hierarchical Regression Models and Hypothesis Testing**

**Results for Asian adolescents**

Using the imputed data, variables that explain PWB were entered in four steps. In step 1, self-esteem was the dependent variable and the control variables (with a Filipino origin serving as the reference, six dummy variables denoting different Asian national origins were entered into the equation) were the independent variables. In step 2, the four family variables (IC, family cohesion, parent-child communication and parental control) were entered into the step 1 equation. In step 3, six acculturation variables were entered into the step 2 equation. These included adolescent and parental English proficiency, adolescent and parental U.S. preference, adolescent perceptions of familism and bicultural acculturation measured by bilingualism and language preference. Using
proficiency in both languages as the reference group, three dummy variables denoting different categories of bilingualism were entered; using preference for both languages as the reference group, two dummy variables denoting different categories of language preference were entered.

As discussed previously, separate interaction models (i.e., Model I through IV examining the interaction between IC and family cohesion, familism, bilingualism, and language preference, respectively) were constructed to determine which interaction needs to be included in the final step of the hierarchical regression models. In step 4, the following interaction terms were entered into the step 3 equation: the interaction term between IC and familism (Model II yielded significant results, $b = .69, \beta = .25, p = .02$), the interaction terms between IC and the three dummy variables coded from bilingualism (Model III yielded significant results for two interaction terms: the IC-by-proficiency-in-English-only term, $b = -2.77, \beta = -.56, p = .009$ and the IC-by-proficiency-in-foreign-languages-only term, $b = -2.15, \beta = -.21, p = .04$), and the interaction terms between IC and the two dummy variables coded from language preference (Model IV yielded significant results for the IC-by-English-preference-only term, $b = 1.47, \beta = .30, p = .02$). Meanwhile, the interaction term between IC and family cohesion was excluded due to its non-significance in the Model I among Asian adolescents.

Based on the summary statistics over five imputations, the results of step 1 indicated that the control variables significantly accounted for the variance in self-esteem, $R^2 = .10$, adjusted $R^2 = .09$, $F(13, 912.0) = 7.77, p < .001$. The model of step 2 was significant: $R^2 = .23$, adjusted $R^2 = .22$, $F(17, 908.0) = 16.04, p < .001$. It also indicated that family variables made significant independent contributions to the level of self-esteem: the
change in variance accounted for ($\Delta R^2$) was equal to .14, $F(4, 907.8)=38.74$, and $p<.001$. In step 3, the model was significant: $R^2 = .29$, adjusted $R^2 = .27$, $F(27, 897.6)=13.65$, $p<.001$. Acculturation variables made significant independent contributions to the level of self-esteem ($\Delta R^2 = .06$, $F(10, 892.4)=7.67$, $p<.001$). In step 4, the model was also significant: $R^2 = .31$, adjusted $R^2 = .29$, $F(33, 881.2)=11.72$, $p<.001$. Interaction variables made significant independent contributions to the level of self-esteem ($\Delta R^2 = .02$, $F(6, 405.5)=3.51$, $p=.002$). Table 6 presents regression coefficients, standard error and associated $p$ values for each variable in the corresponding step of the hierarchical regression models among Asian adolescents. Detailed information on each variable and hypothesis testing is reported below.

**Control variables**

In step 1, being female was significantly related to PWB among Asian adolescents, $b=-1.64$, $\beta = -.16$, $p<.001$. In addition, being foreign born ($b=2.31$, $\beta=.20$, $p<.001$), being Vietnamese ($b=-1.93$, $\beta=-.16$, $p<.001$), being Laotian ($b=-1.39$, $\beta=-.09$, $p=.008$), GPA ($b=1.45$, $\beta=.24$, $p<.001$), and length of stay ($b=1.49$, $\beta=.21$, $p<.001$) were all statistically significant control variables.

**Hypotheses regarding family dynamics**

In step 2, while controlling for the effects of the covariates, IC was a significant predictor of PWB among Asian adolescents ($b=-2.43$, $\beta=-.30$, $p<.001$), thus supporting H1. Family cohesion also significantly predicted PWB ($b=.70$, $\beta=.13$, $p<.001$), thus providing evidence for H2 among Asian adolescents. On the other hand, there was no statistical evidence on the positive effects of parent-child communication or parental control on PWB. Therefore, H3 and H4 were not supported among Asian adolescents.
Table 6
Results of the hierarchical regression models predicting PWB among Asian and Hispanic adolescents

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</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>SE (b)</td>
<td>β</td>
<td>p</td>
<td>b</td>
<td>SE (b)</td>
<td>β</td>
<td>p</td>
<td>b</td>
<td>SE (b)</td>
<td>β</td>
<td>p</td>
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<tr>
<td>Length of stay</td>
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<td>2.0**</td>
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<td>-2.3**</td>
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<td>-2.58</td>
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<td>-2.3**</td>
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Note: **p < .01, *p < .05
(Continued)

**Step 4 - Interaction variables**

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<tr>
<th>Interaction Variables</th>
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<th>Standard Error</th>
<th>t Value</th>
<th>p Value</th>
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<td>-1.09</td>
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</table>

Notes: Non-significant results are omitted. *p<.05, **p<.01, ***p<.001.
Hypotheses regarding acculturation variables

In step 3, while controlling for the effects of covariates and family variables entered in step 1 and 2, adolescent English proficiency was a significant predictor of PWB among Asian adolescents ($b=1.98$, $\beta=.21$, $p<.001$). This is consistent with H5 which expects positive effects of adolescent U.S. acculturation. Adolescent U.S. preference, another measure of U.S. acculturation, however, failed to predict PWB significantly, thus providing no evidence for H5. Taken together, H5 was partially supported among Asian adolescents.

Familism was also significantly associated with PWB among Asian adolescents ($b=-.71$, $\beta=-.09$, $p=.002$). However, it was in a completely opposite direction in regard to H6 which postulates a positive effect of familism on self-esteem. Thus, H6 was not supported among Asian adolescents.

H7 is related to the effect of adolescent bicultural acculturation and hypothesizes that bicultural acculturation is associated with better PWB than U.S. acculturation and national-origin acculturation. Adolescent bicultural acculturation was measured by both bilingualism and language preference. In step 3, neither proficiency in the English language only nor proficiency in foreign languages only was a significant predictor of PWB, suggesting H7 was not supported by the data. Preference for the English language only was not a significant predictor either. However, Asian adolescent preference for foreign languages only, compared to preference for both languages, was significantly associated with lower levels of PWB ($b=-1.02$, $\beta=-.09$, $p=.002$), thus providing some evidence for H7.
H8 is regarding the negative effects of parental U.S. acculturation which is measured by both parental English proficiency and U.S. preference. The results in step 3 failed to support such associations due to the lack of significance in estimates of the regression coefficients of these two variables.

Hypotheses regarding interactions

In step 4 of the hierarchical regression analysis, interaction terms were examined while adjusting for the effects of covariates, family dynamics and acculturation variables. Overall, as shown in Table 7, four interaction variables were significant predictors in the step 4 model for Asian adolescents: IC-by-familism, IC-by-proficiency-in-English-only, IC-by-proficiency-in-foreign-languages-only, and IC-by-preference-for-English. Table 7 also indicates the regression coefficients for the constituent variables of the four interaction terms. Based on these results, a total of 12 profiles of the effect of IC on PWB among Asian adolescents was created and presented in Table 8. Out of these profiles, seven profiles had a significant coefficient estimate for the effect of IC on PWB.

H9 hypothesizes that family cohesion modifies the effect of IC. This was not tested in the Asian final model, but previous analysis (interaction Model I for Asian adolescents) suggested that this was not supported as this interaction term failed to predict PWB among Asian adolescents while controlling for the effects of all covariates, family and acculturation variables.
Table 7
Results of the step 4 model of hierarchical regression analysis predicting PWB by ethnicity

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<thead>
<tr>
<th>Variable</th>
<th>Asians (N=928)</th>
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<th>Hispanics (N=1,088)</th>
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<td></td>
<td>b</td>
<td>SE (b)</td>
<td>β</td>
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<td><strong>Control variables</strong></td>
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<td>Age</td>
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<td>.06</td>
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<td>GPA</td>
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<tr>
<td>Mexican origin</td>
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<td>-.09**</td>
<td>.007</td>
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<td><strong>Family variables</strong></td>
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<tr>
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<td>-.32*</td>
<td>.02</td>
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<tr>
<td>Family cohesion</td>
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<td>Parental control</td>
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<td>.02</td>
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<td>Parent-child communication</td>
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<td><strong>Acculturation variables</strong></td>
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<td>.32</td>
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<tr>
<td>Adolescent familism</td>
<td>-2.49</td>
<td>.72</td>
<td>-.31***</td>
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### Bilingualism

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### Language preference

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### Interaction variables

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<td>-.65**</td>
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<td>-2.36</td>
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<td>-.23*</td>
<td>.03</td>
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<td>.006</td>
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<td>-.23</td>
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*Notes: Non-significant results for control variables are omitted. Limited bilingualism and its interaction with IC are omitted. *p<.05, **p<.01, ***p<.001.*
As for testing H10 among Asian adolescents, the significant interaction between IC and familism ($b=.87, \beta=.32, p=.005$) in the step 4 model suggested that familism modified the effect of IC on PWB. To examine whether familism buffers the effect of IC, simple slopes and simple intercepts were tested based on the Asian regression model involving all variables (i.e., variables in the step 4 model of the hierarchical regression). For this purpose, a full casewise deletion procedure was used to handle missing data and all continuous predictor variables were mean centered. Results for six profiles with significant slopes were plotted in Figure 3 and Figure 4 (All these six profiles also had a significant coefficient estimate based on the imputed data, which were presented in Table 8).

**Table 8**
Simple slopes of PWB on IC among Asian adolescents conditional on different levels of familism, bilingualism, and language preference

<table>
<thead>
<tr>
<th>Profile</th>
<th>Familism</th>
<th>Bilingualism</th>
<th>Language preference</th>
<th>$b$</th>
<th>SE($b$)</th>
<th>$p$</th>
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<td>AP1</td>
<td>HF</td>
<td>FE</td>
<td>PE</td>
<td>-1.70***</td>
<td>.45</td>
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<tr>
<td>AP2</td>
<td>HF</td>
<td>FF</td>
<td>PE</td>
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<tr>
<td>AP3</td>
<td>HF</td>
<td>FB</td>
<td>PE</td>
<td>1.50</td>
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<td>FE</td>
<td>PB</td>
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<td>HF</td>
<td>FF</td>
<td>PB</td>
<td>-2.61**</td>
<td>1.00</td>
<td>.005</td>
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<td>FB</td>
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<td>FE</td>
<td>PE</td>
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<td>LF</td>
<td>FF</td>
<td>PE</td>
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<td>.02</td>
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<td>FB</td>
<td>PE</td>
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<td>FE</td>
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<td>&lt;.001</td>
</tr>
<tr>
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<td>LF</td>
<td>FB</td>
<td>PB</td>
<td>-1.38</td>
<td>1.13</td>
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</table>

Notes: AP1~12=Asian Profile 1~12; HF=The high level of familism; LF=The low level of familism; FE=Fluency (Proficiency) in English only; FF=Fluency (Proficiency) in foreign language only; FB=Fluency (Proficiency) in both languages; PE=Preference for English only; PB=Preference for speaking both the English and foreign languages; *$p<.05$, **$p<.01$, ***$p<.001$.  

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Figure 3 illustrated the moderating effect of familism among Asian adolescents fluent in English only. For those who preferred to speak both the English and foreign languages, their PWB was always higher at a low level of familism (the blue line) than at a higher level of familism (the red line). This pattern was replicated among adolescents who preferred to speak English only (see the green and purple line in Figure 3). Similarly, as shown in Figure 4, adolescents who were fluent in foreign languages only and preferred to speak both the English and foreign languages showed higher PWB when they perceived a lower level of familism (the blue line) than a higher level of familism (the red line). Thus, H10 was not supported among Asian adolescents.

H11 expects that bicultural acculturation decreases the effect of IC on PWB. The significant negative interactions between IC and fluent use of English ($b=-3.21, \beta=-.65, p=.004$) and fluent use of foreign languages only ($b=-2.36, \beta=-.23, p=.03$) provided evidence for H11. In other words, IC was associated with lower PWB among adolescents fluent in English only and foreign languages only than among bilingually fluent adolescents. The profiles in Table 8 also offer such evidence. For example, while holding all other variables that interacted with IC constant (among Asian adolescents who perceived a high level of familism and preferred to speak English only), the effect of IC was significantly negative among adolescents fluent in English only (Profile 1: $b=-1.70, p<.001$), but positive among those fluent in both languages, although only marginally significant (Profile 3: $b=1.50, p=.10$). Similarly, the effect of IC was significantly negative among Asian adolescents fluent in foreign languages only (Profile 5: $b=-2.61, p<.005$), but it became non-significant among those fluent in both languages.
Meanwhile, the interaction term between IC and preference for English only was significant ($b=1.76$, $\beta=.36$, $p=.006$), suggesting that the effect of IC on self-esteem was modified by language preference (specifically, preference for English). Figure 3 also illustrated the moderating effect of language preference. For adolescents who perceived low familism, preference for English (the green line) was associated with higher PWB than preference for both the English and foreign languages (the blue line), especially when IC deteriorated. Therefore, compared to preference for English language, preference for both languages did not mitigate but exacerbated the harmful effect of IC among Asian adolescents. Taken together, H11 was partially supported especially due to
the evidence on the interaction between IC and bilingualism (i.e., language proficiency).

**Figure 4**

The moderating effect of familism among Asian adolescents fluent in foreign languages only and preferring to speak both the English and foreign languages.

![Graph showing the moderating effect of familism among Asian adolescents](image)

Notes: IC=Intergenerational Conflict; PWB=Psychological Well-being; FF=Adolescent fluency in foreign languages only; PB=Adolescent Preference for speaking both the English and foreign languages; FA=Familism.

**Results for Hispanic adolescents**

Similar to the model for Asian adolescents, variables that explain self-esteem were entered in four steps to establish a final regression model for Hispanic adolescents. Step 1 included the six control variables (for national origin, six dummy variables denoting different Hispanic national origins were kept with a Cuban origin serving as the reference); Step 2 added the four family variables to the step 1 equation; Step 3 added the six acculturation variables to the step 2 equation; Step 4 added the interactions between
IC and cohesion and the two dummy variables of language preference to the step 3 equation.

In step 4, the following interaction terms were entered into the step 3 equation based on the results of the separate interaction models among Hispanic adolescents: the interaction between IC and family cohesion (in Model I, $b = -.50$, $\beta = -.24$, $p = .006$), and the interaction terms between IC and the two dummy variables coded from language preference (Model IV yielded significant results for the IC-by-English-preference-only term, $b = -1.00$, $\beta = -.20$, $p = .04$). Meanwhile, the interaction term between IC and familism and the interaction terms between IC and each dummy variable coded from bilingualism were excluded due to their non-significance in Model II and III.

The results of step 1 indicated that the control variables significantly accounted for the variance in self-esteem among Hispanic adolescents ($R^2 = .03$, adjusted $R^2 = .02$, $(F(13, 1,072.0)=2.58, p<.001$). The model of step 2 was also significant: $R^2 = .20$, adjusted $R^2 = .19$, $F(17, 1,067.5)=15.54, p<.001$. It also indicated that family variables made significant independent contributions to the level of self-esteem: $\Delta R^2 = .17, F(4, 1,031.4)=54.22$, and $p<.001$. In step 3, the model was significant: $R^2 = .25$, adjusted $R^2 = .23$, $F(27, 1,055.9)=13.03, p<.001$. Acculturation variables made significant independent contributions to the level of self-esteem ($\Delta R^2 = .05, F(10, 1,032.7)=7.31, p<.001$). In step 4, the Hispanic final model was significant: $R^2 = .26$, average adjusted $R^2 = .24$, $F(30, 1,051.0)=12.13, p<.001$. Interaction variables made significant independent contributions to the level of self-esteem ($\Delta R^2 = .02, F(3, 721.1)=3.69, p=.01$). Table 6 presents regression coefficients, standard error and associated $p$ values for each variable in the corresponding step of the hierarchical regression models among Hispanic
adolescents. Detailed information on each variable and hypothesis testing is reported below.

Control variables

In the step 1 model, GPA ($b=0.44$, $\beta=0.08$, $p=0.005$) and being Mexican ($b=-1.59$, $\beta=-0.15$, $p<0.001$) significantly predicted PWB among Hispanic adolescents.

Hypotheses regarding family dynamics

In step 2, while controlling for the effects of the covariates, IC was a significant predictor of PWB among Hispanic adolescents ($b=-2.58$, $\beta=-0.34$, $p<0.001$), thus supporting H1. Family cohesion also significantly predicted PWB ($b=0.68$, $\beta=0.14$, $p<0.001$), thus providing evidence for H2 among Hispanic adolescents. On the other hand, there was no statistical evidence on the positive effects of parent-child communication or parental control on PWB. Therefore, H3 and H4 were not supported among Hispanic adolescents.

Hypotheses regarding acculturation variables

In step 3, while controlling for the effects of covariates and family variables entered in step 1 and 2, adolescent English proficiency was a significant predictor of PWB among Hispanic adolescents ($b=2.86$, $\beta=0.22$, $p=0.001$). This is consistent with H5 which expects positive effects of adolescent U.S. acculturation. Adolescent U.S. preference, another measure of U.S. acculturation, however, failed to predict PWB significantly, thus providing no evidence for H5. Taken together, H5 was partially supported among Hispanic adolescents.

Familism was not significantly associated with PWB among Hispanic adolescents. Thus, H6 was not supported among Hispanic adolescents.
H7 is related to the effect of adolescent bicultural acculturation. Regarding the measure of bilingualism, adolescents fluent in the English language only reported lower PWB than those fluent in both languages, $b = -0.54$, $\beta = -0.05$, $p = .05$, thus supporting H7. However, adolescent proficiency in foreign languages only was not significantly associated with PWB, suggesting H7 was not supported by the data. Regarding the measure of language preference, both preference for the English language only and preference for foreign language only were not statistically significant, providing no evidence for H7. Taken together, H7 was partially supported among Hispanic adolescents.

H8 is regarding the negative effects of parental U.S. acculturation which is measured by both parental English proficiency and U.S. preference. Hispanic parents’ U.S. preference significantly predicted adolescent PWB ($b = -0.44$, $\beta = -0.06$, $p = .04$), but their English proficiency failed to support did not reach the significance level in step 3 of the hierarchical regression analysis. Therefore, H8 was partially supported among Hispanic adolescents.

**Hypotheses regarding interactions**

The results from the step 4 model for Hispanic adolescents indicated that there were two significant interaction variables: IC-by-family-cohesion and IC-by-preference-for-English (Table 7). Table 7 also indicates the regression coefficients for the constituent variables of the two interaction terms. Based on these results, a total of four profiles of the simple slopes of PWB on IC among Hispanic adolescents was made and presented in Table 9. All four profiles had a significant coefficient estimate for the effect of IC.

Regarding the moderating effect of family cohesion (H9), the effect of the interaction term between IC and family cohesion among Hispanic adolescents was
statistically significant ($b = -.53, \beta = -.26, p = .004$). Therefore, the effect of IC on PWB was modified by family cohesion. To examine whether family cohesion buffers the effect of IC, simple slopes and simple intercepts were tested based on the Hispanic regression model involving all variables (i.e., variables in the step 4 model of the hierarchical regression). In order to test simple intercepts, a full casewise deletion procedure was used to handle missing data and all continuous predictor variables were mean centered. Results for profiles with significant slopes were plotted in Figure 5 (These slopes were also significant based on the imputed data, which were presented in Table 9). As illustrated in Figure 5, among Hispanic adolescents who preferred to speak English, a high level of family cohesion (the red line) was associated with higher PWB than a low level of family cohesion (the blue line). The same pattern was also demonstrated among Hispanic adolescents who preferred to speak both the English and foreign languages (see the green and purple line). As a result, H9 was supported among Hispanic adolescents.

Table 9
Simple slopes of PWB on IC among Hispanic adolescents conditional on different levels of family cohesion and language preference

<table>
<thead>
<tr>
<th>Profile</th>
<th>Family cohesion</th>
<th>Language preference</th>
<th>$b$</th>
<th>$SE(b)$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP1</td>
<td>HC</td>
<td>PE</td>
<td>-3.58***</td>
<td>.37</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>HP2</td>
<td>HC</td>
<td>PB</td>
<td>-2.49***</td>
<td>.55</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>HP3</td>
<td>LC</td>
<td>PE</td>
<td>-2.53***</td>
<td>.29</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>HP4</td>
<td>LC</td>
<td>PB</td>
<td>-1.43**</td>
<td>.55</td>
<td>.005</td>
</tr>
</tbody>
</table>

Notes: HP=Hispanic profile; HC=The high level of family cohesion; LC=The low level of family cohesion; PE=Preference for English only; PB= Preference for speaking both the English and foreign languages; **$p<.01$, ***$p<.001$.

The interaction term between IC and familism was omitted from the step 4 of the hierarchical regression analysis because of its non-significance in previous analysis (i.e. interaction Model II for Hispanic adolescents). Therefore, H10 was not supported.
The Hispanic hierarchical model excluded the interaction term between IC and bilingualism based on the results of previous analysis, i.e., the interaction Model III for Hispanic adolescents. In this model, the interaction term between IC and proficiency in Figure 5

*Figure 5*
The moderating effects of family cohesion and language preference among Hispanic adolescents

<table>
<thead>
<tr>
<th>PWB</th>
<th>23</th>
<th>24</th>
<th>25</th>
<th>26</th>
<th>27</th>
<th>28</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC</td>
<td>-1</td>
<td>-.5</td>
<td>0</td>
<td>.5</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

- PE & Low FC
- PE & High FC
- PB & Low FC
- PB & High FC

Notes: IC=Intergenerational Conflict; FC=Family Cohesion; PE=Adolescent Preference for Speaking English only; PB=Adolescent Preference for speaking both the English and foreign languages.

English or Spanish only was not statistically significant among Hispanic adolescents while controlling for all other predictor variables, thus providing no evidence for H11. In addition, the step 4 model of the hierarchical regression analysis revealed that there was no interaction between IC and preference for foreign languages only (b=-.23, β=-.03, p=.39), suggesting no between-group differences in the effects of IC. However, as shown in Table 6, the effect of the interaction between IC and adolescent preference for English
only was significant \((b=-1.09, \beta=-.22, p=.03)\), suggesting that preference for English only moderated the effect of IC. As shown in Figure 5, among Hispanic adolescents who perceived a lower level of family cohesion, preference for English only (the blue line) was associated with lower PWB than preference for both the English and foreign languages (the green line), especially when IC deteriorated. The same pattern was replicated among Hispanic adolescents who perceived a high level of family cohesion (see the red and purple lines in Figure 5). Therefore, H11 was partially supported among Hispanic adolescents considering the moderating effect of adolescent language preference (especially when IC deteriorated).

**Summary of findings: Asian vs. Hispanic adolescents**

These findings reveal that there are both similarities and differences between Asian and Hispanic adolescents in the risk and protective factors for adolescent PWB. In terms of similarities, IC was negatively associated with PWB among both Asian and Hispanic adolescents (H1); Family cohesion was positively associated with PWB among both groups (H2); there was no effect of parent-child communication on self-esteem among both Asian and Hispanic adolescents (H3); No effect of parental control on self-esteem was detected among both groups (H4); Adolescent English proficiency but not U.S. preference was a significant predictor of PWB among both groups (H5); Proficiency in foreign languages only was not a significant predictor for either group (H7); Preference for English only was not a significant predictor for either group (H7); Parental English proficiency was not associated with PWB for either group (H8).

The differences between the two groups are summarized as follows. H6: Among Asian adolescents, familism was significantly negatively associated with PWB; among
Hispanic adolescents, however, familism was not associated with self-esteem. H7: Among Asian adolescents, preference for foreign languages was related to lower PWB than preference for both languages. Among Hispanic adolescents, proficiency in English only was associated with lower PWB than proficiency in both languages. H8: Parental U.S. preference was not associated with PWB among Asian adolescents, but negatively associated with PWB among their Hispanic counterparts. H9: Family cohesion did not modify the effect of IC on PWB among Asian adolescents but did among Hispanic adolescents. H10: The harmful effect of IC on PWB was mitigated by familism among Asian but not Hispanic adolescents. H11: Among Asian but not Hispanic adolescents, both proficiency in English only and proficiency in foreign languages only helped to decrease the detrimental effect of IC on PWB. Compared to preference for English language only, preference for both languages also decreased the effect of IC among Hispanic but not Asian adolescents. Instead, Asian adolescent preference for English only helped to reduce the effect of IC.

**CHAPTER V: DISCUSSION AND CONCLUSIONS**

Using data from the CILS, the present study investigates the effects of family dynamics and acculturation on psychological well-being (PWB) among Asian and Hispanic adolescents. The moderating relationships between intergenerational conflict (IC) and family cohesion, familism and bicultural acculturation are another focus of the study. Finally, how these factors operate similarly or differently for Asian and Hispanic adolescents is also studied. The following section discusses findings according to the order of the hypotheses of the study (including some future areas for research related to
each hypothesis), followed by a discussion on the limitations and strengths of the study. Implications for future research, social work practice and policy are also provided.

**Discussion of Major Findings**

This study examined 11 hypotheses separately for Asian and Hispanic adolescents. Overall, three hypotheses were supported and three were partially supported in the Asian subsample. Three hypotheses were supported and four were partially supported in the Hispanic subsample. Meanwhile, five hypotheses were not supported in the Asian subsample, and four were not supported in the Hispanic subsample. Table 10 presents detailed results of hypothesis testing among both Asian and Hispanic adolescents.

**IC and adolescent PWB**

As expected, this study found a significant negative association between IC and PWB among both Asian and Hispanic adolescents. This association held true regardless of levels of family cohesion, familism, bilingualism and language preference. These findings are consistent with results from many previous studies that confirmed the detrimental effect of IC on adolescent PWB (e.g., Behnke et al., 2011; Phinney & Ong, 2002). For example, Lee and Liu (2001) found that IC was related to lower PWB among both Asian and Hispanic college students. Nevertheless, IC among immigrant families is a multi-dimensional construct and existing measures of IC tend to vary from one study to another. Some of the measures may not possess good psychometric qualities (e.g. the IC index used in the present study). Therefore, more research on the measurement of IC is warranted in the future. In particular, measures that can differentiate IC related to adolescent development from that related to acculturation are in great need (Lee, 2004).
Table 10
Results for hypothesis testing among the Asian and Hispanic subsample

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Supported in the Asian subsample</th>
<th>Supported in the Hispanic subsample</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: IC and PWB</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>H2: Family cohesion and PWB</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>H3: Parent-child communication and PWB</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>H4: Parental control and PWB</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>H5: Adolescent U.S. acculturation and PWB</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>H6: Familism and PWB</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>H7: Bicultural acculturation and PWB</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>H8: Parental U.S. acculturation and PWB</td>
<td>N</td>
<td>P</td>
</tr>
<tr>
<td>H9: The moderating effect of family cohesion</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>H10: The moderating effect of familism</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>H11: The moderating effect of bicultural acculturation</td>
<td>P</td>
<td>P</td>
</tr>
</tbody>
</table>

Notes: Y=Supported; N=Not supported; P=Partially supported

Family cohesion and adolescent PWB

As expected, there was a significant positive effect of family cohesion on PWB among both Asian and Hispanic adolescents. In the literature, the evidence of this relationship among immigrant populations is still limited. Some developmental psychologists have suggested a positive association between family cohesion and PWB (e.g., Baldwin & Hoffmann, 2002). Therefore, this finding confirms the theory.

Parent-child communication and adolescent PWB

The hypothesis that there is a positive relationship between parent-child communication and adolescent PWB was not supported among Asian or Hispanic adolescents. Although significant correlations between communication and PWB among both groups were found, the association did not hold in the hierarchical regression analysis for both groups. This may be related to the fact that the measure of parent-child communication used in this study was, at least to some degree, flawed. It was focused on
parent-child communication about adolescent school activities and educational plans. However, communication is a multi-level concept that pertains to different aspects of adolescent daily life. For example, research has examined the effect of communication about sexuality and drug and tobacco use in relation to adolescent outcomes (Diiorio, Pluhar, & Belcher, 2003; Ennett, Bauman, Foshee, Pemberton, & Hicks, 2001). In addition, available research suggests that communication styles (e.g., parents being insulting or critical toward their children and parents’ usage of various psychologically controlling techniques), as opposed to communication content, may be particularly related to PWB among adolescents in the general population (Kernis, Brown, & Brody, 2000). Among adolescents in immigrant families, parents (particularly fathers) have been reported to not be good listeners, to dictate what to do and/or insult adolescents, which could have negative repercussions for adolescent PWB (Rhee et al., 2003). Therefore, future studies on adolescents in immigrant families may need to develop more comprehensive measures of parent-child communication. In particular, they may need to measure both the content and the style of communication.

**Parental control and adolescent PWB**

As hypothesized, evidence generally supports that higher levels of parental control and monitoring predict better adolescent PWB. However, this was not supported in the hierarchical regression analysis among either group in this study. This may be partially because of the measurement issue of parental monitoring. In the literature, parental monitoring has been viewed as a multi-dimensional construct that can be measured by parents’ knowledge of children, parental tracking and surveillance, as well as parenting rules (for a review, see Crouter & Head, 2002). The present study did not tap
into parental knowledge of children and tracking and surveillance. Thus, findings are inconsistent. Future research, therefore, could examine this relationship using a more comprehensive and psychometrically valid measure of parental control.

It is notable, however, that bivariate correlations between PWB and parental control did indicate that the two were significantly correlated among Hispanic but not Asian adolescents. In addition, Hispanic parents tended to set more rules than Asian parents for their children ($t(2,063) = -3.61, p < .001$). In this regard, previous evidence suggests that, compared to their Euro-American counterparts, parents from both groups have reported higher levels of parental monitoring, which were related to better adolescent well-being (Halgunseth, Ispa, & Rudy, 2006; Russell, Crockett, & Chao, 2010). But existing evidence did not indicate a clear pattern of the differences between the two groups. For example, Okagaki and Frensch (1998) reported that levels of parental monitoring of child activities and school performance were higher among Hispanic parents than Asian parents; however, Blair and colleagues (Blair, Legazpi Blair, & Madamba, 1999) did not find any ethnic differences in parental rule setting in terms of television watching, doing house chores and contact with friends.

The finding may be explained by difference in SES across the groups, that is, Southeast Asian groups from lower socio-economic status were overrepresented in this study. Among the Hispanic group, Cuban adolescents who mostly came from higher socio-economic backgrounds were overrepresented. The significant between-group differences in levels of parental monitoring, therefore, could be attributed to this sampling artifact. In order to compare parental monitoring patterns between Asian and
Hispanic adolescents, future studies could examine Asian and Hispanic adolescents of similar SES levels (Wamoyi, Fenwick, Urassa, Zaba, & Stones, 2011).

**Adolescent U.S. acculturation and PWB**

The hypothesis that there is a positive relationship between adolescent U.S. acculturation and adolescent PWB was partially supported among both Asian and Hispanic adolescents. This study relied on adolescent English proficiency and U.S. preference as measures of U.S. acculturation among Asian and Hispanic adolescents. PWB was positively related to adolescent English proficiency for both Asian and Hispanic adolescents (Espiritu & Wolf, 2001). However, U.S. preference was not associated with PWB for either group. This may be because of the essential difference in the two measures: U.S. preference (i.e., preference for doing things in American ways) measures the attitudinal aspect of acculturation while English proficiency captures the behavioral aspect of acculturation and can be viewed as outcomes of the acculturation process (Arends-Toth & van de Vijver, 2006). In fact, previous research findings are mixed, pointing to positive, inverse or no associations between the two (e.g., Crane et al., 2005; Duarte et al., 2008; Florsheim, 1997). This has been attributed to the fact that researchers used different measures of U.S. acculturation in their studies (Arends-Toth & van de Vijver, 2006).

Future acculturation studies may need to consider using more comprehensive (tapping different domains of acculturation) and standardized (with higher validity and reliability) measures of acculturation (Arends-Toth & van de Vijver, 2006), which are becoming more and more available in the literature. For example, the Acculturation Rating Scale for Mexican Americans-II (ARSMA-II, Cuellar, Arnold, & Maldonado,
incorporates different domains of acculturation including attitudes and behaviors. It also covers both an American and an Anglo dimension. Though developed and intended for use among Mexican Americans, it has been applied to measure acculturation among a wide array of Hispanic populations as well as Asian American populations.

**Familism and adolescent PWB**

Familism is often viewed as a cultural asset among both Asian and Hispanic immigrants (Coohey, 2001; Fuligni et al., 1999; Schwartz, 2007), and previous research generally suggests that familism is positively related to PWB among adolescents from both groups (Juang & Cookston, 2009; Smokowski & Bacallao, 2007). This relationship, however, was not confirmed among Asian or Hispanic adolescents in this study. Instead, there was a negative relationship between the two among Asian adolescents but no relationship among Hispanic adolescents. Among Asian adolescents, it is possible that familistic values could be associated with heightened intergenerational relationships (Stodoiska, 2008), which could in turn lead to poor psychological outcomes. These unexpected findings could also be attributed to the reliability issue of the familism index among Asian adolescents (the Cronbach’s Alpha was equal to .64 among the Asian subsample).

Similarly, the non-significant findings among Hispanic adolescents could be contaminated by the low reliability of the familism index (the Cronbach’s Alpha was equal to .56 among the Hispanic subsample). But more likely, this inconsistency could have to do with the content measured by the index of familism. As suggested by acculturation theories, the construct of familism pertains to multiple facets of family life, including familial support (or family obligations), family respect (considering the needs,
opinions, and wishes of the family even to a degree subjugation of self for family), family interconnectedness, family solidarity and family honor (e.g., Gamble & Modry-Mandell, 2008; Ghazarian, Supple, & Plunkett, 2008; Peña et al., 2011; Scharlach et al., 2006).

Although both Asian and Hispanic immigrant families seem to adhere to these values (Fuligni et al., 1999; Schwartz, 2007), in the process of acculturation, Hispanic adolescents may elect to retain a sense of familial interconnectedness and family honor but not familial support or family respect (Halgunseth et al., 2006; Steidel & Contreras, 2003). For instance, studies have shown that Hispanic culture emphasizes family interdependence and reliance on extended families (Phinney, Ong, & Madden, 2000). On the other hand, Asian culture highly values respect for parental authority and the elderly, family obligations and harmonious filial relationships (e.g., Kwak & Berry, 2001). As a result, Asian adolescents may elect to retain a sense of familial support and family respect in their acculturation process (Chhuon, Hudley, Brenner, & Macias, 2010; Impalli, 1999). This study employed an index of familism that relies more on familial support and family respect and thus provided evidence that Asian adolescents have stronger attitudes toward familial support and family respect than their Hispanic counterparts. Therefore, it is not surprising that familism operated differently between the two groups.

To further validate these findings, future studies need to utilize more standardized instruments that incorporate other aspects of familism, particularly those more relevant to Hispanic populations. For instance, using 18 items, one familism scale developed recently measures four different dimensions of familism: familial support, familial interconnectedness, familial honor, and subjugation of self for family (Steidel & Contreras, 2003), all of which seem more related to the Hispanic population.
Nevertheless, more encompassing and unified measures of familism need to be developed and tested among both Asian and Hispanic immigrant groups.

**Bicultural acculturation and adolescent PWB**

As expected, preference for foreign languages only among Asian adolescents and proficiency in English only among Hispanic adolescents were both related to lower PWB, which is consistent with previous research that the integration acculturation strategy and other bicultural acculturation orientations are related to better psychological outcomes among both Asian and Hispanic adolescents (e.g., Farver et al., 2002; Love & Buriel, 2007). These findings could suggest that preference for foreign languages only is more likely to jeopardize well-being among Asian adolescents and proficiency in English only is more likely to do so among Hispanic adolescents. However, this research also found that proficiency in foreign languages only and preference for English only were not related to PWB among both Asian and Hispanic adolescents, which is not consistent with the hypothesis. These inconsistent findings could indicate that the model may be misspecified without the interaction terms between IC and bicultural acculturation. It is also possible that the measures used in this study for bicultural acculturation solely relied on adolescent language characteristics. Therefore, there is a need for future research to employ standardized instruments of acculturation that are capable of measuring bicultural acculturation orientations (e.g., the ARSMA-II mentioned above).

**Parental U.S. acculturation and adolescent PWB**

As hypothesized, this study provided some evidence on the negative effect of parental acculturation (measured by parental U.S. preference) among Hispanic but not Asian adolescents. However, parental acculturation measured by English proficiency was
not associated with adolescent PWB among either group. Interestingly, in a previous study on parental acculturation and PWB among Hmong adolescents (Xiong, 2005), parents’ report of their acculturation was not associated with adolescent PWB; however, adolescents’ perceptions about parental acculturation were negatively associated with adolescent PWB. Due to the lack of evidence in this regard, it is difficult to tease out reasons for these conflicting findings. But measurement issues of parental U.S. acculturation (as in the discussion on the results of adolescent U.S. acculturation) could be one of the reasons. Also possible is that the effect of parental U.S. acculturation is modified by parenting skills aligned with U.S. cultural values. As shown in Ying’s (2007) research, providing trainings in parenting skills among Asian immigrant parents has resulted in better outcomes in parent-child relationships, which may further benefit adolescent PWB.

Nevertheless, evidence suggests that it could be intergenerational acculturation gaps, or the different pace of acculturation between immigrant parents and children (Choi, He, & Harachi, 2008) that is more influential in shaping adolescent PWB than parental acculturation itself. Previous research generally supports that parent-child acculturation gaps are negatively associated with adolescent PWB (e.g., Choi et al., 2008; Crane et al., 2005; Farver et al., 2002; Phinney & Ong, 2002; Ying & Han, 2007b, 2007c). In this direction, it is important for future research to examine the effect of the interaction between parental and child acculturation (Birman, 2006a, 2006b). Future research also needs to pay attention to the measurement of parental acculturation, as discussed previously on adolescent acculturation.
The moderating effect of family cohesion

The hypothesis that family cohesion decreases the harmful effect of IC on PWB was supported only among Hispanic adolescents. Specifically, higher levels of family cohesion among Hispanic adolescents were related to higher levels of PWB in the face of IC. Descriptive statistics showed that levels of family cohesion were much higher among Hispanic than Asian adolescents (see Table 1). Therefore, Hispanic but not Asian adolescents may perceive family cohesion as important, which in turn could mitigate the harmful effect of IC on their well-being. This is consistent with a previous study which found that strong family cohesion helped to diminish the negative effect of IC on PWB among Cuban immigrant adults (Rivera et al., 2008). Nevertheless, future research needs to replicate these findings among more nationally representative Asian and Hispanic adolescents. Also, it is important to investigate why family cohesion is more beneficial in relation to the effect of IC on well-being among Hispanic than Asian adolescents.

The moderating effect of familism

The hypothesis that familism reduces the harmful effect of IC on PWB was not supported among Asian or Hispanic adolescents. Familism failed to moderate the effect of IC among Hispanic adolescents. As discussed earlier, as a multi-dimensional construct, familism pertains to familial support, family respect, familial interconnectedness and family honor. However, the familism index as measured in the study seems to be more relevant to Asian culture which emphasizes familial support and family respect. In contrast, it may not be a valid instrument for Hispanic adolescents. Moreover, the familism index was also flawed due to the lack of reliability indicated by the very low reliability score among Hispanic adolescents. Both could contribute to the fact that
familism acted as a moderator for Asian but not Hispanic adolescents. Future research, therefore, needs to take these issues into consideration and use more scientifically sound measures of familism, and probably those appropriate for both Asian and Hispanic adolescents.

Meanwhile, contrary to the hypothesis, familism was an exacerbator rather than a buffer for the effect of IC on PWB among Asian adolescents. In other words, Asian adolescents who perceived a high level of familism reported lower PWB than those who perceived a low level of familism. This was not surprising given that the main effect of familism on PWB was also negative (as shown in the step 3 analysis of hierarchical regression modeling). Consequently, both IC and familism may act as risk factors for Asian adolescents, which in turn could harm their PWB to a larger degree when they perceived both as high.

**The moderating effect of bicultural acculturation**

As expected, this research provides some evidence on the moderating effect of bicultural acculturation on the association between IC and PWB. For instance, in the face of IC, proficiency in both English and foreign languages was related to higher PWB than proficiency in English only or proficiency in foreign languages only among Asian adolescents. In addition, among Hispanic adolescents, preference for both the English and foreign languages was related to higher PWB than preference for English only especially when IC deteriorated. Previous research has indicated that bicultural acculturation is a protective factor for adolescent well-being (e.g., Farver et al., 2002), but evidence is still lacking in terms of the moderating effect of bicultural acculturation on IC. This dissertation research helps to bridge the gap in the literature.
However, Hispanic adolescent bilingualism (i.e., language proficiency) failed to moderate the effect of IC. More surprisingly, Asian adolescent preference for English only in the event of IC was related to generally higher PWB than preference for both the English and foreign languages, especially when IC deteriorated. In other words, Asian adolescent English preference, as opposed to bilingual preference, moderated the detrimental effect of IC on adolescent PWB in a positive direction. These findings suggest that bilingualism (i.e., language proficiency) among Hispanic adolescents may not be that important in changing the effect of IC on PWB. In addition, preference for English only may be of help to Asian adolescents in terms of improving PWB. Because bicultural acculturation was measured only by language related variables, future studies may need to assess acculturation using standardized instruments that are capable of measuring bicultural acculturation in terms of different acculturation domains (e.g., behaviors, attitudes).

**Limitations and Strengths**

One limitation of this study is that it does not use a nationally representative sample. Therefore, the findings cannot be generalized to all Asian and Hispanic adolescents from immigrant families living in the U.S. Most of the sample was recruited in San Diego, CA and Miami, FL, areas with a large concentration of Asians and Hispanics. In addition, comparing the sample composition to the national data on immigrant distribution, it is clear that Southeast Asian and Cuban immigrants were overrepresented in the sample; Chinese, Filipino and Mexican immigrants, on the other hand, were underrepresented. The sample, thus, may not represent immigrant populations in other areas in CA and FL or other states in the U.S. Nevertheless, the literature has
largely focused on adult immigrants (Suárez-Orozco, 2007). With a size of around 1,000 for both the Asian and Hispanic subsample, the findings can still provide valuable insights into the risk and protective factors for PWB in Asian and Hispanic children of immigrants.

Secondly, given the within-group diversity among these two larger ethnic groups (e.g., Perreira & Ornelas, 2011), categorizing different ethnic groups as Asian or Hispanic, as done in this study, may lose important information (such as national identities) on adolescents from particular ethnic groups (Deater-Deckard, Bornstein, & Lansford, 2007). In addition, ethnic groups within Hispanic or Asian pan-ethnicity are not necessarily the same in terms of history, language and culture (Fong, 2003c). For instance, in this study, hierarchical regression analysis revealed that Vietnamese and Laotian adolescents reported significantly lower PWB than their Filipino counterparts and Mexican adolescents showed significantly lower PWB than their Cuban counterparts. Therefore, these within ethnicity variations might bias the results.

Nevertheless, research is abundant on Asian or Hispanic immigrants separately, but it falls short on comparative studies. This study bridges this gap by comparing Asian and Hispanic adolescents. Immigrant groups from the same region (e.g., Asia) inevitably share some common characteristics (Chan & Leong, 1994). Comparing Asian adolescents in immigrant families to their Hispanic counterparts offers insights into general patterns of adolescent PWB in relation to family and acculturation factors and could further inform the development and provision of more culturally competent services to these two groups.
Additionally, with such a diverse sample, this study is able to incorporate adolescents from different generations (both the 1.5 and 2\textsuperscript{nd} generation) and understudied groups (e.g., South Americans, Caribbeans and South-east Asians) and controls for the effect of generation status and national origins. Since researchers often investigate well-being among a few immigrant groups (e.g., Mexican and Central American origins) and treat immigrants from different generations as a whole (Suárez-Orozco, 2007), this study also helps to bridge the gap of research on generation status and understudied groups (Suárez-Orozco, 2007).

Thirdly, although a strength of the study is the ability to analyze a wide range of theoretically important family dynamics and acculturation variables, some of the measures may not comprehensively capture the theoretical concepts: they consist of single-item questions (e.g., adolescent language preference), or two-or-more-item indices (e.g., the parent-child communication index). In addition, the IC index and the familism index have questionable or poor reliability. As discussed above, part of the reasons could lie in the complex nature of the two constructs. IC, for example, can be measured in terms of the developmental process of adolescents or cultural differences between parents and adolescents (Lee, 2004). Unfortunately, the IC index used in this study fails to differentiate between the two kinds of conflict. Familism is also a multifaceted construct and thus may be difficult to capture. The three indicators of the familism index used for this study, for example, were more focused on adolescent attitudes toward family obligation, which is a cultural concept more prevalent among Asians and less relevant to Hispanics (Kwak & Berry, 2001). Nevertheless, by incorporating these constructs and their interactions, this study highlights the moderating effects of traditional family values.
and practices as well as bicultural acculturation on the stressful and heightened parent-child relationships in relation to adolescent PWB. This is consistent with a resilience perspective on the development of adolescents in immigrant families (Suárez-Orozco, 2007).

**Recommendations for Future Research**

Based on the above discussions, the following additional directions for future research are recommended:

(1) Collect a nationally representative sample of Asian and Hispanic adolescents in immigrant families. A nationally representative sample is available among Asian and Hispanic immigrant adults (e.g., the National Latino and Asian American Study), but few research efforts have been made to collect mental health data among a nationally representative adolescent sample (Perreira & Ornelas, 2011). Drawing representative sample not only increases the generalizability of research findings to adolescents in immigrant families as a whole, but makes the comparison between different ethnic groups more valid (Suárez-Orozco, 2007). It is also reasonable to argue that such a study should collect data on acculturation and family dynamics as these are important factors in shaping adolescent PWB.

(2) Incorporate standardized measures. The lack of standardized instruments contributes to the inconsistency of research on acculturation and family dynamics among children and adolescents of immigrants (De La Rosa, 2002). There is a need to assess IC, parental control, parent-child communication, familism and acculturation based on more standardized and unified instruments that tap into multiple dimensions of these constructs. For example, past research on acculturation has largely focused on one dimension of
acculturation, i.e., adaptation to the host society, and relying on language proficiency and preference to measure acculturation. A bidimensional and multi-domain perspective on acculturation is certainly warranted in the future. When comprehensive measures are not available, researchers may also include multiple measures for one construct (e.g., those measuring different dimensions) or collect triangulated data (e.g., self-reports, parent reports and teacher reports) to meet the challenge of validity in conducting research with multicultural groups (Suárez-Orozco, 2007).

(3) Examine the interactions between different variables involved in the process of migration pertaining to adolescent mental health outcomes. Rather than investigating what factors may contribute to mental health conditions among immigrants, which may vary from one study to another given the vast diversity of immigrant groups, researchers have suggested conducting research on the interactions between these factors (Aronowitz, 1992). According to Berry and Sam (1997), this approach is illuminating in understanding under which circumstances they have less serious mental health conditions. This study already indicates the practicality of this idea as evidenced by the interactions by IC and family and acculturation variables. Future studies could identify other risk factors for mental health among adolescents in immigrant families and investigate how these effects may be buffered by protective factors.

(4) Conduct longitudinal studies. Although the CILS is longitudinal in design, it lacks longitudinal data on key variables of interest such as familism, parent-child communication, parental control and adolescent bicultural acculturation. Almost all longitudinal data are limited to the first two surveys because the questionnaire of the final survey is very different from the first two. Nevertheless, future research could take
advantage of the longitudinal data of the CILS to examine some of the research questions studied in this dissertation research (e.g., the association between IC and PWB).

Meanwhile, almost all studies on well-being among children of immigrants are based on cross-sectional designs. The lack of longitudinal data in this respect imposes serious limitations on relevant studies on mental health and its determinants among children of immigrants. Researchers have been arguing for the use of longitudinal data (De La Rosa, 2002; Fuligni, 1998a; Perreira & Ornelas, 2011). However, conducting longitudinal research may be more expensive and time-consuming and as a result, there is still a lack of this kind of research in the literature. Nevertheless, as argued by Phinney (2006), researchers may at least include markers of time since immigration (e.g., generation status, length of stay) as independent variables in cross-sectional studies to track changes in acculturation outcomes (e.g., language proficiency and ethnic identity) when longitudinal data are not readily available. As covariates, these time sensitive variables are incorporated in this dissertation research.

(5) Pursuing more qualitative studies. Qualitative studies are more appropriate for the purpose of gaining a better understanding of the unique experiences of each immigrant group (Zhou, 1997). In addition, because of the multidimensionality of the various constructs involved in this study, qualitative studies are needed to inform the development and selection of quantitative measures. For instance, although it is the fundamental difference between individualism of U.S. society and collectivism of Asian and Hispanic cultures that makes intergenerational and intercultural conflict possible, areas of clash may vary between different immigrant groups. Similarly, each group may retain particular focuses on certain aspects of familism. To better understand these
phenomena, qualitative approaches such as ethnographic observations and family narratives could be particularly helpful (Chun, 2006).

**Implications for Social Work Practice and Policy**

**Practice implications**

Experiencing IC and other stressors relating to acculturation, Asian and Hispanic adolescents from immigrant families may be more likely to suffer from mental health problems than their non-immigrant counterparts. However, immigrants from Asian and Hispanic origins have been frequently reported to underuse mental health services (Hall, 2001; Pedersen, 2007; Sue, Fujino, Hu, Takeuchi, & Zane, 1991), partly due to the lack of social workers and other service providers that can provide effective services to adolescents in immigrant families, especially those with limited English proficiency (Alegria, Mulvaney-Day, Carson, & Woo, 2010). This study provides several implications on how to make services more available and responsive for Asian and Hispanic populations.

First of all, it is imperative to increase social workers’ competency to work with immigrant groups by enhancing their understanding of different ethnic cultures. Social workers often assume an assimilationist perspective when it comes to the acculturation process experienced by different immigrant groups. In other words, they often believe that immigrants eventually assimilate into U.S. mainstream society by fully abandoning their ethnic cultural values and practices (Fong, 2003b). This is far from the reality. According to Berry and Sam (1997), immigrant groups tend to employ integration as an acculturation strategy which allows for both retention of national-origin cultures and acquisition of the culture of the mainstream society. To change social workers’
misperceptions about the acculturation experience, it has been proposed that social
workers incorporate acculturation, especially with respect to multicultural norms and
beliefs, in the psychosocial assessment for immigrants (Fong, 2003b). Additionally, for
the purpose of developing indigenous and culturally competent strategies as
empowerment tools, social workers may need to be involved in more trainings on service
planning and provision for multicultural families (Alegría et al., 2010).

Secondly, in light of the detrimental effect of IC on the well-being among
adolescents in immigrant families, social work practitioners that work with immigrant
families may need to acknowledge the fact that the migration process is intrinsically
stressful and that adolescents in these families are often confronted with
intergenerational/intercultural conflict (Sluzki, 1979; Zhou & Bankston, 1998). They also
need to directly target IC in service planning and provision (Lipsicas & Mäkinen, 2010).
In addition, as supported in this study, some bicultural orientations among adolescents in
immigrant families may protect against the harmful effect of IC on adolescent mental
health outcomes. It might be helpful for social workers to take biculturalism into account
in interventions aimed at reducing IC in immigrant families. To this end, researchers and
practitioners have made efforts to develop programs to strengthen bicultural
competencies among adolescents and their immigrant families.

For instance, the Bicultural Effectiveness Training (BET) program is a family-
based intervention to enhance bicultural skills among both Hispanic immigrant parents
and their children (Szapocznik & Kurtines, 1993; Szapocznik et al., 1986; Szapocznik et
al., 1984). With an ultimate goal of preventing and decreasing behavioral problems and
drug abuse among Hispanic adolescents, this program is delivered by a family therapist in
the family setting. The key is to change family dynamics by providing family members with greater competence in managing their cultural differences. To alleviate conflicts between parents and adolescents, the program not only enables parents to familiarize themselves with U.S. mainstream culture, but also exposes adolescents to Hispanic cultures. Tested among Cuban American families as well as other Hispanic families, it has shown effectiveness in improving intergenerational relationships and reducing adolescent problem behaviors (Szapocznik et al., 1986; Szapocznik et al., 1984).

According to its developers, it is easily replicable, deliverable as a standardized service, and ready for wide distribution (Szapocznik et al., 1984).

Similarly, Strengthening Intergenerational/Intercultural Ties in Immigrant Families (SITIF) was developed based upon the assumption that immigrant parents’ lack of knowledge of American cultural values and continual use of traditional parenting skills partly contribute to the intensified parent-child relationships (Ying, 2007). Although targeting IC, SITIF maintains a focus of intervention on immigrant parents. To equip Asian parents with more competencies in U.S. mainstream culture, it utilizes a curriculum to help parents gain awareness in cultural differences, knowledge in the American mainstream culture, as well as skills in communication and parenting aligned with new cultural values. Also different from BET, the program is delivered using a traditional lecture method, experiential exercises, and homework assignments for small groups of parents. There is evidence of its effectiveness in preventing and reducing IC among Chinese immigrant families (Ying, 1999). It was claimed as a universal program for immigrant parents of any country of origin, although this largely remains untested in practice (Ying, 2007).
Finally, social workers may also need to pay attention to other indicators of family dynamics and processes such as family cohesion and parental control and monitoring. Programs are also available in this regard. Unlike the above programs solely targeting IC, Bridges/Puentes is a comprehensive program that is aimed at the quality of parenting, parent-child relations, youth coping competencies, family-school linkages, and culturally linked family interactions among Mexican families (Gonzales, Dumka, Mauricio, & Germán, 2007, p. 272). Among many of its different components, the parenting group intervention and the family strengthening intervention (including separate parental and adolescent groups and a combined parent-child group) are noteworthy. For example, the parenting group was designed to better parenting skills in parental control and monitoring as well as other techniques. The family strengthening intervention encourages parents and adolescents to reflect on their familial and cultural strengths and invites them to provide mutual support with each other in separate parental and adolescent groups. In the combined parent-child group, efforts are focused on strengthening family cohesion and relations by providing opportunities for them to interact with each other in positive ways. As suggested in this study, these interventions targeting family dynamics could be beneficial to well-being among adolescents in immigrant families.

**Implications for program development**

For the purpose of better developing and evaluating these kinds of programs, a few recommendations are provided as follows. Among them, the first two are general recommendations relevant to both Asian and Hispanic groups. On the other hand, the other two are more relevant to Asian or Hispanic adolescents.
(1) As shown in this study, both adolescent and parental U.S. acculturation could play a role in predicting adolescent psychological outcomes. Adolescent bicultural acculturation could be the key in reducing IC, which points to the importance of exposure of adolescents to a bicultural milieu. Parental involvement in U.S. cultural values could be also important, if it is coupled with trainings on parenting skills. Also, a combined parent-child group could be critical because it can not only promote bicultural understanding among family members but also provide opportunities for them to interact with each other. Thus, future program designers may need to incorporate an adolescent, a parental and a combined component in their interventions for better outcomes.

(2) As for the method for service provision, a community-based approach could help to make these programs more available and accessible to immigrant families. In addition to programs provided in community centers (as in SITIF described above), school-based mental health programs are also likely to increase the service access rate among children of immigrants (Boyce, 2010). It is possible to offer all the adolescent, parental and combined parent-child interventions in a community setting. In addition, a group format for the separate adolescent and parental components could also be more efficient due to its potential to reach more participants at a time. Given the urgent need for immigrant families facing IC, implementing these programs in a group format and a community setting may be a better choice than in a family setting and for a single family at a time. Therefore, future programs need to be compatible with the group format and the community and/or school setting.

(3) Future programs may need to address distinct cultural elements relevant to Asian and Hispanic populations, respectively. For instance, this study reveals that the
moderating effects of family cohesion and familism operate differently between Asian and Hispanic adolescents. Although evidence on these effects is still scarce, these results should be considered to inform culturally competent programs for Asian and Hispanic adolescents and their families. Family cohesion seems to be more important for Hispanic adolescents and may therefore need to be prioritized in programs serving Hispanic groups.

(4) Finally, this study indicates that the effects of bicultural acculturation measured by bilingual proficiency and preference were also different between Asian and Hispanic adolescents, which also need to be taken into account by program developers. In the U.S., English language learner programs are mostly part of the public education system and offered in school settings, although they can also be provided in community settings. To increase efficiency, community-based language programs may be provided in conjunction with other community programs serving immigrant families. Considering the different patterns of the effects of bicultural acculturation, bilingual proficiency could be addressed as a primary goal among Asian but not Hispanic adolescents enrolled in community-based programs. In addition, among Asian adolescents, these programs may need to not only enhance bilingual proficiency but also cultivate all-time preference for speaking English. Finally, since school-based language programs are more related to policy issues, they are discussed as part of policy implications in the following section.

Policy implications

Recently, the U.S. has experienced a paradigm shift in how to provide language assistance programs for children of immigrants. Since the adoption of the No Child Left Behind Act in 2002, bilingual programs in many states have been abolished or replaced with all-English programs, although the number of students with limited English
proficiency (LEP) enrolled in English language learner (ELL) programs has been increasing in the educational system (Crawford, 2008). Policy makers often view instruction involving using native languages in ELL programs as an impediment for English acquisition. Furthermore, due to a more accountability-driven approach in the educational system, bilingual instruction for ELL programs is diminished and school-based ELL programs are evaluated solely based on the number of LEP students reclassified as fluent English users. As indicated by this study, however, there is a potentially positive effect of biculturalism on adolescent well-being. Therefore, bilingual programs that emphasize the importance of native languages need to be restored in ELL programs serving both Asian and Hispanic adolescents.

In addition, policy makers need to pay attention to the four forms of acculturation outlined in Figure 1 and adopt relevant policies that are beneficial to immigrants and their well-being. For example, as this study shows, integration or bicultural acculturation is associated with better psychological outcomes among adolescents in immigrant families. Thus, integration policies should have priority over other types of policies. According to Berry and Sam (1997), in policies, terms such as “cultural communities”, “nationalities” or “ethnocultural groups” imply more integration-oriented policies. In addition, policy makers need to maintain a balance between encouraging immigrants to adapt to the larger society and encouraging the host society to recognize the value of different ethnic cultures of immigrants (Berry & Sam, 1997). Generally speaking, U.S. government has been doing well in terms of incorporating multicultural groups in society (Kasinitz, Mollenkopf, Waters, & Holdaway, 2008); however, policies that build on the cultural traditions of immigrant groups need to be strengthened. In particular, policies are
warranted in terms of promoting strong traditional family values among Asian and adolescents (Fuligni & Fuligni, 2007).

Finally, adequate funding is a prerequisite for the success of these programs among adolescents in immigrant families no matter what format each program may adopt. For instance, while schools are expected to engage multicultural students, including children of immigrants, in school-based mental health programs, they are not often provided with resources for meeting student needs due to increasing public scrutiny and funding constraints (Alegria et al., 2010). As a result, few schools have established a system that helps multicultural families gain access to culturally competent services (Alegria et al., 2010). Similarly, without sustaining public investment, it would be difficult for these community-based programs to succeed and make changes in the well-being among adolescents in immigrant families.

**Conclusions**

Acculturation, family dynamics and their interrelationships are all important in understanding PWB among adolescents in immigrant families. It is essential to examine these relations using a comparative perspective. Using data from the CILS, this study found that the following patterns are consistent among both Asian and Hispanic adolescents: IC is a risk factor for adolescent PWB (H1); family cohesion predicts better PWB (H2); Adolescent English proficiency is related to higher levels of PWB (H5). However, more between-group differences are detected: preference for foreign languages was related to lower PWB than preference for both languages only among Asian adolescents (H7); proficiency in English only was associated with lower PWB than proficiency in both languages only among Hispanic adolescents (H7); parental U.S.
preference was negatively associated with PWB only among Hispanic counterparts (H8); family cohesion buffered the effect of IC among Hispanics but not Asians (H9); familism exacerbated the effect of IC among Asians but not Hispanics (H10); bilingual proficiency decreased the effect of IC only among Asians (H11); preference for both the English and foreign languages decreased the effect of IC among Hispanics but preference for the English language only decreased the effect of IC among Asian adolescents (H11).

These findings point to the important and complex ways in which acculturation, family dynamics and their interactions operate as risk or protective factors for mental health outcomes among adolescents from Asian and Hispanic immigrant families. Social work professionals working with these populations should familiarize themselves with themes of these factors and make efforts to develop and implement innovative interventions. Policy makers need to support school-based bilingual language programs and promote integrationist policies by ensuring enough public funding.
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