

Exploring Adult Attachment, Acculturation and Psychological Well-being in Chinese/
Taiwanese Immigrants

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ABSTRACT

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The purpose of this study was to explore the relationships among adult attachment, acculturation, and psychological well-being in Chinese/ Taiwanese immigrants. Specifically, the present study examined how adult attachment predicted psychological well-being and how acculturation moderated the relationship between adult attachment and psychological well-being. Adult attachment was measured by two dimensions, attachment anxiety and attachment avoidance. Acculturation was measured by two domains, behavioral aspect and psychological aspect of acculturation. Bivariate correlation analyses on attachment anxiety, attachment avoidance and psychological well-being were conducted. The results suggested that both attachment anxiety and attachment avoidance were significantly negatively associated with psychological well-being. In addition, hierarchical multiple regression analyses were performed where attachment anxiety and attachment avoidance were entered as predictor variables; acculturation towards Chinese orientation, acculturation towards American orientation and Asian cultural values as moderating variables; psychological well-being as the outcome variable. The results indicated that acculturation towards American orientation moderated the relationship between attachment anxiety and psychological well-being and the relationship between attachment avoidance and psychological well-being. The findings and discussions, limitations, implications for future research, clinical practice and training were addressed.

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DEDICATION

This dissertation is dedicated to my participants who made great contributions to my work and all the Chinese/Taiwanese immigrants who strive for fruitful lives in the U.S.

Chapter I

Introduction

The United States has become one of the most ethnically diverse countries in the world. According to the U.S. Census data (2010), one of every five children in the United States is a child of immigrant parents. The numbers are estimated to rise rapidly in the near future so that immigrants who were born overseas will reach up to 27% of the total U.S. population by 2050 (U.S. Census Bureau, 2010). Over the past few decades, large influxes of immigrants from Asian countries have reshaped the nature of ethnic dynamics in the United States (Noh & Avison, 1996). In the 1960s, Asian-born immigrants accounted for just five percent of immigrant populations in the United States, but by 2007, the population increased to nearly 40 percent (U.S. Census Bureau, 2010). Today, the Asian immigrant population is the second-largest immigrant population in the United States (40.3%), following the Latino immigrant population (40.7%). The tremendous growth in the numbers of Asian immigrants to the United States has led to increased interests in their mental health and that of their descendants. Past studies indicated that Asian immigrants in the United States were likely to have fewer physical health problems than their U.S.-born counterparts (Takeuchi et al., 2007). However, less is known about their mental health. Until recently, no national estimates were available on the prevalence of mental disorders among Asian immigrants. Much of what we know about immigration and mental health comes from the data of admission rates in mental health service settings (Takeuchi et al., 2007). Due to the stereotype of “model minority” regarding Asian Americans/ Asian immigrants, the underutilization of mental health services and therefore low rate of diagnosable mental health illness in Asian Americans/Asian immigrants have been often underestimated and overlooked

(Patel, 2008). Previous studies indicated that Asian Americans and Asian immigrants reported greater levels of psychological distress than the European American counterparts (Abe & Zane, 1990; Okazaki, 1997; Hwang & Ting, 2008). Particularly for immigrants, they were more likely to experience the loss of their home culture and the disruption of interpersonal bonds during the immigration process. Some researchers attempted to explore immigrants and mental health issues from an attachment theory perspective (Wei, Mallinckrodt & Zakalik, 2004; Wang & Mallinckrodt, 2006; van Oudenhoven & Hofstra, 2006; Sochos & Diniz, 2011). It was suggested that attachment theory has provided an important theoretical framework to explore adaptation difficulties and the experiences of psychological distress on immigrants.

The term *attachment* can carry different meanings to different people in varied contexts, such as affection, affiliation, or a sense of belonging. It may also imply different aspects of relationships, such as parental, marital, peer, and cultural aspects. *Attachment theory*, originally proposed by Bowlby (1969), specifically addresses the relationship between the infant and the caregiver(s). According to Bowlby (1969), human beings have the need for closeness and connection with others from birth. He observed that separated infants would present different behaviors (e.g., crying, clinging, frantically searching, etc.) to prevent separation from their parents/ caregivers or to reestablish proximity to missing parents. A secure attachment relationship was found essential to a child's personality development and for developing a sound and secure relationship with others. Past studies showed the connection between early secure relationships with the caregivers and later positive psycho-social outcomes, such as positive mood, emotion regulation, and social competence (Moran & Bento, 1998; Posada et al., 1999). Other studies found that insecure attachment relationships predicted negative psychological

outcomes and poor emotion regulation (Cassidy & Shaver, 2008). It should be noted that personal characteristics, cultural values and some other psychosocial factors might also influence various outcomes for an individual's attachment development. Over the past few decades, attachment theory has been applied to adults to understand the development of healthy and effective selves, coping strategies, and interpersonal satisfaction (Cassidy & Shaver, 2008; Lopez & Brennan, 2000). *Adult attachment* is described as the position of a person both towards himself/ herself and towards the world around him/ her, based on the experiences a person had with the attachment figure from his/ her childhood (Main, 1995). Hazan and Shaver (1987) explored the context of romantic relationships based on Bowlby's attachment theory. It was found that people with secure attachment styles tended to develop a positive sense of personal competence and the ability to maintain supportive relationships, whereas, people with insecure attachment styles were less likely to have a positive sense of personal competence and were unable to maintain supportive relationships (Hazan & Shaver, 1987). Sochos and Diniz (2011) further indicated that adults, similar to infants, have the innate needs to remain emotionally and physically close to trusted individuals who are expected to act as sources of help in times of hardship.

There have been disagreements about attachment theory regarding its universality of core concepts and its applicability to non-Western cultures. Rothbaum et al. (2000) emphasized the importance of cross-cultural validity and argued the applicability of attachment theory in non-Western cultures (e.g., Japan). The researchers contended that the concept of attachment should incorporate different cultures to enrich the diversity of the theory. The supporters of Rothbaum et al.'s claim further addressed that the lack of cross-cultural sensitivity would lead to the

generalization of Western attachment styles to other cultures (Chao, 2001). Therefore, culturally adjusted attachment should be taken into consideration so as to have a full understanding of what attachment security actually means across cultures. On the other hand, the critics of Rothbaum et al.'s statements argued that while acknowledging that certain attachment behaviors might be expressed differently across cultural contexts, the core concepts of attachment theory are culturally universal (van IJzendoorn & Sagi, 2001; Grossmann, Grossmann, & Kepler, 2005; Wang & Mallinckrodt, 2006). These researchers suggested that culture should be treated as a process integral to the way people experience themselves and society, while considering the inter-cultural and intra-cultural differences (Cassidy & Shaver, 2008). Despite such disagreements between the above two different views, a majority of researchers have been convinced by the notion that the core concept of attachment theory is universal, whereas, attachment beliefs and behaviors may vary from culture to culture (Wang & Mallinckrodt, 2006; Cassidy & Shaver, 2008; van IJzendoorn & Sagi-Schwartz, 2008). More specifically, the desire for a secure attachment relationship is considered universal, while the attachment behaviors individuals present may differ from culture to culture. When exploring attachment issues on a non-Western population, it is important to consider cultural-related factors that might directly or indirectly manifest attachment behaviors.

As discussed earlier, researchers have attempted to identify various protective/ risk factors of mental health for Asian immigrants, such as stress, social support, social economic status, and culturally-related factors. Among various cultural factors, one of the most extensively researched is acculturation. *Acculturation* is defined as the process of acquiring the cultural characteristics of the new country to which one migrates (Berry, 1998). It symbolizes a process of relearning a

new framework of culture and reorienting cultural values. Specifically, immigration usually implies the disruption of significant interpersonal relationships from the country of origin, relationships in which the individual may have felt loved, cared for, and valued (Sochos & Diniz, 2011). Although such relationships may not necessarily be dissolved when moving to another country, supportive and familiar people may no longer be part of immigrants' everyday routines and may not be directly accessible in times of need (Wang & Mallinckrodt, 2006). In addition to experiencing such relational instability, immigrants are forced to deal with environmental challenges, such as new languages, new cultures, and new ways of interacting with others that may exacerbate their adjustment difficulties. Ward and Kennedy (1999) identified two types of major immigration difficulties when migrating to a new culture, the difficulties of *sociocultural adaptation* and *psychological adjustment*. *Sociocultural adaptation* refers to the acquisition of culturally-specific social skills, including culturally appropriate behaviors, customs and habits, and language. *Psychological adjustment* means a process of psychological and emotional adjustment to establish and maintain a stable and reciprocal relationship with the environment, including a clear sense of personal and cultural identity, good mental health, and the achievement of personal satisfaction in the new cultural context (Ward & Kennedy, 1999).

Past studies on acculturation and mental health across different ethnic groups have demonstrated conflicting results. Some studies demonstrated positive relationships between acculturation and mental health. From this perspective, acculturation was considered as the evidence that individuals successfully adjust to the new environment and are capable of demonstrating the competence in psychological and social functioning (Shen & Takeuchi, 2001). Other studies indicated negative relationships between acculturation and mental health. From this

perspective, acculturation was viewed as a risk factor for psychological well-being that may lead to the deterioration of mental health (Shen & Takeuchi, 2001). Given the complexity of acculturation, researchers developed different conceptual models to explain it. Two of the most well-known models are the *unidimensional* model and the *bidimensional* model. The *unidimensional* model assumes that individuals, who migrate from a different culture, are either likely to preserve their cultural heritage or adopt the mainstream culture. In other words, they can only hold one culture at the same time (Chang, Tracey, & Moore, 2005). In contrast, the *bidimensional* model assumes that individuals, who migrate from a different culture, are capable of adopting the new culture without giving up facets of self-identity developed in their culture of origin (Berry, 1992; Ryder, Alden, & Paulhus, 2000). Compared to the unidimensional model which has been criticized by its assumption that individuals cannot retain the behaviors and values of their culture of origin as they incorporate the norms of the mainstream culture, the bidimensional model has been more widely applied given its assumption of the flexibility of mental state (Miller, 2007).

In addition to the distinction of the above two models, researchers also tried to identify two domains of acculturation, including *behavioral acculturation* and *psychological acculturation* (Kim & Abreu, 2001; Chang, Tracey, & Moore, 2005). *Behavioral acculturation* refers to an individual's engagement in the behaviors that represent certain cultural practices or traditions of an individual's host and heritage culture (e. g., language, food preference, etc.). *Psychological acculturation* refers to an individual's psychological/ emotional endorsement of cultural values and heritage (Kim, Atkinson, & Yang, 1999). While a majority of studies mainly focused on the behavioral domain of acculturation, Kim, Atkinson, & Yang (1999) stressed the importance of

cultural values and later developed the *Asian Values Scale* to account for this. Research findings showed that the cultural values of the immigrants whose cultures of origin are different from Western cultures, such as collective identity, emotional inter-dependence, in-group solidarity, harmony, duties, and obligations, stand in sharp contrast to individualistic Western cultural values which emphasize autonomy, emotional independence, and the primacy of personal goals over group goals (Tsai-Chae & Nagata, 2008). While it may be easier for immigrants to adopt their *behaviors* to the host culture, it is more likely for them to maintain their culture of origin *values* for a longer period of time (Kim, Atkinson & Yang, 1999).

Researchers have attempted to explore the connection among adult attachment, acculturation and mental health in different ethnic groups (Wei et al. 2004; Wang & Mallinckrodt, 2006; Sochos & Diniz, 2011). Wang and Mallinckrodt (2006) explored acculturation, attachment and psychosocial adjustment in Chinese/Taiwanese international students in the United States. The findings of the study indicated that low levels of acculturation predicted high levels of attachment anxiety. Insecure attachment styles predicted higher levels of psychological distress and adaptation difficulties for international students. It was suggested securely attached immigrants were more likely to form and maintain supportive relationships in their host country even when being under environmental stress, whereas, less securely attached immigrants became more psychologically distressed when they encountered difficulties in understanding local culture and experience social isolation. Such finding was consistent with previous studies which suggested that that attachment style reflects a stable pattern of experiencing interpersonal relationships and managing environmental stress (Bretherton & Munholland, 2008; Collins & Read, 1994). Sochos and Diniz (2011) explored attachment behaviors/ styles in relation to

sociocultural adaptation on Brazilian immigrants in the United Kingdom. The results indicated that attachment styles moderated the effects of acculturation process on psychological distress. *Secure* and *dismissing* attachment styles moderated the relationship between sociocultural adaptation and psychological distress; *preoccupied* attachment style moderated the effects of previous immigration experience on psychological distress and the effects of duration of stay in the UK. In other words, less securely attached immigrants tended to become more psychologically distressed when they encountered difficulties in understanding the local culture and experienced social isolation. More securely attached immigrants, on the other hand, seemed to be able to protect themselves from psychological distress when they encountered cultural adaptation difficulties. Wei et al. (2004) investigated attachment behaviors across four different ethnic groups in the United States: Caucasian American, African American, Hispanic, and Asian American. The authors aimed to examine whether the latent variables of attachment anxiety and attachment avoidance were represented by indicator variables across the groups. The findings demonstrated that the measurement of adult attachment was equivalent across the four ethnic groups. Particularly, Asian Americans reported both greater levels of attachment anxiety and avoidance than other group counterparts. The authors further suggested that the consideration of cultural variables, such as racial identity, acculturation, and cultural values be further investigated.

Many immigrants came to the United States in search of better lives for themselves and their families. A deep understanding of how adult attachment and acculturation affect their psychological well-being is a worthy endeavor, especially given the fast growing population of Chinese/ Taiwanese immigrants in the United States (Larsen, 2004). Although the effects of

adult attachment and acculturation on psychological well-being have been discussed in the literature, the Asian immigrant population has been minimally studied. Most studies were either limited to student samples or conducted cross-culturally outside the United States (i.e., Holland, Canada, Turkey, etc.) (Sümer & Güngör, 1999; DiTommaso, Brannen, & Burgess, 2005; Wang & Mallinckrodt, 2006; Wang, 2010; Sochos & Diniz, 2011). In addition, among the studies exploring the relationship between acculturation and psychological well-being, most of them focused on negative outcomes, such as psychopathological symptoms and negative mood. Researchers addressed that even though the acculturation process can be a stressful life experience for immigrants, it may also be a learning and growing experience of expanding one's worldviews, cultural competences, and the capability to adapt to the new environment (Berry, 1997, 1998). Therefore, acculturation-related studies should expand its scope to include comprehensive psychological outcomes. Wishing to investigate this issue further, the present study aims to involve Chinese/ Taiwanese immigrants who reside in the United States in exploring the relationships among adult attachment, acculturation, and psychological well-being so as to help gain a better understanding of this population. Additionally, Asian immigrants are a heterogeneous group including those who migrated from China, Taiwan, Japan, Korea, India, Philippines, Vietnam, Indonesia, and etc. The immigration histories of different ethnic groups are quite different, and the treatments by the host culture (a.k.a. the United States) also vary depending upon the historical period and the immigration policy. Thus, studying Asian immigrants as an overall group is unlikely to account for the uniqueness of each ethnic group. There has been a growing recognition regarding the need to have a better understanding of the unique characteristics of this population and its variations (Kim & Omizo, 2010).

In summary, building upon the previous literature, the study will explore the relationship among adult attachment, acculturation, and psychological well-being in Chinese/ Taiwanese immigrants. In the next chapter, an overview of mental health issues in Chinese/ Taiwanese immigrants will be presented, followed by the discussion of attachment theory and related issues. Acculturation theory and relevant models will be addressed. Lastly, the connection among adult attachment, acculturation, and psychological well-being will be explored to inform the purpose of this study.

Chapter II

Literature Review

This chapter will present a summary of theory and studies that examines adult attachment, acculturation and psychological well-being in Chinese/ Taiwanese immigrants. First, a review of the literature on Chinese/ Taiwanese immigrants and their mental health issues will be addressed. A discussion of attachment theory, cross-cultural considerations, and the examination of the contribution of adult attachment on psychological well-being in different ethnic groups will then be presented. Next, a summary of acculturation theory and relevant models will be examined. Furthermore, empirical studies examining the connection among adult attachment, acculturation and psychological well-being will be discussed. Lastly, the purpose of the study and the hypotheses will be addressed.

Chinese/ Taiwanese immigrants and Psychological Well-Being

Chinese/ Taiwanese immigrants

Before examining this issue, the term of immigrants should be defined. According to U.S. Citizenship and Immigration Services (USCIS), the term of immigrants refers to aliens who have been granted the right by the USCIS to reside permanently in the United States and to work without restrictions in the United States, also known as Lawful Permanent Residents (LPR). The U.S. total population is generally divided into two categories, *native* and *born overseas*. *Native* refers to individuals born in the United States or a U.S. island area (e.g., Puerto Rico), or born aboard of a U.S. parent. *Born overseas* refers to individuals who are not U.S. citizens at birth, which includes naturalized U.S. citizens, lawful permanent residents or green card recipients,

temporary migrants (e.g., international students), and those illegally present in the United States (U.S. Census Bureau, 2010). Based on the reason of feasibility and accessibility, this study will only include naturalized U.S. citizens and lawful permanent residents as the defined immigrant population. Over the past few decades, especially since the 1960s, a new massive wave of immigrants from Asia has transformed the American ethnic mosaic (Vega & Rumbaut, 1991). Asian-born immigrants in the United States accounted for just five percent of immigrant populations in the United States in 1960, but by 2007, the proportion increased to nearly 40 percent (U.S. Census Bureau, 2010). Today, the Asian immigrant population is the second-largest immigrant population in the United States (40.3%), following the Latino immigrant population (40.7%). Among the Asian subgroups, the Chinese/ Taiwanese population is the largest ethnic group of Asian immigrants, accounting for approximately 9% of total immigrant populations (Vega & Rumbaut, 2001, p. 369). Historically, the earliest Asian-origin immigrants were Chinese who began immigrating to California in the 1850s when California's Gold Rush began to burgeon. Later, the Chinese Exclusion Act (1882), the first significant restriction of free immigration in the U.S. history, rode the anti-Chinese fervor and further excluded Chinese laborers from the country under penalty of imprisonment and deportation. Such restriction persisted until the enactment of the Immigration Act (1924). The restriction policy regarding Chinese immigrants began to loosen during the period of two World Wars. In 1965, the Immigration and Naturalization Act started to allow more skilled workers and their family members to enter the United States and eliminated the old quota system that gave preference to Europeans. As a result, the Chinese American community has been transformed by a new phase of immigration wave and its population in the U.S. almost doubled during the past few decades.

With the new surge of growth, the new groups of Chinese immigrants did not merely come from the rural provinces of China as the immigrants in the 1800s and early 1900s had. Instead, many of them came from urban Hong Kong and Taiwan, which has shaped a new vision of the immigrants (Library of Congress, 2015).

Mental Health issues among Chinese/ Taiwanese immigrants

The term *mental health* was initially intended to reflect the status of psychological well-being and resilience (Vega & Rumbaut, 1991, p. 5). *Psychological well-being* is a multi-dimensional construct which refers to optimal functioning and experiences and is comprised of a variety of affective (e.g., happiness) and cognitive dimensions (e.g., positive evaluation of one's life) (Lent, 2004). Mirowsky and Ross (1989) stated that psychological well-being and psychological distress are opposite poles on a single continuum. High levels of psychological well-being predict low levels of psychological distress, and high levels of psychological distress predict low levels of psychological well-being. Early research on mental health issues was mainly based on the disease model (i.e., mental disorders, psychopathology, etc.) and focused exclusively on normative samples (i.e., European/ Caucasian Americans) (Vega & Rumbaut, 1991). More recently, with the burgeoning awareness of social justice and multicultural sensitivity, researchers have paid more attention on mental health issues on ethnic minority/ people of color. Research findings showed that the mechanisms leading to psychological well-being differed cross-culturally (Chang, 2002). Compared to other ethnic groups, Asian Americans/ Asian immigrants were reported lower levels of mental health problems and lower rates of utilization of mental health services (Vega & Rumbaut, 2001). The myth of “model minority” may help explain the scant attention given to the mental health struggles encountered

by Asian Americans/ Asian immigrants, including the examination of their well-being and distress (Lee, 2003). Some studies indicated that oversea-born Asian Americans, compared to their U.S.-born counterparts, had fewer rates of psychiatric disorders and other mental health problems (Breslau & Chang, 2006). However, other studies showed the opposite, indicating that Asian immigrants, especially those recently residing in the United States, had higher levels of psychosocial maladjustment and psychological distress than those who were U.S. born or resided in the United States for a longer time period (Hwang & Ting, 2008). Previous studies underlined the issue of underutilization of mental health services by Chinese immigrants (Bui & Takeuchi, 1992; Sue & Sue, 1999), and pointed out that Chinese immigrants were likely to present more severe psychological symptoms upon the time they received mental health treatment, compared to the non-immigrant population (Chen et al., 2003). During the past years, researchers have tried to identify potential factors of influencing Chinese immigrants' mental health, such as social support, social economic status (SES), cultural values, adaptation difficulties, and etc., so as to explain the pattern of underutilization of mental health services by Chinese immigrants and to help awaken public attention to mental health issues on this population (Sue & Morishima, 1982; Lee, 2003; Shen & Takeuchi, 2001).

Adult Attachment

Attachment theory

Attachment theory was originally developed by John Bowlby (1969) and subsequently extended by Mary Ainsworth (1978). Bowlby's attachment theory emphasized the importance of parental environment and secure attachment. He claimed that human beings have an evolved, biologically-based predisposition to direct *attachment behaviors* toward individuals who serve as

their primary caregivers (Bowlby, 1969). *Attachment behavior* refers to the efforts to achieve physical or psychological contact with attachment figures (Bowlby, 1969). For example, when seeking comfort for reassurance, infants would direct their behaviors towards the caregiver(s) through approaching, crying, seeking contact and maintaining that contact. Therefore, attaching to caregivers is considered an important foundation for people to develop a sense of emotional security (Bowlby, 1969, 1973). Ainsworth further elaborated the mother-infant bonding and the secure attachment through a series of empirical experiments. Ainsworth and colleagues (1978) did the experiment of the *Strange Situation*, which involved the observations of infant behaviors towards the caregiver before and after the caregiver was gone. Three core hypotheses for the attachment theory were proposed: (1) the *sensitivity* hypothesis, (2) the *competence* hypothesis, and (3) the *secure base* hypothesis. The *sensitivity* hypothesis emphasizes the importance of the mother's ability to sensitively respond to the child's signals (Ainsworth et al., 1978). The *competence* hypothesis contends how early attachment relationships predict later various outcomes, such as social and emotional competence (Ainsworth et al., 1978). In other words, attachment security leads to children's competence to regulate their emotions, to establish satisfactory relationships with others, and to develop cognitive abilities (Van IJzendoorn & Sagi-Schwartz, 2008, p. 882). The *secure base* hypothesis contends that the capacity of caregivers to serve as a secure base is believed to increase infants' survival of the exploration (Ainsworth et al., 1978).

Four different patterns of attachment relationships were later established based on the *Strange Situation* experiment: *secure*, *anxious-ambivalent*, *avoidant* and *disorganized*. The *secure* attachment relationship indicates that infants are able to rely on the caregivers as an

available source of comfort and protection. It was suggested that secure attachment relationships promote infants' exploration of the world and expand their mastery of the environment (Weinfield et al., 2008, p. 79). The *anxious-ambivalent* attachment relationship indicates that infants are distressed upon separation and therefore feeling ambivalent, angry, and hesitant toward the caregivers. Infants with the anxious-ambivalent attachment pattern are preoccupied with the caregivers' availability; they seek contact but resist angrily when it is achieved (Ainsworth et al., 1978). The *avoidant* attachment relationship indicates that infants are unlikely to show affection with the caregivers before being separated from them and are also unlikely to be distressed upon separation while making no efforts to maintain the contact with the caregivers (Ainsworth et al., 1978). The *disorganized* attachment relationship indicates that infants are unable to maintain one coherent attachment pattern in the face of distress. Infants with the disorganized attachment pattern tend to exhibit conflicted feelings and disoriented behaviors toward the caregivers (Ainsworth et al., 1978). Overall, the latter three patterns of attachment relationships fail to provide infants with a secure and comfortable environment to rely on and are considered as insecure attachment relationships. As Weinfield et al. (2008) suggested, the terms, *secure* and *insecure*, do not simply describe the behaviors of infants within attachment relationships. Instead, these two terms capture infants' general perception of the availability of the caregivers if the need for comfort or protection arises and their expectations of the caregiver's responses (Weinfield et al., 2008, p. 79).

The *internal working model* of attachment is another important concept of attachment theory. According to Bowlby (1969), from early attachment relationships, children begin to internalize what to expect from the world and from other people, as well as how they can expect

to be treated by others. These beliefs and expectations, called *internal working models*, enable immediate forecasts of the caregivers' responsiveness and were developed into a general mental representation pattern to construct relationships in their lives (Thompson, 2008, p. 350). Infants with secure attachment relationships grow to see the world as good and responsive; infants with insecure attachment relationships grow to see the world as unpredictable and insensitive. These different internal working models will reflect from their later relationships during adulthood and guide their expectations and behaviors.

Empirical studies on attachment

During the past few decades, attachment-related studies have flourished. Particularly, researchers were curious about attachment relationships between young children and their caregivers (primarily parents) and how such attachment relationships predict the later outcomes. For example, the *Minnesota Parent-Child Project of Middle Class Families* found that securely attached children were more likely to have close friends, be more socially competent, be more accepted by their peers, have more empathy for others, and be able to read emotional cues (Main & Cassidy, 1988). Despite the fact that being securely attached does not guarantee optimal mental health and social adjustment for a child, secure attachment is considered one of the most essential factors for emotional well-being and the development of resiliency (Main & Cassidy, 1988). On the other hand, children with insecure attachment relationships were observed to be less confident, be more reliant on others to have their needs met, and be more at risk for psychosocial malfunctioning, such as somatic complaints, social withdrawal (Lewis et al., 1984), and anxiety disorders (Warren et al., 1997). In addition, children with avoidant attachment relationships exhibited higher levels of social incompetence and were often identified as bullies

by their peers due to their hostile and aggressive mannerisms (Troy & Sroufe, 1987). Studies on conduct problems in early childhood also found that children with avoidant and disorganized attachment relationships were at a greater risk of conduct problems (Greenberg et al., 1993). Overall, attachment theory has prepared us for a thorough understanding of close relationships amongst individuals and how early attachment relationships illuminate the role of adult attachment relationships.

Adult Attachment

Although attachment theory was developed to explain the nature of parent-child relationships, Bowlby constantly emphasized that attachment behaviors are in no way limited to children (Feeney & Collins, 2004, p. 301). Infants have the needs for closeness and attachment, and so do adults. Adult attachment can be conceptualized as any adult-to-adult attachment relationships, such as romantic, marital, peer, and interpersonal relationships. Although every relationship is unique and different, attachment style can be repeatedly activated among different relationships. There has been substantial literature examining how early attachment bonds develop into adult attachment styles (Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987; Levy, Blatt, & Shaver, 1998; Moran & Bento, 1998; Posada et al., 1999; Stanojevic', 2004). These studies generally supported the theoretical assumption that people with secure adult attachment patterns consider their early parental relationships as secure and comfortable; people with insecure adult attachment patterns view their early parental relationships as less secure, more conflicted, controlling and invasive (Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987). In addition, studies also explored how secure attachment relationships led to a variety of good outcomes (Moran & Bento, 1998; Posada et al., 1999). For instance, secure adult

relationships predicted greater levels of relationship satisfaction (Banse, 2004), more adaptive coping strategies (Ognibene & Collins, 1998; Lopez & Gormley, 2002), and better affect regulation (Brennan & Shaver, 1995).

George, Kaplan, and Main (1985) first developed *Adult Attachment Interview (AAI)* to explore adults pertaining to childhood attachment experiences through a semi-structured open interview. Based on the interview results, attachment was categorized into four patterns: *autonomous, dismissing, preoccupied* and *unresolved/ disorganized* (George, Kaplan, & Main, 1985). Hazan and Shaver (1987) then modified into three adult-attachment styles: *secure, anxious* and *avoidant*. These three styles were later revised into four adult attachment styles: *secure, preoccupied, fearful*, and *dismissing* (Bartholomew & Horowitz, 1991). These four attachment styles are based on two dimensions, *model of self* and *model of others*. *Model of self* is someone who sees self as whether he/ she is worthy or not of love and support. *Model of others* is when others are seen as trustworthy or not. Specifically, individuals with *secure* attachment styles tend to have positive images of self and tend to trust others. *Preoccupied* attached individuals tend to have negative images of self and express high levels of interpersonal anxiety, but tend to trust others. *Fearfully* attached individuals tend to have negative images of self and distrust others. *Dismissingly* attached individuals tend to have positive images of self and be self-sufficient, but distrust others (Bartholomew & Horowitz, 1991; Hofstra, Van Oudenhov, & Bunk, 2005). Bartholomew and Horowitz (1998) proposed a *two-dimensional adult attachment model*, which includes *attachment anxiety* and *attachment avoidance*. *Attachment anxiety* is characterized by an excessive need for the approval from others with a fear of interpersonal rejection and abandonment. *Attachment avoidance* refers to a fear of

interpersonal closeness or dependence and suppression of one's attachment needs (Brennan, Clark, & Shaver, 1998). Low levels of both attachment anxiety and avoidance are defined as secure adult attachment, whereas, high levels of one or both dimensions suggest insecure adult attachment. Theoretically, attachment anxiety is likely to be developed in circumstances when the significant other is inconsistent in responding to the adult's emotional needs. Studies showed that individuals with attachment anxiety tended to use hyper-activation affect regulation strategies and have a negative internal working model of the self. They were also likely to exaggerate their emotional reactions to elicit support from others (Bartholomew & Horowitz, 1998). On the other hand, attachment avoidance is likely to be developed in circumstances when the significant other is unresponsive or ignorant of the adult's emotional needs. Studies showed that individuals with attachment avoidance tended to use indifferent affect regulation strategies to cope with psychological distress. Attachment avoidance was found significantly correlated with a higher level of emotional cutoff and distancing (Bartholomew & Horowitz, 1998). Overall, this two-dimensional adult attachment model has been widely applied across different cultures and populations. In the following paragraph, we will examine cross-cultural studies on attachment and explore how culture was incorporated into attachment theory.

Attachment and culture

Attachment theory, originally developed from the Western-perspective, has been applied to various populations across the world. The issue of cross-cultural validity regarding this theory has also been examined during the past few decades (Harwood, 1992). Ainsworth's *Uganda* study in the 1970s was considered the pioneer study of cross-cultural attachment research. Later studies tried to examine cross-cultural differences of attachment theory by comparing different

cultural groups. Within the United States, some researchers compared different racial/ ethnic groups to understand how different groups differed in attachment behaviors/ styles. For instance, Harwood (1992) examined the perception of attachment behaviors between Anglo and Puerto Rican mothers. It was found that Anglo and Puerto Rican mothers reflected different views towards various attachment behaviors in terms of their derived cultural values. Specifically, Anglo mothers tended to place greater stress on personal development and self-control of negative impulses, whereas, Puerto Rican mothers focused more on the aspect of respectfulness and lovingness. Such cultural value difference was also reflected from their different perceptions of children's attachment behaviors. For instance, Lopez, Melendez, and Rice (2000) examined relationships among parental divorce, parent-child bonds and adult attachment on Caucasian American, African American, and Hispanic college students. Results found that parental divorce affected the perceptions of early parental relationships, but not on the current intimate relationships. Participants who experienced parental divorce reported a lower level of parent-child bonds than those who did not experience parental divorce. However, no significant differences across different ethnic groups were found. Wei et al. (2004) examined adult attachment across four ethnic groups: Caucasian, Hispanic, African American, and Asian American college students. Results showed that African Americans and Asian Americans reported greater levels of attachment avoidance than did their Caucasian peers. Asian Americans also reported greater levels of attachment anxiety compared to other ethnic groups. In addition, attachment pattern differences across different groups were found to be associated with culturally-instilled values. Further investigation to assess whether the results revealed a misperception of non-Western population based on the Western-centered attachment perspective

was suggested. Internationally, Takahashi (1990) examined three underlying assumptions of attachment theory, as mentioned above, on Japanese infants in a longitudinal study. Sixty 12-month-old infants were assessed and followed up until they were 42nd months old. Results indicated that Japanese infants demonstrated a higher level of psychological distress when being left alone compared to the Caucasian sample. The author took cultural factors into consideration and interpreted that such distinction came from different parenting norms between Japan and the Western society. Specifically, the parenting norm for Caucasian Americans was to help children learn to be independent and cope with stress, whereas, the parenting norm for Japanese was to protect infants from experiencing stress. Therefore, Japanese infants might experience a higher level of distress upon being left alone than American infants due to the differences of previous experiences with stressful situations. Sümer and Güngör (1999) examined adult attachment styles between the U.S. and Turkish college students. Results showed that there were cultural differences in attachment styles, especially for insecure attachment styles. Specifically, Turkish students appeared to have higher levels of preoccupied attachment styles, and American students showed higher levels of dismissing and fearful attachment styles. DiTommaso, Brannen, and Burgess (2005) investigated the universality of loneliness and attachment in family, romantic, and social relationships by comparing Canadian and Chinese students. Results showed that culture and gender served as important indicators of adult attachment and loneliness. Particularly, Chinese and female students reported higher levels of attachment anxiety and higher levels of loneliness. In contrast, Canadian and male students reported higher levels of attachment avoidance, but lower levels of loneliness. In sum, the results of the above studies demonstrated the evidence of cross-cultural differences in adult attachment.

Cultural universality of attachment theory

There have been disagreements regarding the cultural universality of attachment theory. This disagreement began with Rothbaum et al.'s arguments about the applicability of attachment theory to non-Western populations. Rothbaum et al. (2000) speculated that attachment research was conducted primarily in Western cultures and might not be completely applicable to other cultures. The researchers further pointed out that the theory underscored the importance of cross-cultural validity by showing evidence of cultural variation in comparison to the U.S. and Japanese cultures (Rothbaum et al., 2000). It was suggested that attachment should be incorporated with culture in order to enrich the diversity of the theory (Rothbaum et al., 2000; Chao, 2001). The supporters of Rothbaum et al.'s arguments also stated that the secure base addressed in the secure base hypothesis should not merely be limited within infant-parent relationships (Chao, 2001). For example, people from collectivistic cultures (e.g., people of color, immigrant families) tended to involve multiple caregivers to assist with child-rearing (Howes & Spieker, 2008). For children who grew up with their extended families other than parents, it was not necessary to merely rely on attachment relationships with their parents, nor did it necessarily imply that children would develop insecure attachment relationships. Another empirical study showed that three times as many African American children under the age of eighteen lived with their grandparents as did Caucasian American children. Involving extended family members in childcare can potentially function as a strength that provides an attachment bond for the support of adaptive behaviors (Harrison et al., 1990). Researchers cautioned that the failure to take cultural factors into consideration may lead to the misinterpretation of children's insecure attachment relationships. On the other side of the argument, some other researchers

proposed the view of cultural universality. For instance, Posada and Jacobs (2001) criticized Rothbaum et al.'s arguments for misunderstanding the role of the secure base as a context for socialization. It was suggested that attachment relationships are biological needs of every human being and attachment patterns can be found universally across cultures. The empirical evidence of cross-cultural validity appeared to be warranted and similar patterns of attachment behavior were observed in most cross-cultural studies (van IJzendoorn & Sagi-Schwartz, 2008). Overall, although the disagreement over the cultural universality of attachment theory remains an unresolved issue, it has been empirically demonstrated (Patel, 2008; Wang & Song, 2010; Sochos & Diniz, 2011) that the concept of attachment relationships is universal while attachment beliefs and behaviors may vary from culture to culture. More specifically, the desire for having secure attachment relationships is considered universal; attachment behaviors individuals present to promote secure attachment may vary across cultures.

Adult attachment in the Chinese culture context

Wang and Scalise (2010) examined the applicability of the Western-based attachment perspective and explored adult attachment on Taiwanese students. It was found that Taiwanese individuals perceived ideal and healthy attachment associated with their own cultural values that differed from Western individuals. Specifically, Taiwanese students reflected their ideal attachment as low levels of anxiety and avoidance, which were consistent with Western sample findings. However, the actual levels of anxiety and avoidance Taiwanese students reflected were significantly higher than their ideal ones. The authors explained that some behaviors and beliefs valued by Taiwanese students regarding healthy attachment could be misperceived from the Western point of view. For example, living with parents may be valued as healthy attachment by

Taiwanese students but may be devalued by the Western population. Along the lines of the above study, Wang and Song (2010) developed a culturally-specific attachment model to reconceptualize attachment construct in the Chinese cultural context. This model takes several cultural constructs of Chinese ways of interpersonal relatedness into consideration and consists of two interactional dimensions, *perception of relational status* and *fulfillment of relational obligations* (Wang & Song, 2010). *Perception of relational status* indicates an understanding of an individual's position in various social relationships and the importance of fulfilling one's obligation in the relationship role. For example, when dealing with relational conflicts, individuals who highly value perceptions of relational status are more likely to tolerate relational discords and accept their obligations in the relationship role (Wang, Lin, & Song, 2011). In addition, *fulfillment of relational obligations* indicates the influential role of significant others' feedback which reflects Chinese cultural values, such as inter-dependence and filial piety. This dimension is centered on the individual's felt sense of responsibility and connectedness to the social group. Individuals who highly value the fulfillment of relational obligations are more likely to fulfill their roles in the relationship so as to help them feel secure and develop a positive self-concept (Wang, Lin, & Song, 2011). Wang (2010) further suggested that the value of fulfillment of relational obligations is essential for Chinese adults to develop secure attachment relationships because such relational obligations towards others are rooted in Chinese cultural values and are prevalently practiced in the Chinese society.

According to this model, individuals with healthy attachment styles are those who have clear perceptions of their relational roles/ statuses that are most likely in line with social expectations, as well as a clear sense of fulfillment from the obligations related to their relational roles (Wang

& Song, 2010, p. 29). One of the influential cultural factors proposed in the Chinese attachment model is *interdependent self-construal*. *Self-construal* is defined as a trait-like disposition involving beliefs, feelings, attitudes, and actions regarding one's relationship to others, especially the degree of separation or connectedness between the self and others (Wang & Song, 2010). Two types of self-construal, *independent* and *inter-dependent*, were proposed by Markus and Kitayama (1991). In Western cultures which value individualism, uniqueness, and distinction, individuals tend to develop a stronger sense of independent self-construal. They tend to emphasize identifiable inner attributes, abilities, and characteristics while pursuing goals of individual self-interest and being direct in self-expression. Within interpersonal relationships, people with an independent self-construal tend to consider the self and others as separate units (Markus & Kitayama, 1991). In contrast, in many Asian cultures which value collectivism, connectedness and relatedness, individuals tend to develop a stronger sense of inter-dependent self-construal in which the self is defined as inseparable from one's relational context. Individuals with inter-dependent self-construal value harmonious interpersonal relationships and meet cultural and social norms derived by the group. Another cultural factor mentioned in the model is *filial piety*. Filial piety is a cultural-bond value that emphasizes an individual's loyalty and obligation to the family, especially with regard to the respect and care for elders. Originating from the Confucian philosophy, children are expected to show respect and conform to their parents no matter how old they are. It is expected that adult children show filial piety to their parents/ caregivers by taking care, living with and financially supporting them. Overall, the practices of filial piety influence parent-child relationships and many behaviors observed from Chinese adults in their everyday lives (Wang & Song, 2010, pp. 22).

The core tenet of Western-based attachment theory is *relatedness of self and others*, which is believed to be closely associated with Chinese cultural values. One of the assumptions attachment theory made is that individuals with insecure attachment tend to develop a negative internal working model of self and be more hyper-vigilant and worried about interpersonal relationships (Wang & Song, 2010). However, this conclusion may not be observed in the Chinese culture. Fitting in the relational role and striving for maintaining the relationship are considered as individuals' obligations in the Chinese culture. The value of filial piety further highlights the expected roles among family members and the obligation of obeying authority figures. Research found that Chinese individuals tended to strive for belonging to the group and worry about not fitting in the cultural norm compared to the Western population (Wang & Mallinckrodt, 2006). Therefore, the characteristics of the Western-based insecure self, despite much empirical support from European American samples, might not accurately reflect attachment manifestations in the Chinese population. Based on this conceptual model, Wang et al. (2010) developed a 22-item culturally-adjusted attachment instrument, the *Chinese Relatedness Scale (CRS)*, aiming to examine emotional, cognitive, behavioral, and interpersonal experiences in the Chinese culture. Two subscales, *obligation fulfillment security (OFS)* and *status-based relatedness (SBR)*, are identified in the CRS. Wang, Lin, and Song (2011) explored psychosocial functioning in Taiwanese/ Chinese adults by using both the Western culture-based attachment scale (*The Experiences in Close Relationships Scale, ECRS*) and the Chinese culture-based attachment (*The Chinese Relatedness Scale, CRS*). It was suggested that the concept of the Chinese culture-based attachment would help our understanding of Taiwanese/ Chinese adults' self-perceptions regarding attachment relationships. Results indicated that individuals who

endorsed a higher level of obligation fulfillment security reported a higher level of social self-efficacy; those with a greater sense of status-based relatedness reported a stronger level of self-esteem. In summary, the Western-based attachment theory appears to be a valuable framework for the global concept of attachment; the culturally-adjusted attachment model may further provide us with a deeper understanding of cross-cultural attachment. With regard to the *Chinese Relatedness Scale (CRS)*, further investigation is needed to continue to assess the validity of the scale so as to apply to the Chinese population appropriately.

Acculturation

Basic tenets of acculturation

The term, *acculturation*, originally proposed by Redfield, Linton and Herskovits (1936), refers to the phenomena that occur when individuals of different cultures come into continuous first-hand contact and subsequent changes in the original cultural patterns of either or both groups (Redfield, Linton & Herskovits, 1936, p.149). Williams and Berry (1991) later conceptualized acculturation as the process of behavioral and cultural change resulting from two different cultures coming into close contact with one another, including the adoption of beliefs, customs, identities, and values. Although the acculturation process is purported to occur on both group (social structure, cultural) and individual levels, psychologists generally focused on the individual aspect of this dynamic process (Graves, 1967; Szapocznik et al., 1978). Graves (1967) was the first to propose the idea of an individual level of acculturation, a process by which an individual undergoes cultural changes as a result of continuous exposure to a second culture. In recent years, acculturation has become a leading topic in immigrant-related research and has been found to have a significant psychological impact on Asian Americans and Asian

immigrants (Shen & Takeuchi, 2001; Miller, 2007). Some studies indicated a positive relationship between acculturation and mental health. From this perspective, acculturation was regarded as evidence that the individual has successfully adjusted to the new environment and demonstrated the competence in psychological and social functioning (Shen & Takeuchi, 2001). Other studies indicated a negative relationship between acculturation and mental health, in which acculturation was viewed as a risk factor that is detrimental to mental health (Shen & Takeuchi, 2001). Some other studies even suggested a curvilinear relationship between acculturation and mental health, which indicated that individuals halfway through the acculturation process were found most susceptible to psychological distress (Shen & Takeuchi, 2001, p. 389). The above differing results not only addressed different influences of acculturation on mental health, but also reflected the complexity of acculturation process.

Two acculturation models

The acculturation process has been broadly discussed within two issues: dimensions and domains. In terms of the dimension, two dimensions were proposed based on the perspective of adopting the host culture and retaining the culture of origin, *unidimensional* and *bidimensional* models of acculturation (Ryder et al., 2000; Chang, Tracey, & Moore, 2005; Miller, 2007). The *unidimensional* model of acculturation suggests that individuals, who migrate from a different culture, are either likely to preserve their cultural heritage or adopt the mainstream culture. In other words, this model assumes that individuals can only adhere to one culture at the same time and predicts that individuals will ultimately fully assimilate to the mainstream culture while discarding their culture of origin (Chang, Tracey, & Moore, 2005). On the other hand, the *bidimensional* model of acculturation asserts that retaining the culture of origin and adopting the

mainstream culture are independent (Berry, 1992; Ryder et al., 2000). In other words, individuals are assumed to be capable of adopting the new culture while still maintaining their culture of origin. As noted above, the main difference between the unidimensional and bidimensional models of acculturation is the different view of the relationship between the culture of origin and the mainstream culture (Ryder et al., 2000). The unidimensional model suggests a negative relationship between two cultures; the bidimensional model asserts that the relationship between two cultures can be independent. Although both of these models have been empirically supported, the unidimensional model has been criticized for its assumption that individuals cannot retain the behaviors and values of their culture of origin as they incorporate the norms of the mainstream culture (Padilla, 1980; Ryder et al., 2000). Therefore, the bidimensional model has been more widely accepted and acknowledged due to its assumption of the flexibility of mental state (Miller, 2007). Based on the bidimensional model, four acculturation stages are identified: *assimilation*, *separation*, *integration*, and *marginalization* (Berry, 1997). *Assimilation* is characterized by the identification with the dominant culture and the rejection of the culture of origin. *Separation* is characterized by the rejection of the dominant culture and the retention of the culture of origin. *Integration* is characterized by the identification with both cultures. *Marginalization* is characterized by the rejection of the culture of origin as well as the dominant culture. Among these four acculturation strategies, integration is considered the highest level of acculturation.

There have been some empirical studies on examining different acculturation models. For example, Tsai et al. (2000) assessed unidimensional and bidimensional models of acculturation on Chinese American college student sample. It was found that the unidimensional model of

acculturation was more able to be representative of oversea-born Chinese American students while the bidimensional model of acculturation tended to be representative of U.S.-born Chinese American students. Lieber et al. (2001) found that the bidimensional model of acculturation accounted for a greater variance in life satisfaction than the unidimensional model on Chinese immigrant sample. Ryder et al. (2000) also found the bidimensional model of acculturation to be more efficacious than the unidimensional model in accounting for a greater variance in numerous measures of psychological and social functioning on Chinese population. Miller (2007) further tested both unidimensional and bidimensional models with confirmatory factor analysis (CFA) on Asian Americans and the result showed that the bidimensional model of acculturation provided a better fit to the data than the unidimensional model.

Two domains of acculturation

In terms of the domains of acculturation, early studies focused on a single domain of life to measure acculturation. Szapocznik et al. (1978) initially proposed the idea of multiple-aspects of acculturation (i.e., acculturation occurs on at least two broad behavioral and values domains). Kim and Abreu (2001) further identified two domains of acculturation, *behavioral aspect* and *psychological aspect* (Kim & Abreu, 2001; Chang, Tracey, & Moore, 2005). *Behavioral acculturation* refers to engaging in behaviors (e.g., language, food preference, etc.) that represent the cultural practices or traditions of an individual's host and heritage cultures; *psychological acculturation* refers to an individual's psychological/ emotional endorsement of cultural values and heritage (Kim, Atkinson, & Yang, 1999). For example, an Asian immigrant's food preference from being Asian towards Westernized or one's favorable attitudes towards seeking mental health help -from being resistant to being accepting- can be viewed as the aspect of

behavioral acculturation. An Asian immigrant's cultural value moving from being collectivistic towards individualistic can be viewed as the aspect of psychological acculturation.

To date, a number of existing measurements have been developed to assess acculturation on different ethnic groups. However, many of them merely focused merely on the behavioral aspect of acculturation and failed to incorporate the psychological aspect of acculturation (Kim, Atkinson, & Yang, 1999). Kim (1995) stressed the importance of cultural values and emphasized that adherence to ancestral values and the values of the dominant culture are essential components of an individual's acculturation. He then developed the *Asian Values Scales* to account for this. Szapocznik et al. (1978) suggested that the behavioral acculturation process occurs more rapidly than the value acculturation process. Sodowsky, Kwan and Pannu (1995) found that Asian immigrants might quickly adopt the behaviors of the U.S. culture but tended to maintain their Asian cultural values indefinitely. Tsai-Chae and Nagata (2008) pointed out that for immigrants whose cultures of origin are different from the dominant culture, their values, such as collective identity, emotional inter-dependence, in-group solidarity, harmony, duties, and obligations, usually stand in sharp contrast to individualistic Western cultural values which emphasize autonomy, emotional independence, and the primacy of personal goals over group goals. Consequently, these immigrants may face greater challenges in negotiating conflicting demands in the process of acculturation compared with the immigrants from cultures of origin with more cultural similarities to the dominant culture. Therefore, to gain a comprehensive understanding of the acculturation process, it is essential to consider both behavioral and psychological aspects of acculturation and explore how different aspects of acculturation influence their psychological well-being differently.

The comprehensive model of acculturation process

Acculturation is a complex process that involves multiple changes and takes place on both individual and group levels. As discussed in the previous literature, many factors, such as gender, ethnicity, cultural value differences, and generation of immigration, are likely to influence the development of acculturation. The comprehensive model of acculturation process, developed by Berry et al. (1987), has been extensively used as a conceptual framework for acculturation studies. According to Berry et al. (1987), there are five factors of influencing the acculturation process: (1) *the nature of the larger society*, (2) *the type of acculturation group*, (3) *modes of acculturation*, (4) *demographic and social characteristics of the individual*, and (5) *psychological characteristics of the individual* (Berry et al., 1987). The first factor, *the nature of the larger society*, refers to the attitudes of people in the dominant culture of the host society. For example, studies indicated that a culturally diverse society is more likely to have a higher level of tolerance for immigrants than a mono-cultural society (Berry et al., 1987). The second factor, *the type of acculturation group*, refers to five distinct acculturation groups: immigrants, refugees, native people, ethnic groups, and sojourners. The third factor, *modes of acculturation*, includes integration, assimilation, separation, and marginalization as addressed earlier. The fourth factor, *demographic and social characteristics of the individual*, refers to the individual differences, such as gender, age, education level, and etc. that may influence an individual's acculturation process. The fifth factor, *psychological characteristics*, refers to an individual's mental state, such as assertiveness, likeability, sociability, and ego control. Differences in attitude and risk taking and level of anxiety tolerance may also lead to differences in the acculturation process (Padilla & Perez, 2003, p. 41).

Adult attachment, acculturation and psychological well-being

From the perspective of attachment theory, the acculturation process that involves the exposure to unfamiliar or completely exotic cultural environments could be conceptualized as a parallel process as infants learning to explore new environments. As infants who are securely attached to their caregivers tend to foster a great capacity for exploring the environment, adults who experience a consistent secure base from their attachment figures tend to develop an internalized sense of security that enhances their capacity to explore the environment without actual presence of the attachment figures (Wang & Mallinckrodt, 2006, p. 424). Wang and Mallinckrodt (2006) indicated that securely attached individuals were more capable of adapting to the new environment and had a higher level of psychological well-being during the acculturation process than insecurely attached individuals. This indication was consistent with the concept of secure base and the internal working model of attachment theory. For immigrants, moving to the United States symbolizes the temporary or permanent separation from the home culture that can be frightening. Researchers contended that immigrants with secure attachment are more able to access comforting mental representations of attachment figures and to develop a sense of security which might help them cope with acculturative stress. On the other hand, immigrants with insecure attachment are likely to have a negative working model of others that might keep them from adapting to the new environment and seeking help when encountering acculturation difficulties (Wang & Mallinckrodt, 2006).

Studies about adult attachment and psychological well-being among immigrants have been well documented (Simpson, Rholes, & Philips, 1996; Pietromonaco & Feldman, 1997; Lopez & Brennan, 2000; Chen, Mallinckrodt, & Mobley, 2003; Wei, et al., 2004; Sochos & Diniz, 2011).

The results of the findings showed that attachment security was positively associated with perceived social support from people in both cultures of origin and the dominant culture, while was negatively associated with stressful life events, psychological distress, and the effects of racism (Chen, Mallinckrodt & Mobley, 2003). On the other hand, individuals with insecure attachment were more likely to report a greater level of psychological distress and hostility (Simpson, Rholes & Philips, 1996), a greater level of affective intensity (Pietromonaco & Feldman, 1997), a greater level of depressive symptoms (Wei et al., 2004), and a higher level of emotional distress (Collins, 1996). It should be noted that most studies primarily targeted the populations from individualistic cultures (e.g., the U.S., Canada, Germany, etc.), and such findings should not be simply generalized to other populations from collectivistic cultures (e.g., Mexico, Japan, China, Taiwan, etc.). Some other studies explored adult attachment styles (i.e., *secure, preoccupied, fearful, dismissing*) and acculturation stages (i.e., *integration, assimilation, separation, marginalization*) on different ethnic groups of immigrants, including Eastern Asian, Indian, Hispanic, Dominican, and Haitian immigrants, so as to compare cross-cultural differences. Results showed that *secure* attachment style was associated with *integration* type of acculturation; *preoccupied* attachment style was related to *assimilation* type of acculturation; *fearful* attachment style significantly predicted *separation* type of acculturation; and *dismissing* attachment style significantly predicted *marginalization* type of acculturation (Yang, Tian, & Van Oudenhoven, 2010; Van Oudenhoven & Hofstra, 2006). Other findings also indicated that high levels of attachment anxiety and/or attachment avoidance led to low levels of acculturation and high levels of psychological distress on Asian immigrants (Wang & Mallinckrodt, 2006; Patel, 2008). Sochos and Diniz (2011) explored attachment, sociocultural adaptation, and

psychological distress on Brazilian immigrants in the United Kingdom. Results showed that attachment style moderated the effect of sociocultural adaptation on psychological distress. Specifically, dismissingly attached immigrants were less likely to live with a spouse or partner; fearful attached immigrants tended to socially connect more with people who spoke the same native language. It was suggested that less secure immigrants tended to become more psychologically distressed when they encountered difficulties in understanding the local culture and experienced social isolation.

There has been some literature about adult attachment, acculturation and psychological well-being on Asian Americans/ Asian immigrants (Wang & Mallinckrodt, 2006; Ying, Lee & Tsai, 2007; Patel, 2008). Wang and Mallinckrodt (2006) explored acculturation, attachment, and psychosocial adjustment on Chinese/ Taiwanese international students based on Berry et al. (1987)'s process model of acculturation. Results showed that acculturation to the U.S. culture was considered as a significant predictor for Chinese international students' psychosocial adjustment. The level of attachment anxiety was significantly associated with acculturation to the U.S. culture. Specifically, high levels of attachment anxiety and attachment avoidance were positively associated with psychosocial adjustment difficulties on Chinese international students. Ying, Lee and Tsai (2007) explored acculturation level, attachment style, and depressive symptoms among Chinese American college students. It was found that parental attachment was negatively associated with depressive symptoms. The level of parental attachment was positively significantly associated with acculturation level. Patel (2008) investigated potential factors of adult attachment, acculturation and racial identity on psychological well-being and negative mood among South Asian American college students in the United States. Results indicated that

adult attachment, acculturation and racial identity accounted for the variance in self-esteem and negative mood on South Asian American college students. The author emphasized the importance of taking cultural factors into consideration so as to gain a thorough understanding of such populations. Additionally, in Wei et al (2004)'s study on exploring adult attachment across four ethnic groups (Caucasian American, African American, Hispanic, and Asian American) in the United States, the findings demonstrated that the construct of adult attachment was equivalent for college students across different ethnic groups. Among the four groups did both Asian Americans and Hispanic Americans report greater levels of attachment anxiety than their Caucasian peers, while Asian Americans and African Americans reported greater levels of attachment avoidance than their Caucasian peers. High levels of attachment anxiety and attachment avoidance were found to predict higher levels of negative mood. The authors further speculated that other cultural factors, such as racial identity and acculturation, might account for such differences in attachment configuration. For instance, individuals who were more acculturated towards American culture might exhibit attachment configurations that were found normal to the United States, while those who were more acculturated towards Asian culture might exhibit different attachment configurations. Overall, the findings from the above studies suggested that sociocultural variables might serve as important factors of influencing the relationship between adult attachment and psychological well-being. However, the complexity of such relationships has not been thoroughly examined. Further investigation is needed so as to help understand how adult attachment and other cultural factors together inform psychological well-being on immigrants.

Summary and Hypotheses of the current study

Building upon the past literature, the purpose of this study is to explore adult attachment, acculturation and psychological well-being in Chinese/ Taiwanese immigrants in the United States so as to gain a better understanding of how adult attachment predicts psychological well-being and how acculturation influences the relationship between adult attachment and psychological well-being in this population. Research questions proposed for this study include the following:

1. How does adult attachment predict psychological well-being in Chinese/ Taiwanese immigrants?
2. What role does acculturation play between adult attachment and psychological well-being?
3. How do different domains of acculturation influence the relationship between adult attachment and psychological well-being differently?

More specifically, Adult Attachment was measured by the *Experiences in Close Relationship Scale-Short Form (ECR-S)* (Wei, et al., 2007), which divides the concept of Adult Attachment into two dimensions: Attachment Anxiety and Attachment Avoidance. Additionally, based on the bidimensional model of acculturation (Berry, 1992) and the two domains of acculturation which include Behavioral acculturation and Psychological acculturation (Szapocznik, 1978), the modified *Acculturation Rating Scale for Mexican Americans- II (ARSMA-II)* (Cuellar, Arnold & Maldonado, 1995) was used to assess Behavioral aspect of acculturation in both American and Chinese cultures. The *Asian Values Scale-Revised (AVS-R)* (Kim & Hong, 2004) was used to assess the endorsement of Asian cultural values. The Well-being subscale in the *Mental Health Inventory (MHI)* (Veit & Ware, 1983) was used to measure

individuals' Psychological Well-being. The hypotheses of this study are formulated as follows:

Hypothesis 1: Attachment Anxiety is significantly negatively correlated with Psychological Well-being

1a: Higher levels of Attachment Anxiety predict lower levels of Psychological Well-being

1b: Lower levels of Attachment Anxiety predict higher levels of Psychological Well-being

Hypothesis 2: Attachment Avoidance is significantly negatively correlated with Psychological Well-being

2a: Higher levels of Attachment Avoidance predict lower levels of Psychological Well-being

2b: Lower levels of Attachment Avoidance predict higher levels of Psychological Well-being

Hypothesis 3: Acculturation towards Chinese orientation moderates the relationship between Attachment Anxiety and Psychological Well-being

3a: Higher levels of Acculturation towards Chinese orientation predict a weaker negative relationship between Attachment Anxiety and Psychological Well-being. In other words, Acculturation towards Chinese orientation has a buffering effect between Attachment Anxiety and Psychological Well-being

3b: Lower levels of Acculturation towards Chinese orientation predict a stronger negative relationship between Attachment Anxiety and Psychological Well-being

Hypothesis 4: Acculturation towards Chinese orientation moderates the relationship between Attachment Avoidance and Psychological Well-being

4a: Higher levels of Acculturation towards Chinese orientation predict a weaker negative relationship between Attachment Avoidance and Psychological Well-being. In other words, Acculturation towards Chinese orientation has a buffering effect between Attachment Avoidance and Psychological Well-being

4b: Lower levels of Acculturation towards Chinese orientation predict a stronger negative relationship between Attachment Avoidance and Psychological Well-being

Hypothesis 5: Acculturation towards American orientation moderates the relationship between Attachment Anxiety and Psychological Well-being

5a: Higher levels of Acculturation towards American orientation predict a weaker negative relationship between Attachment Anxiety and Psychological Well-being. In other words, Acculturation towards American orientation has a buffering effect between Attachment Anxiety and Psychological Well-being

5b: Lower levels of Acculturation towards American orientation predict a stronger negative relationship between Attachment Anxiety and Psychological Well-being

Hypothesis 6: Acculturation towards American orientation moderates the relationship between Attachment Avoidance and Psychological Well-being

6a: Higher levels of Acculturation towards American orientation predict a weaker negative relationship between Attachment Avoidance and Psychological Well-

being. In other words, Acculturation towards American orientation has a buffering effect between Attachment Avoidance and Psychological Well-being

6b: Lower levels of Acculturation towards American orientation predict a stronger negative relationship between Attachment Avoidance and Psychological Well-being

Hypothesis 7: Asian cultural values moderates the relationship between Attachment Anxiety and Psychological Well-being

7a: Higher levels of Asian cultural values predict a weaker negative relationship between Attachment Anxiety and Psychological Well-being. In other words, Asian cultural values has a buffering effect between Attachment Anxiety and Psychological Well-being

7b: Lower levels of Asian cultural values predict a stronger negative relationship between Attachment Anxiety and Psychological Well-being

Hypothesis 8: Asian cultural values moderates the relationship between Attachment Avoidance and Psychological Well-being

8a: Higher levels of Asian cultural values predict a weaker negative relationship between Attachment Avoidance and Psychological Well-being. In other words, Asian cultural values has a buffering effect between Attachment Avoidance and Psychological Well-being

8b: Lower levels of Asian cultural values predict a stronger negative relationship between Attachment Avoidance and Psychological Well-being

Chapter III

Method

Participants

Participants were recruited from various Chinese/ Taiwanese immigrant organizations and associations through snowball sampling technique. The Participants of this study included individuals from age 18 to 65 who identify themselves as Chinese/ Taiwanese immigrants who were born overseas (including those who are currently holding green card residential status and those who have become naturalized U.S. citizens) residing in the United States. A total of 261 participants started the survey; the completion rate was 82%. The sample consisted of 215 participants of Chinese/ Taiwanese immigrants. Table 1 summarizes the descriptive statistics for demographic information and background characteristics of the sample. Specifically, the mean age of the participants was 36 ($SD = 8.22$). There were more females (68.4%) than males (31.6%) in this sample. More than half of the participants have lived in the United States for 11 years or longer (51.6%), with 34.4% for 6-10 years, with 7% for 1-5 years, and with .9% for less than a year. About similar percentage of the participants were permanent residents (45.1%) and U.S. citizens (47%). In terms of the primary language usage at home, 73.5% of the participants spoke Mandarin Chinese primarily at home, followed by 10.2% in English, 8.4% in Cantonese, and 5.6% in Taiwanese. In addition, a total of 75.3% of the sample were married, 14.4% were single (never married), 9.3% were in relationship, and fewer than 1% were divorced. Nearly half of the participants reported obtaining a master's degree (47%), followed by 26.5% with a Ph.D. degree, 21.4% with a bachelor's degree, and 3.7% with a high school degree.

Table 1

Demographic and Background characteristics of the sample (N = 215)

Characteristic	Frequency (<i>M</i>)	Percentage (<i>S.D.</i>)
Age	(35.95)	(8.22)
Gender		
Female	147	68.4
Male	68	31.6
Length of residence in the US		
Less than 1 year	2	.9
1-5 years	15	7
6-10 years	74	34.4
Above 11 years	111	51.6
Immigration status		
Permanent Residency	97	45.1
U.S citizenship	101	47
Other	17	7.9
Primary language usage at home		
English	22	10.2
Mandarin Chinese	158	73.5
Taiwanese	12	5.6
Cantonese	18	8.4
Other	5	2.3
Relationship status		
Single (never married)	31	14.4
In relationship	20	9.3
Married	162	75.3
Divorced	2	.9
Education level		
High school	8	3.7
College	46	21.4
Master	101	47
Ph.D.	60	26.5

Procedure

Participants were recruited through *snowball sampling* techniques, also called *chain referral sampling*, which means recruiting future subjects from among their acquaintances (Biernacki & Waldorf, 1981). Specifically, eligible participants were recruited from various Chinese/Taiwanese immigrant organizations and associations through word of mouth, including Taiwanese American Association of New York, Chinese American Association of New York, Taiwanese American Federation of Northern California, The Taiwan Merchants Association of New York, Chinese Association of America, Boston branch, Monte Jade New England Science & Technology Association, and etc. Internet survey research was used to collect data. Researchers suggested that web-based surveys are useful tools for increasing racial and ethnic minority individuals' participation in social science research (Kelley et al., 2003). Following the approval of this study from the Institutional Review Board, the researcher compiled survey packages consisting of an informed consent form, the *Demographic Questionnaire*, the *Experiences in Close Relationships-Short form (ECR-S)* (Wei, et al., 2007), the modified *Acculturation Rating Scale for Mexican Americans-II (ARSMA-II)* (Cuellar, Arnold & Maldonado, 1995), the *Asian Values Scale-Revised (AVS-R)* (Kim & Hong, 2004), and the well-being subscale in the *Mental Health Inventory (MHI)* (Veit & Ware, 1983). All surveys were administered in English. E-mail solicitations were forwarded to various associations/organizations (as listed above) explaining the nature and purpose of the study in English. Informed consent was given at the onset of each survey and participants were asked to read the informed consent form. Participants were then instructed to proceed with the study if they understood the guidelines and chose to participate in this study. All responses to survey

questions were anonymous and the participation was voluntary. It was estimated to take 30 minutes to complete the online survey. No compensation was given for participating in this study. Collected data was saved in a secure server for the purpose of confidentiality, and could only be accessed by the researcher.

Measures

Demographic Questionnaire. Information regarding age, gender, length of residence in the United States, immigration status, primary language usage at home, marital status, and education level was collected by means of demographic questionnaire (see Appendix A).

Adult Attachment. Adult attachment was measured by the *Experiences in Close Relationship Scale-Short Form (ECR-S)* (Wei, et al., 2007) (see Appendix B). This scale was the short version of the original *Experiences in Close Relationship Scale (ECR)*, which was developed to measure adult attachment relationships based on the two-dimensional model (Brennan, Clark & Shaver, 1998). The *ECR-S* contains 12 items on a 7-point Likert scale. Participants were asked to mark the extent to which each item reflected their normal experiences in romantic and close relationships. Possible responses ranged from 1 (*disagree strongly*) to 7 (*agree strongly*). The scale is divided into two subscales: *attachment anxiety* and *attachment avoidance*. The attachment anxiety subscale, consisting of 6 items, aims to assess the extent to which one is afraid of abandonment. Sample items in the anxiety subscale include “I need a lot of reassurance that I am loved by my partner” and “I worry that romantic partners won’t care about me as much as I care about them.” Among 6 items, 1 of them is reverse coded. A higher score indicates a higher level of attachment anxiety. The avoidance subscale consists of 6 items and intends to assess the extent to which one is comfortable with needing others in

romantic/close relationships. Sample items include “I want to get close to my partner, but I keep pulling back” and “I try to avoid getting too close to my partner.” Among 6 items, 3 of them are reverse coded. A higher score indicates a higher level of attachment avoidance. In terms of reliability, the internal consistency of the *ECR-S* was reported to be adequate. The coefficient alphas ranged from .77 to .86 for the anxiety subscale and from .78 to .88 for the avoidance subscale across the studies in college student samples. The test-retest reliability was .82 for the anxiety subscale and .86 for avoidance subscale (Wei et al., 2007). Additionally, Patel (2008) applied the *ECR-S* on South Asian American college students to measure their adult attachment. In this sample, coefficient alphas were .71 for the anxiety subscale and .66 for the avoidance subscale, respectively.

Behavioral Acculturation. Behavioral acculturation was measured by the modified *Acculturation Rating Scale for Mexican Americans-II (ARSMA-II)* (Cuellar, Arnold & Maldonado, 1995), a multidimensional instrument that measures individuals’ orientation towards one’s native and American culture independently (see Appendix C). The *ARSMA-II* was originally developed to measure an individual’s cultural orientation towards both Mexican culture and Anglo culture in the domains of language, ethnic identity, and social interaction. This scale has been widely used in different ethnic groups and has also been modified and validated in Asian-American population (Lee, Yoon & Liu-Tom, 2006). The *ARSMA-II* contains two subscales: Anglo orientation (AOS) and Mexican orientation (MOS). The AOS and the MOS consist of 13 items and 17 items, respectively. Each item is scored on a 5-point Likert scale from 1 (*not at all*) to 5 (*extremely often or almost always*). A higher score in each subscale indicates a stronger level of orientation towards the named culture. In this study, the *ARSMA-II* was

modified so that the term “Mexican” was replaced with “Chinese/Taiwanese” which was similar to the techniques used in other studies of Asian population (Farver, Narang & Badha, 2002; Lee, Yoon & Liu-Tom, 2006; Patel, 2008). Therefore, the Mexican orientation subscale (MOS) was replaced with the Chinese orientation subscale (COS) in this study. Sample items on the American orientation subscale (AOS) include “My thinking is done in the English language” and “My friends now are of Anglo origin.” Sample items on the Chinese orientation subscale (COS) include “I enjoy Chinese language music” and “I like to identify myself as a Chinese.” In terms of reliability, coefficient alphas for the internal consistency were .83 for the AOS and .88 for the MOS, respectively. In Lee, Yoon and Liu-Tom’s study (2006) of validating the *ARSMA-II* on Asian American samples, the reliability was reported adequate, with coefficient alphas .84 for the Asian orientation subscale (AOS) and .77 for the Western orientation subscale (WOS).

Psychological Acculturation. Psychological acculturation was measured by the *Asian Values Scale-Revised (AVS-R)* (Kim & Hong, 2004). The *AVS-R*, containing 25 items, was modified from the original *Asian Values Scale (AVS)* to examine the degree of adherence to Asian cultural values (see Appendix D). This 4-point Likert scale (*1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree*) aims to assess individuals’ endorsement of each value. There are five categorized domains: education/ career issues in family, conforming to family norms, emotional regulation, modesty and consideration for others, and respecting elders. A higher total number of the score indicates a stronger adherence to Asian cultural values. Sample items on the *AVS-R* include “One should not deviate from familial and social norms”, “Children should not place their parents in retirement homes”, and “One should be discouraged from talking about one’s accomplishments”. The internal reliability of the *AVS-R* was reported

adequate, with Cronbach's alpha .77 in the sample of Asian Americans. In addition, since the *AVS-R* was modified from the *AVS*, a Pearson correlation coefficient of .93 was observed between the *AVS* and the *AVS-R*, suggesting good concurrent validity for the *AVS-R* scores (Kim & Hong, 2004).

Psychological Well-being. Psychological well-being was measured by the well-being subscale in the *Mental Health Inventory (MHI)*, containing 14 items, to assess the aspect of psychological well-being (see Appendix E). The *MHI*, developed by the Rand Health Insurance Experiment, was based on the *General Well-Being Schedule (GWB)* to assess both psychological well-being and psychological distress (Veit & Ware, 1983). The *MHI* contains 38 items and includes two subscales (24 items for the subscale of Distress and 14 items for the subscale of Well-being). Participants were asked to respond the questions on a 6-point Likert scale, ranging from 1 (*all of the time*) to 6 (*none of the time*). All 14 items in the well-being subscale are reverse coded. A higher score on the well-being subscale indicates a greater level of positive state of mental health. Sample items in the well-being subscale of the *MHI* include “How much of the time, during the past month, has your daily life been full of things that were interesting to you?” and “During the past month, how much of the time have you felt loved and wanted?” Scores on the *MHI* were found to relate to stressful life events, social support, emotional difficulties, physical illness, general health perceptions, life satisfaction, and the utilization of mental health services (Veit & Ware, 1983). In terms of reliability, the internal consistency for the well-being subscale was reported highly reliable, with Cronbach's alpha .92 (Veit & Ware, 1983). In Kim, Kendall, and Webb's study (2015) on Asian American samples, the reliability of the well-being subscale was reported excellent, with Cronbach's alpha .94.

CHAPTER IV

RESULTS

This chapter focuses on the results of the analyses to address the hypotheses of this study. Preliminary analyses will be first presented, followed by the discussion of reliability issues and descriptive statistics. Next, test of the hypotheses with relevant statistical measurements will be discussed. Last, a summary of the results for this study will be addressed.

Preliminary analyses

Data cleaning was the first process of data analysis. Fifty-one surveys were removed from the data set due to the incomplete data. To explore the missing data (those who did not complete the survey), an ANOVA analysis was conducted to compare the differences between two groups, complete group (those who completed the survey) and incomplete group (those who did not complete the survey). The ANOVA result, shown in Table 2, indicated that there were no significant differences between these two groups ($p > .05$) across the seven demographic variables. Therefore, it was considered appropriate to delete the incomplete data without compromising the validity in this study.

Table 2

ANOVA analyses for demographic variables between complete and incomplete groups

		Sum of Squares	df	Mean Square	F	Sig.
Age	Between Groups	30.94	1	30.94	.50	.48
	Within Groups	16201.20	259	62.55		
Gender	Between Groups	.13	1	.13	.59	.44
	Within Groups	58.42	264	.22		
Length of residence	Between Groups	.02	1	.02	.03	.87
	Within Groups	143.94	264	.55		
Immigration status	Between Groups	.39	1	.39	1.03	.31
	Within Groups	100.39	264	.38		
Primary language	Between Groups	.12	1	.12	.18	.68
	Within Groups	177.22	264	.67		
Relationship status	Between Groups	.57	1	.57	1.10	.30
	Within Groups	135.92	264	.52		
Education level	Between Groups	.02	1	.02	.04	.85
	Within Groups	179.98	264	.68		

Reliability

The reliabilities of the scales used in the study are shown in Table 3. The Cronbach's alpha (α) in the *Asian cultural Values Scale-Revised (AVS-R)* was .71; the modified *Acculturation Rating Scale for Mexican Americans-II (ARSMA-II)* had alphas of .81 for the Chinese orientation subscale and .83 for the American orientation subscale; the *Mental health Inventory (MHI)* had alphas of .94 for the distress subscale and .92 for the well-being subscale; the *Experiences in Close Relationships Scale-Short form (ECR-S)* had alphas of .37 for the attachment anxiety subscale and .22 for the attachment avoidance subscale. Specifically, due to the low reliability in the *Experiences in Close Relationships Scale-Short form (ECR-S)* reported above, further exploration on reliability analysis was performed. Among the 6 items in the attachment anxiety subscale, item 8 was deleted to obtain better reliability. The item 8 is “I do not often worry about being abandoned.” Among the 6 items in the attachment avoidance subscale, items 1, 5 and 9 were deleted to improve reliability. These three items are “It helps to turn to my romantic partner in times of need,” “I turn to my partner for many things, including comfort and reassurance” and “I usually discuss my problems and concerns with my partners.” The Cronbach’s alphas in these two subscales were greatly improved from .37 to .66 for the attachment anxiety subscale, and from .22 to .75 for the attachment avoidance subscale after four items were deleted.

Descriptive Statistics

Table 3 summarizes the Means, Standard Deviation, Ranges, Reliability coefficients (α), Skewness and Kurtosis, including the two subscales of *Experiences in Close Relationship-Short form (ECR-S)*, the two subscales of the modified *Acculturation Rating Scale for Mexican Americans-II (ARSMA-II)*, the *Asian Values Scale-Revised (AVS-R)*, and the well-being subscale

of *Mental Health Inventory (MHI)*. The *ECR-S* contains the attachment anxiety subscale and the attachment avoidance subscale. Scores for the attachment anxiety subscale have a possible range from 5 to 35. In this sample, the total scores of the anxiety subscale ranged from 6 to 35 and the mean score was 18.1 ($SD = 5.6$). A higher score implied a higher level of attachment anxiety; a lower score implied a lower level of attachment anxiety. In addition, scores for the attachment avoidance subscale have a possible range from 3 to 21. In this sample, the total scores of the avoidance subscale ranged from 3 to 18 and the mean score was 8.5 ($SD = 3.8$). A higher score indicated a higher level of attachment avoidance; a lower score indicated a lower level of attachment avoidance. From the score range and the mean scores, the participants exhibited a moderate level of secure attachment.

With regard to the acculturation scores, higher scores on the Chinese orientation subscale/ the American orientation subscale indicate a stronger orientation towards the named culture. The mean scores for both subscales have a possible range from 1 to 5. In this sample, the Chinese orientation score had a higher mean ($M = 3.95$, $SD = .50$) than the American orientation score ($M = 3.02$, $SD = .55$), indicating that the participants exhibited a higher level of acculturation towards Chinese culture than American culture. In other words, the participants showed a stronger level of Chinese orientation, which was also reflected from the total acculturation score ($M = -.93$, $SD = .80$) (the difference between Chinese orientation score and American orientation score).

With regard to the Asian cultural values scores, a higher score on the scale indicates a stronger level of endorsing Asian cultural values, and a lower score indicates a weaker level of endorsing Asian cultural values. The mean score for the scale has a possible range from 1 to 4.

In this sample, the total scores ranged from 1 to 3 and the mean score was 2.41 ($SD = .24$), which indicated a moderate level of the endorsement on Asian cultural values based on a 4-item Likert scale.

With regard to the mental health scores, a higher score on the well-being subscale indicates a higher level of psychological well-being and a lower score indicates a lower level of psychological well-being. The scores for the well-being subscale have a possible range from 14 to 84. In this sample, the total scores ranged from 19 to 78 and the mean score was 54.77 ($SD = 11.37$), which indicated a high range of psychological well-being.

The normality check of the data in this study was evaluated by skewness/ kurtosis. Results for skewness and kurtosis in each subscale were as follows: skewness and kurtosis for the attachment anxiety subscale in the *ECR-S* were .55 and .23, respectively; skewness and kurtosis for the attachment avoidance subscale in the *ECR-S* were .40 and -.80, respectively; skewness and kurtosis for the Chinese orientation subscale in the modified *ARSMA-II* were -.74 and 1.38, respectively; skewness and kurtosis for the American orientation subscale in the modified *ARSMA-II* were -.07 and .75, respectively; skewness and kurtosis for the *AVS-R* were .05 and .00, respectively; skewness and kurtosis for the well-being subscale in the *MHI* were -.41 and -.06, respectively. According to Fields (2013), the rule of thumb for acceptable skewness and kurtosis scores are set within ± 1.96 limits, suggesting that the departure from normality is not too extreme. In terms of the above skewness and kurtosis in the subscales of the study, all of skewness and kurtosis were all within ± 1.96 , suggesting the sample data in this study was drawn from a normally distributed population.

Table 3

Descriptive statistics for composite scores (N = 215)

	Mean (<i>M</i>)	Std. Deviation (<i>SD</i>)	Minimum	Maximum	<i>A</i>	Skewness	Kurtosis
Adult attachment							
Anxiety	18.10	5.61	6	35	.66	.55	.23
Avoidance	8.49	3.83	3	18	.75	.40	-.80
Acculturation							
Chinese orientation	3.95	.50	1	5	.81	-.74	1.38
American orientation	3.02	.55	1	5	.83	-.07	.75
Total acculturation	-.93	.80	-3	2			
Asian cultural values	2.41	.24	1	3	.71	.05	.00
Psychological well-being	54.77	11.37	19	78	.92	-.41	-.06

Table 4 shows the bivariate correlations among variables in this study. The results indicated that Age was significantly negatively correlated with Attachment Anxiety ($r = -.24, p < .01$) and Acculturation towards American orientation ($r = -.19, p < .01$). This indicated that people who were older demonstrated a lower level of attachment anxiety and a lower level of acculturation towards American orientation. In addition, Attachment Anxiety was found significantly positively correlated with Attachment Avoidance ($r = .31, p < .01$), but was negatively correlated with Psychological Well-being ($r = -.25, p < .01$). Attachment Avoidance was also found significantly negatively correlated with Psychological Well-being ($r = -.14, p < .05$). This suggested that people with a higher level of attachment anxiety and/ or attachment avoidance

tended to have a lower level of psychological well-being. Moreover, Asian cultural values was found significantly positively correlated with Acculturation towards Chinese orientation ($r = .20$, $p < .01$). Acculturation towards Chinese orientation was significantly negatively correlated with Acculturation towards American orientation ($r = -.16$, $p < .05$). Scores on the Total acculturation (the differences between Chinese orientation and American orientation) were negatively correlated with Asian cultural values ($r = -.15$, $p < .05$) and Acculturation towards Chinese orientation ($r = -.74$, $p < .01$), but were positively correlated with Acculturation towards American orientation ($r = .79$, $p < .01$). This indicated that people with a stronger level of Chinese orientation adhered more to Asian cultural values, and those with a stronger American level of orientation adhered less to Asian cultural values.

In sum, Age, serving as the demographic variable, was found significantly correlated with Attachment Anxiety and Acculturation towards American orientation. Both Attachment Anxiety and Attachment Avoidance were found negatively correlated with Psychological Well-being and such correlations were statistically significant. Asian cultural values was found positively correlated with Acculturation towards Chinese orientation. In addition, Acculturation towards Chinese orientation, Acculturation towards American orientation, and Total acculturation were correlated in the expected directions, with Total acculturation having a positive correlation with Acculturation towards American orientation while having a negative correlation with Acculturation towards Chinese orientation.

Table 4

Bivariate correlations among demographic, independent, and dependent variables (N=215)

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Age	1.00								
2. Gender	-.17*	1.00							
3. Attachment Anxiety	-.24**	.06	1.00						
4. Attachment Avoidance	.03	-.05	.31**	1.00					
5. Asian Cultural Values	.02	-.09	.07	.06	1.00				
6. Acculturation: Chinese orientation	-.02	.02	.07	-.03	.20**	1.00			
7. Acculturation: American orientation	-.19**	-.08	.01	-.06	-.03	-.16*	1.00		
8. Total acculturation	-.12	-.07	-.03	-.02	-.15*	-.74**	.79**	1.00	
9. Psychological well-being	.10	.02	-.25**	-.29**	-.07	-.09	.07	.10	1.00

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

In terms of other categorical demographic variables in this study, Immigration status, Primary language usage at home and Relationship status, ANOVA analyses were conducted to test the group differences on psychological well-being. For the variable of Immigration status, US permanent residents and naturalized US citizens were compared through ANOVA. The results showed that there were no statistically significant differences between the group means as determined by one-way ANOVA, $F = .97, p = .53 (p > .05)$. In other words, no significant differences in the mean level of psychological well-being between US permanent residents and naturalized US citizens were found. For the variable of Primary language usage at home, five categories (1 = *English*; 2 = *Mandarin Chinese*; 3 = *Taiwanese*; 4 = *Cantonese*; 5 = *other*) were recoded into two categories (1 = *English*; 0 = *mother tongue (other than English)*) so as to compare the group differences. The result showed no significant differences between the two groups, $F = 1.32, p = .10 (p > .05)$. This suggested that there were no significant differences in the mean level of psychological well-being between primary English-speaking group and primary mother tongue-speaking group. For the variable of Relationship status, five categories (1 = *single (never married)*; 2 = *in relationship*; 3 = *married*; 4 = *divorced*; 5 = *other*) were recoded into two categories (1 = *never married*; 0 = *married/ divorced*) so as to compare the group differences. The results showed that there were no significant differences between the two groups, $F = 1.04, p = .42 (p > .05)$. This suggested that no significant differences in the mean level of psychological well-being between married/divorced group and never married group were found.

Test of hypotheses

Bivariate correlations and hierarchical multiple regression were used to test eight hypotheses

of this study. Each hypothesis was explored below.

Hypothesis 1: Attachment anxiety is significantly negatively correlated with Psychological Well-being. With regard to the first hypothesis, bivariate correlation analysis was used to examine the correlational relationship between attachment anxiety and psychological well-being. The result demonstrated that Attachment Anxiety was significantly negatively correlated with Psychological Well-being ($r = -.25, p < .01$). This indicated that those who had a lower level of attachment anxiety tended to have a higher level of psychological well-being, and those who had a higher level of attachment anxiety tended to have a lower level of psychological well-being. The result supported the first hypothesis that Attachment Anxiety is significantly negatively correlated with Psychological Well-being.

Hypothesis 2: Attachment Avoidance is significantly negatively correlated with Psychological Well-being. Bivariate correlation analysis was conducted to examine the relationship between Attachment Avoidance and Psychological Well-being. Attachment Avoidance was found to have a significant negative correlation with Psychological Well-being ($r = -.14, p < .05$), indicating that those who had a lower level of attachment avoidance tended to have a higher level of psychological well-being, and those who had a higher level of attachment avoidance tended to have a lower level of psychological well-being. The result supported the second hypothesis that Attachment Avoidance is significantly negatively correlated with Psychological Well-being.

Hierarchical Multiple Regression Analyses for Hypotheses 3 to 8

With regard to Hypotheses 3 to 8, moderating effects of Acculturation to American

orientation, Acculturation to Chinese orientation, and Asian cultural values on the relationship between Attachment Anxiety and Psychological Well-being and that between Attachment Avoidance and Psychological Well-being were formulated. Acculturation to American orientation, Acculturation to Chinese orientation and Asian cultural values were conceptualized as moderating variables. According to Frazier, Tix and Barron (2004), hierarchical multiple regression (HMR) has been often suggested for the use of examining interaction effects between independent and dependent variables when the variables are continuous. In addition, when examining the moderating effects, interactions between covariates and other variables in the regression model should be considered to control for the effects for the other variables (Cohen & Cohen, 1983). To take this issue into consideration, seven demographic variables in this study were first included as control variables in an overall hierarchical multiple regression analysis, following the entry of five main variables and six interaction variables. According to preliminary analyses and descriptive statistics shown in Table 2 & 3, no significant results among demographic variables were found in the bivariate correlation analysis and the ANOVA. The five main variables are Attachment Anxiety, Attachment Avoidance, Acculturation to American orientation, Acculturation to Chinese orientation, and Asian cultural values. The six interaction variables are (Attachment Anxiety x Acculturation to American orientation), (Attachment Avoidance x Acculturation to American orientation), (Attachment Anxiety x Acculturation to Chinese orientation), (Attachment Avoidance x Acculturation to Chinese orientation), (Attachment Anxiety x Asian cultural values), and (Attachment Avoidance x Asian cultural values). The summary of the results was shown in Table 11 (see Appendix F). In the analysis that Attachment Anxiety and Attachment Avoidance served as the predictor variables and

Psychological Well-being served as the outcome variable, seven demographic variables, Gender, Age, Length of residence in the United States, Primary language usage at home, Immigration status, Relationship status, and Education level were entered as control variables in the first step of the HMR analysis. The second step included five main variables: Attachment Anxiety, Attachment Avoidance, Acculturation towards American orientation, Acculturation towards Chinese orientation, and Asian cultural values. The third step examined the moderating effects by entering six interaction variables: (Attachment Anxiety x Acculturation to American orientation), (Attachment Avoidance x Acculturation to American orientation), (Attachment Anxiety x Acculturation to Chinese orientation), (Attachment Avoidance x Acculturation to Chinese orientation), (Attachment Anxiety x Asian cultural values) and (Attachment Avoidance x Asian cultural values). Results showed that when demographic variables were controlled, the five main variables, Attachment Anxiety, Attachment Avoidance, Acculturation towards American orientation, Acculturation towards Chinese orientation and Asian cultural values variables accounted for an additional 10% of the variance in Psychological Well-being, which resulted in a significant increment in R^2 , $F(5, 199) = 4.70$, $p < .01$, $\Delta R^2 = .10$. However, when six interaction variables were entered, they accounted for an additional 4% of the variance in Psychological Well-being which did not result in a significant increment in R^2 , $F(6, 193) = 1.52$, $p > .05$, $\Delta R^2 = .04$. In the final model, two main variables, Attachment Anxiety, Attachment Avoidance, and two interaction variables, (Attachment Anxiety x Acculturation towards American orientation) and (Attachment Avoidance x Acculturation towards American orientation) were found significant on Psychological Well-being, but not demographic variables ($p > .05$). Based on the above results, the seven demographic variables will be excluded from the

following separate HMR analyses.

Hypothesis 3: Acculturation towards Chinese orientation moderates the relationship between Attachment Anxiety and Psychological Well-being. Hypothesis 4: Acculturation towards Chinese orientation moderates the relationship between Attachment Avoidance and Psychological Well-being. The moderation effects of Acculturation towards Chinese orientation on Attachment Anxiety and Attachment Avoidance in relation to Psychological Well-being were proposed in Hypotheses 3 and 4. These two hypotheses will be tested together through hierarchical multiple regression analyses so as to examine the moderating effects where Attachment Anxiety and Attachment Avoidance served as the independent variables and Psychological Well-being served as the dependent variable. Acculturation towards Chinese orientation was entered as the moderating variable (shown in Table 5). In the first step of the analysis (block 1), two main variables, Attachment Anxiety and Attachment Avoidance were entered as the main effects. In the second step, one moderating variable, Acculturation towards Chinese orientation was entered as the moderator. In the third step, two interaction variables (Attachment Anxiety x Acculturation towards Chinese orientation) and (Attachment Avoidance x Acculturation towards Chinese orientation) were entered together as a block to test the moderation effect. The results showed that two main variables, Attachment Anxiety and Attachment Avoidance, contributed significantly to the model 1, $F(2, 212) = 13.49, p < .01, R^2 = .11$, representing 11% of the variance in Psychological Well-being. When the moderating variable, Acculturation towards Chinese orientation, was entered into the model 2, it explained an additional 1% of the variance in Psychological Well-being. The change in variation was found not significant, $F(1, 211) = 1.64, p > .05, \Delta R^2 = .01$. When two interactions, (Attachment

Anxiety x Acculturation towards Chinese orientation) and (Attachment Avoidance x Acculturation towards Chinese orientation) were entered into the model 3, they merely explained an additional .1% of the variance in Psychological Well-being, which also resulted in a non-significant increment, $F(2, 209) = .09, p > .05, \Delta R^2 = .001$. In the final model, only the main variables, Attachment Anxiety ($\beta = -.17, p < .05$) and Attachment Avoidance ($\beta = -.24, p < .01$) were found to be significant on Psychological Well-being. None of the moderating variable or interaction variables were found statistically significant on Psychological Well-being ($p > .05$), indicating that there was no moderating effect of Acculturation towards Chinese orientation on the relationship between Attachment Anxiety and Psychological Well-being or the relationship between Attachment Avoidance and Psychological Well-being. Therefore, Hypothesis 3 that *Acculturation towards Chinese orientation moderates the relationship between Attachment Anxiety and Psychological Well-being* and Hypothesis 4 that *Acculturation towards Chinese orientation moderates the relationship between Attachment Avoidance and Psychological Well-being* were not supported.

Table 5

Hierarchical multiple regression analyses of moderating effects of Acculturation towards Chinese orientation on the relations between Adult Attachment and Psychological Well-being

Hierarchical step/variable	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	Change in <i>R</i> ²	<i>ΔF</i>	<i>Df</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>t</i> (90)
1. Main variables (model 1)	.34	.11	.11	.11	13.49**	2, 212				
2. Moderating variable (model 2)	.35	.12	.11	.01	1.64	1, 211				
2. Interactions (model 3)	.35	.12	.10	.001	.09	2, 209				
Final Model										
Main effects (block 1)										
Attachment Anxiety							-.34	.14	-.17	-2.44*
Attachment Avoidance							-.71	.20	-.24	-3.50**
Moderating variable (block 2)										
Acculturation towards Chinese orientation							-.11	.09	-.08	-1.26
Interactions (block 3)										
Attachment Anxiety x Acculturation towards Chinese orientation							-.08	.27	-.02	-.30
Attachment Avoidance x Acculturation towards Chinese orientation							.16	.42	.03	.39

Note. *N*=215. **p* < .05 ***p* < .01

Hypothesis 5: Acculturation towards American orientation moderates the relationship between Attachment Anxiety and Psychological Well-being. Hypothesis 6: Acculturation towards American orientation moderates the relationship between Attachment Avoidance

and Psychological Well-being. The moderation effects of Acculturation towards American orientation on Attachment Anxiety and Attachment Avoidance in relation to Psychological Well-being were proposed in Hypotheses 5 and 6. These two hypotheses were tested together through hierarchical multiple regression analyses where Attachment Anxiety and Attachment Avoidance served as the independent variables, Psychological Well-being served as the dependent variable, and Acculturation towards American orientation served as the moderating variable. In the first step of the analysis (block 1), two main variables, Attachment Anxiety and Attachment Avoidance, were entered as the main effects. In the second step, the moderating variable, Acculturation towards American orientation, was entered as the moderator. In the third step, two interaction variables, (Attachment Anxiety x Acculturation towards American orientation) and (Attachment Avoidance x Acculturation towards American orientation) were entered together as a block to test the moderation effect. The results, shown in Table 6, suggested that the two main variables contributed significantly to the model 1, $F(2, 212) = 13.49, p < .01, R^2 = .11$, representing 11% of the variance in Psychological Well-being. When the moderating variable was entered into the model 2, it explained an additional .4% of the variance in Psychological Well-being, which did not result in a significant increase on Psychological Well-being, $F(1, 211) = .86, p > .05, \Delta R^2 = .004$. When the two interaction variables were entered into the model 3, they explained additional 4% of the variance in Psychological Well-being. The result demonstrated a significant increase on Psychological Well-being, $F(2, 209) = 5.07, p < .01, \Delta R^2 = .04$. In the final model, two main variables, Attachment Anxiety and Attachment Avoidance, and two interaction variables, (Attachment Anxiety x Acculturation towards American orientation) and (Attachment Avoidance x Acculturation towards American orientation) were

found to be significantly associated with Psychological Well-being ($p < .01$). The significance for the two interaction variables, (Attachment Anxiety x Acculturation towards American orientation) and (Attachment Avoidance x Acculturation towards American orientation) implied that Acculturation towards American orientation significantly moderated the relationship between Attachment Anxiety and Psychological Well-being and the relationship between Attachment Avoidance and Psychological Well-being; $\beta = -.20, p < .01$ for (Attachment Anxiety x Acculturation towards American orientation), $\beta = .20, p < .01$ for (Attachment Avoidance x Acculturation towards American orientation). Therefore, Hypotheses 5 and 6 regarding the moderating effects of Acculturation towards American orientation on the relations between Attachment Anxiety/ Attachment Avoidance and Psychological Well-being were supported. It was further suggested that Acculturation towards American orientation had a buffering effect on the relationship between Attachment Anxiety Psychological Well-being and the relationship between Attachment Avoidance and Psychological Well-being. In other words, a higher level of acculturation towards American orientation predicted a weaker negative relationship between attachment anxiety/ attachment avoidance and psychological well-being. A lower level of acculturation towards American orientation predicted a stronger negative relationship between attachment anxiety/ attachment avoidance and psychological well-being.

Table 6

Hierarchical multiple regression analyses of moderating effects of Acculturation towards American orientation on the relations between Adult Attachment and Psychological Well-being

Hierarchical step/variable	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	Change in <i>R</i> ²	ΔF	<i>df</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>t</i> (90)
1. Main variables (model 1)	.34	.11	.11	.11	13.49**	2, 212				
2. Moderating variable (model 2)	.34	.12	.10	.004	.86	1, 211				
3. Interactions (model 3)	.40	.16	.14	.04	5.07**	2, 209				
Final Model										
Main effects (block 1)										
Attachment Anxiety							-.37	.14	-.18	-2.74**
Attachment Avoidance							-.75	.20	-.25	-3.68**
Moderating variable (block 2)										
Acculturation towards American orientation							.07	.10	.04	.64
Interactions (block 3)										
Attachment Anxiety x Acculturation towards American orientation							-.72	.27	-.20	-2.70**
Attachment Avoidance x Acculturation towards American orientation							1.12	.41	.20	2.73**

Note. *N*=215. **p* < .05 ***p* < .01

Hypothesis 7: Asian cultural values moderates the relationship between Attachment Anxiety and Psychological Well-being. Hypothesis 8: Asian cultural values moderates the relationship between Attachment Avoidance and Psychological Well-being. The moderating effects of Asian cultural values on Attachment Anxiety and Attachment Avoidance in relation to

Psychological Well-being were proposed in Hypotheses 7 and 8. These two hypotheses were tested together through hierarchical multiple regression analyses so as to examine the moderating effects where Attachment Anxiety and Attachment Avoidance served as the independent variables, Psychological Well-being served as the dependent variable, and Asian cultural values served as the moderating variable (shown in Table 7). In the first step of the analysis (block 1), two main variables, Attachment Anxiety and Attachment Avoidance, were entered as the main effects. In the second step, one moderating variable, Asian cultural values, was entered as the moderator. In the third step, two interaction variables, (Attachment Anxiety x Asian cultural values) and (Attachment Avoidance x Asian cultural values), were entered together as a block to test the moderation effects on Attachment Anxiety and Attachment Avoidance. The results showed that two main variables, Attachment Anxiety and Attachment Avoidance, contributed significantly to the model 1, $F(2, 212) = 13.49, p < .01, R^2 = .11$, representing 11% of the variance in Psychological Well-being. When the moderating variable, Asian cultural values, was entered into the model 2, it merely explained an additional .2% of the variance in Psychological Well-being. The change in variation was found non-significant, $F(1, 211) = .37, p > .05, \Delta R^2 = .002$. When two interactions, (Attachment Anxiety x Asian cultural values) and (Attachment Avoidance x Asian cultural values), were entered into the model 3, they explained additional .6% of the variance in Psychological Well-being, which also resulted in a non-significant increment, $F(2, 209) = .73, p > .05, \Delta R^2 = .006$. In the final model, only the main variables, Attachment Anxiety ($\beta = -.17, p < .05$) and Attachment Avoidance ($\beta = -.24, p < .01$) were found to be significant on Psychological Well-being. None of the moderating variable or interaction variables were found statistically significantly associated with Psychological Well-being ($p >$

.05), indicating that there was no moderating effect of Asian cultural values on the relationship between Attachment Anxiety and Psychological Well-being or the relationship between Attachment Avoidance and Psychological Well-being. Therefore, Hypothesis 7 that *Asian cultural values moderates the relationship between Attachment Anxiety and Psychological Well-being* and Hypothesis 8 that *Asian cultural values moderates the relationship between Attachment Avoidance and Psychological Well-being* were not supported.

Table 7

Hierarchical multiple regression analyses of moderating effects of Asian cultural values on the relations between Adult Attachment and Psychological Well-being

Hierarchical step/variable	R	R ²	Adjusted R ²	Change in R ²	ΔF	Df	B	SE	B	t (90)
1. Main variables (model 1)	.34	.11	.11	.11	13.49**	2, 212				
2. Moderating variable (model 2)	.34	.11	.10	.002	.37	1, 211				
3. Interactions (model 3)	.35	.12	.10	.01	.73	2, 209				
Final Model										
Main effects (block 1)										
Attachment Anxiety							-.34	.14	-.17	-2.47*
Attachment Avoidance							-.70	.20	-.24	-3.46**
Moderating variable (block 2)										
Asian cultural values							-1.38	3.16	-.03	-.44
Interactions (block 3)										
Attachment Anxiety x Asian cultural values							-.28	.59	-.03	-.47
Attachment Avoidance x Asian cultural values							.97	.83	.08	1.17

Note. N=215. * p < .05 ** p < .01

Supplemental analyses

Based on the bidimensional model of acculturation developed by Berry (1980), four acculturation stages were conceptualized and identified: *assimilation*, *separation*, *integration*, and *marginalization*. *Assimilation* represents the identification with the dominant culture, but the rejection of the culture of origin. *Separation* represents the rejection of the dominant culture, but the retention of the culture of origin. *Marginalization* represents the rejection of both the culture of origin and the dominant culture. *Integration* represents the identification with both the dominant culture and the culture of origin. Previous studies have shown that individuals in the *integration* strategy were more capable of navigating between the two cultures effectively and reported less psychological distress, more positive adaptation and better psycho-social outcomes compared to those in other acculturation strategies (Phinney, 1990; Baker et al., 2012). To further explore this issue in this study, a total of 215 samples were categorized into four acculturation strategy groups based on the level of acculturation towards dominant culture (American orientation) and culture of origin (Chinese orientation), measured by the modified *Acculturation Rating Scale for Mexican Americans-II (ARSMA-II)*. The cutoff score for the two subscales of the modified *ARSMA-II* was both set at 3, based on the 5-point Likert rating scale. Specifically, > 3 represents a higher level of named orientation; ≤ 3 represents a lower level of named orientation.

A factorial ANOVA analysis was used to examine how different levels of Chinese orientation and American orientation (> 3 and ≤ 3) and the interaction effects influence the dependent variable (Psychological well-being). Table 8 shows the descriptive statistics for four acculturation groups. It was found that a majority of the participants demonstrated a higher level

of Chinese orientation, no matter the level of American orientation. The result of a factorial ANOVA, shown in Table 9, revealed that there was no main effect of American orientation or Chinese orientation on Psychological well-being, $F(1, 211) = .20, p > .05$ for American orientation and $F(1, 211) = .05, p > .05$ for Chinese orientation, respectively. There were no significant interaction effects between American orientation and Chinese orientation on Psychological well-being, $F(1, 211) = .01, p > .05$, indicating that the level of American orientation and/ or Chinese orientation do/ does not significantly predict the level of Psychological well-being.

Table 8

Factorial ANOVA: descriptive statistics for the levels of American orientation and Chinese orientation predicting Psychological Well-being

American orientation	Chinese orientation	Mean	Std. Deviation	N
≤ 3	≤ 3	54.50	13.44	2
	> 3	53.87	10.94	103
	Total	53.89	10.91	105
> 3	≤ 3	57.00	8.29	7
	> 3	55.52	12.00	103
	Total	55.62	11.78	110
Total		54.77	11.37	215

Table 9

Factorial ANOVA of the interaction effects between American orientation and Chinese orientation predicting Psychological Well-being

Source	Type III Sum of				
	Squares	Df	Mean Square	F	Sig.
Corrected Model	176.28 ^a	3	58.76	.45	.72
Intercept	73679.33	1	73679.33	565.21	.00
American orientation	26.01	1	26.01	.20	.66
Chinese orientation	6.67	1	6.67	.05	.82
American orientation * Chinese orientation	1.09	1	1.09	.01	.93
Error	27505.55	211	130.36		
Total	672678.00	215			
Corrected Total	27681.83	214			

a. R Squared = .006 (Adjusted R Squared = -.008)

Four acculturation groups were generated based on the scores of American orientation and Chinese orientation. Group 1 refers to the *integration* group whom strongly identified with both American culture and Chinese culture. This group was defined by the score of Chinese orientation subscale > 3 and the score of American orientation subscale > 3. Group 2 refers to the *assimilation* group whom strongly identified with American culture, but not with Chinese culture. This group was defined by the score of Chinese orientation subscale ≤ 3 and the score of American orientation subscale > 3. Group 3 refers to the *separation* group whom strongly identified with Chinese culture, but not with American culture. This group was defined by the score of Chinese orientation subscale > 3 and the score of American orientation subscale ≤ 3.

Group 4 refers to the *marginalization* group whom did not strongly identify with both Chinese culture and American culture. This group was defined by the score of Chinese orientation subscale ≤ 3 and the score of American orientation subscale ≤ 3 . Table 10 shows that about 48% ($N = 103$) of the participants were categorized into the *integration* group; 3% ($N = 7$) of the participants were categorized into the *assimilation* group; 48% ($N = 103$) of the participants were categorized into the *separation* group; less than 1% ($N = 2$) of the participants were categorized into the *marginalization* group. Such results indicated that almost half of the participants were equally bicultural and another half of the participants tended to adhere to a stronger level of Chinese orientation than American orientation. Among these four acculturation groups, the *assimilation* group of the participants demonstrated the highest level of psychological well-being ($M = 57$), following the *integration* group ($M = 55.52$), the *marginalization* group ($M = 54.5$), and the *separation* group ($M = 53.87$). This suggested that individuals who were bicultural or had a stronger identification with American culture tended to demonstrate a higher level of psychological well-being. However, due to the unequal distribution of the four groups, such interpretation should be taken with caution.

Table 10

Descriptive statistics for Psychological Well-being on four acculturation groups (N = 215)

	Mean	N	Percent	Std. Deviation
Integration	55.52	103	47.9	12.00
Assimilation	57	7	3.3	8.29
Separation	53.87	103	47.9	10.94
Marginalization	54.5	2	0.9	13.44

Summary

A total of 215 participants were analyzed in this study. The mean age of the participants was 36 ($SD = 8.22$) and there were more females (68.4%) than males (31.6%) in this sample. In general, the participants showed a moderate level of secure attachment, a stronger level of acculturation towards Chinese orientation than American orientation, a moderate level of Asian cultural values, and a higher level of psychological well-being based on the score range of each scale. Particularly, participants who were older demonstrated a lower level of acculturation towards American orientation and a higher level of acculturation towards Chinese orientation. Those who lived in the United States for a longer period of time demonstrated a higher level of acculturation towards American orientation. Participants who spoke their mother tongues (other than English) primarily at home exhibited a higher level of acculturation towards Chinese orientation. Those who are married or had been married (e.g., divorced) demonstrated a higher level of secure attachment and a higher level of psychological well-being.

In the bivariate correlation analyses, both attachment anxiety and attachment avoidance were significantly negatively correlated with psychological well-being. There was a positive correlation between Asian cultural values and acculturation towards Chinese orientation. Acculturation towards Chinese orientation was negatively correlated with acculturation towards American orientation. In hierarchical multiple regression (HMR) analyses, the results demonstrated a moderating effect of acculturation towards American orientation on the relationship between attachment anxiety and psychological well-being and the relationship between attachment avoidance and psychological well-being, which supported Hypothesis 5 that *acculturation towards American orientation moderates the relationship between attachment*

anxiety and psychological well-being and Hypothesis 6 that *acculturation towards American orientation moderates the relationship between attachment avoidance and psychological well-being*. This indicated that Acculturation towards American orientation had a buffering effect between Attachment Anxiety and Psychological Well-being, and between Attachment Avoidance and Psychological Well-being. In other words, a higher level of Acculturation towards American orientation predicted a weaker negative relationship between Attachment Anxiety/ Attachment Avoidance and Psychological Well-being. A lower level of Acculturation towards American orientation predicted a stronger negative relationship between Attachment Anxiety/ Attachment Avoidance and Psychological Well-being. Furthermore, supplemental factorial ANOVA analyses divided the participants into four acculturation groups and found that individuals who were bicultural or had a stronger identification with American culture tended to demonstrate a higher level of psychological well-being.

CHAPTER V

DISCUSSION

In the previous chapter, the results of examining the relationships among adult attachment, acculturation, and psychological well-being in Chinese/ Taiwanese immigrants were presented. In this chapter, a brief overview of this study, discussion of the findings, limitations, implications and recommendations for future research, clinical practice and training will be discussed.

Overview of the study

The purpose of this study was to explore adult attachment, acculturation, and psychological well-being in Chinese/ Taiwanese immigrants. In particular, the author focused on how adult attachment predicts psychological well-being and how acculturation influences the relationship between adult attachment and psychological well-being. Attachment theory presents an essential framework for understanding how individuals' attachment styles predict their psychological well-being. Past studies implied that early secure attachment predicts later positive psychosocial outcomes and early insecure attachment predicts later negative psychosocial outcomes (Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987; Levy, Blatt, & Shaver, 1998; Moran & Bento, 1998; Posada et al., 1999; Stanojevic', 2004). When exploring such an issue in immigrant populations, acculturation could be observed as one of the salient variables regarding how immigrants adjust themselves to a new culture while retaining their cultures of origin during the acculturation process. Based on Berry's bidimensional model of acculturation (1992), the concept of acculturation has been understood as a two-dimensional process of adjusting to the dominant culture and retaining the cultures of origin. Compared to the unidimensional model of

acculturation, the bidimensional model emphasizes that individuals are capable of holding both cultures and integrating into their values during the acculturation process. Four acculturation strategies were identified based on the development of the acculturation level: *assimilation*, *separation*, *marginalization* and *integration*. Previous studies showed that among these four acculturation strategies, the *integration* strategy was found to be associated with positive adaptation, better psycho-social outcomes, and higher level of general well-being (Phinney, 1990). Additionally, two domains of acculturation, behavioral and the psychological aspects of acculturation (Kim & Abreu, 2001), have further provided us with important concepts for understanding the complexity of acculturation.

There has been some literature examining the relationship between adult attachment and psychological well-being on immigrant populations. Some researchers tried to explore the relationship between acculturation and psychological well-being from the perspective of attachment theory (Chen, Mallinckrodt, & Mobley, 2003; Wang & Mallinckrodt, 2006; Van Oudenhoven & Hofstra, 2006; Yang, Tian, & Van Oudenhoven, 2010). Results showed that the level of acculturation was found to be a significant predictor of psychosocial adjustment. It was also found that the level of attachment anxiety was significantly associated with the level of acculturation to the dominant culture. Some other researchers attempted to identify moderating factors of influencing the relationship between attachment style/ level and individuals' psychological well-being (Wei et al., 2004; Patel, 2008). Specifically, Wei et al (2004) suggested that cultural factors, such as racial identity and acculturation, be taken into consideration when exploring adult attachment and psychological well-being on ethnic minority groups. For instance, individuals who were more acculturated towards American culture might exhibit

attachment configurations that were found normal to the United States, while those who were more acculturated towards Asian culture might exhibit different attachment configurations. Overall, the findings from previous studies implied that sociocultural variables serve as important factors of influencing the relationship between adult attachment and psychological well-being. The complexity of such relationships, though, has not been thoroughly examined. Further investigation is needed so as to help understand how adult attachment and other cultural factors together inform psychological well-being on immigrants.

Based upon the literature, the current study was designed to investigate the relationship between adult attachment and psychological well-being with the consideration of moderating effects of acculturation. To formulate the relationships among variables, three research questions were established. First, how does adult attachment predict psychological well-being in Chinese/ Taiwanese immigrants? Second, what role does acculturation play between adult attachment and psychological well-being? Third, how do different domains of acculturation influence the relationship between adult attachment and psychological well-being differently?

The participants of the study included individuals from age 18 to 65 who identify themselves as Chinese/ Taiwanese immigrants who were born overseas (including those who are currently holding green card residential status and those who have become naturalized U.S. citizens) currently residing in the United States. A total of 261 participants started the online survey and 215 completed the survey (the completion rate was 82%). Internet survey research was used to collect data. Each survey packet included an informed consent form, the *Demographic Questionnaire*, and four instruments: the *Experiences in Close Relationships-Short form (ECR-S)*, the modified *Acculturation Rating Scale for Mexican Americans-II (ARSMA-II)*, the *Asian*

Values Scale-Revised (AVS-R), and the well-being subscale in the *Mental Health Inventory (MHI)*. Descriptive statistics of the sample revealed that the mean age of the participants was 36 ($SD = 8.22$). There were more females (68.4%) than males (31.6%) in this sample. More than half of the participants have lived in the United States for 11 years or longer (51.6%). About similar percentage of the participants were permanent residents (45.1%) and U.S. Citizens (47%). In addition, 73.5% of the participants spoke Mandarin Chinese primarily at home. A majority of the participants were married (75.3%), followed by those were single (never married) (14.4%). Nearly half of the participants reported obtaining master's degree (47%), followed by Ph.D. degree (26.5%).

Discussion of the findings

To test the three research questions proposed in this study, bivariate correlation and hierarchical multiple regression analyses were conducted. Eight hypotheses mapped into the research questions were formulated and the results were discussed below.

Research Question 1. How does adult attachment predict psychological well-being in Chinese/ Taiwanese immigrants? Two hypotheses were proposed for this question. *Hypothesis 1: Attachment anxiety is significantly negatively correlated with psychological well-being.* *Hypothesis 2: Attachment avoidance is significantly negatively correlated with psychological well-being.* These two hypotheses were tested through bivariate correlation analyses. The results indicated that both attachment anxiety and attachment avoidance were significantly correlated with psychological well-being. Specifically, there was a significant negative correlation between attachment anxiety and psychological well-being ($r = -.25, p < .01$) and so was the relationship between attachment avoidance and psychological well-being ($r = -.14, p < .05$). In other words, a

high level of attachment anxiety/ attachment avoidance predicted a low level of psychological well-being, and a low level of attachment anxiety/ attachment avoidance predicted a high level of psychological well-being. This finding was in line with previous research findings that secure attachment predicted positive psychosocial outcomes; insecure attachment, including attachment anxiety and attachment avoidance, predicted negative psychosocial outcomes (Brennan & Shaver, 1995; Moran & Bento, 1998; Posada et al., 1999; Banse, 2004). Wei et al. (2005) further found that individuals with a high level of attachment anxiety were more vulnerable to a high level of depressed mood due to their high needs of validation from external resources instead of internal ones. Such finding may help explain the result in the present study that there was a stronger negative correlation between attachment anxiety and psychological well-being ($r = -.25, p < .01$) than that between attachment avoidance and psychological well-being ($r = -.14, p < .05$).

Research Question 2. What role does acculturation play between adult attachment and psychological well-being? For this question, moderating effects of acculturation on adult attachment and psychological well-being were proposed and four hypotheses were formulated. *Hypothesis 3: Acculturation towards Chinese orientation moderates the relationship between attachment anxiety and psychological well-being. Hypothesis 4: Acculturation towards Chinese orientation moderates the relationship between attachment avoidance and psychological well-being. Hypothesis 5: Acculturation towards American orientation moderates the relationship between attachment anxiety and psychological well-being. Hypothesis 6: Acculturation towards American orientation moderates the relationship between attachment avoidance and psychological well-being.* In terms of Berry's bidimensional model of acculturation, acculturation was conceptualized as a process of retaining the culture of origin and adjusting to

the dominant culture. In this study, acculturation was measured by two dimensions, which are retaining Chinese culture and acculturating to American culture. Based upon previous literature and the hypotheses, acculturation was conceptualized as a moderating variable between adult attachment and psychological well-being in this study. Through hierarchical multiple regression analyses, results showed a moderating effect of acculturation towards American orientation on both attachment anxiety and attachment avoidance in relation to psychological well-being, confirming Hypotheses 5 and 6. This suggested that acculturation towards American orientation had a buffering effect between attachment anxiety/ attachment avoidance and psychological well-being. Specifically, a higher level of acculturation towards American orientation predicted a weaker negative relationship between attachment anxiety/ attachment avoidance and psychological well-being. A lower level of acculturation towards American orientation predicted a stronger negative relationship between attachment anxiety/ attachment avoidance and psychological well-being. In other words, a weaker association between attachment anxiety/ attachment avoidance and psychological well-being occurred for the participants who reported a higher level of acculturation towards American orientation. A stronger association between attachment anxiety/ attachment avoidance and psychological well-being occurred for the participants who reported a lower level of acculturation towards American orientation. However, no moderating effect of acculturation towards Chinese orientation was found on both attachment anxiety and attachment avoidance in relation to psychological well-being. This may imply that for Chinese/ Taiwanese immigrants, the factor of acculturation towards American orientation was more likely to be emphasized during the acculturation process which may, in turn, help them feel more connected to the new culture so as to improve their psychological well-being. Wang

and Mallinckrodt (2006) found that acculturation to the US culture significantly negatively associated with attachment anxiety and positively associated with psychosocial adjustment on Chinese international students. Sue and Sue (1971) also addressed that highly acculturated individuals tend to find their self-worth defined by how they were accepted by their Caucasian friends. In addition, a general survey done by Kao and Thompson on immigrant populations (2003) showed that the level of acculturation to the host culture was found highly correlated with the level of education, which predicted the level of SES. From the demographic information of the participants in the present study, a majority of the participants were considered highly educated (47% with a Master's degree and 26.5% with a Ph.D. degree). This may further suggest that highly educated individuals were more likely to have higher levels of acculturation towards American orientation, which might help them get adjusted to the American society better. Overall, the above findings may help explain why acculturation towards American orientation became a salient moderator between attachment anxiety/ attachment avoidance and psychological well-being instead of the factor of acculturation towards Chinese orientation. It may further indicate that the association between adult attachment and acculturation may be more complex than the researcher assumed.

Research Question 3. How do different domains of acculturation impact the relationship between adult attachment and psychological well-being differently? With regard to this question, two hypotheses were proposed in response to the research question 3. *Hypothesis 7: Asian cultural values moderates the relationship between attachment anxiety and psychological well-being. Hypothesis 8: Asian cultural values moderates the relationship between attachment avoidance and psychological well-being.* Kim and Abreu (2001) proposed the concept of two

domains of acculturation, behavioral aspect and psychological aspect. In this study, behavioral aspect of acculturation was measured by the modified *ARSMA-II* scale, which has been addressed in the research question 2. Psychological aspect of acculturation was measured by the *Asian Values Scale-Revised (AVS-R)* scale, which will be addressed in this research question. The moderating effects of Asian cultural values on Attachment Anxiety and Attachment Avoidance in relation to Psychological well-being were formulated in Hypotheses 7 and 8. Through the hierarchical multiple regression analysis, the results showed that no moderating effect of Asian cultural values was found between Attachment Anxiety/ Attachment Avoidance and Psychological Well-being. Therefore, Hypotheses 7 and 8 were not supported, indicating that Asian cultural values did not serve as a significant moderating variable for Chinese/ Taiwanese immigrants regarding their adult attachment and psychological well-being. The insignificance of moderating effects of Asian cultural values, along with acculturation towards Chinese orientation, may reflect a sense of reality for Chinese/ Taiwanese immigrants that the adherence to the Chinese cultural values may not help reduce the level of attachment anxiety or attachment avoidance to improve their psychological well-being.

Other than the above findings, some other results suggested that the participants in this study reported a moderate level of secure attachment. They exhibited a slightly higher level of Chinese orientation than American orientation and reported a high range of psychological well-being. In addition, age was negatively correlated with attachment anxiety and acculturation towards American orientation. Those who were older demonstrated a lower level of attachment anxiety and a lower level of acculturation towards American orientation. Furthermore, the participants were categorized into four acculturation groups based on the degree of the identification with

their culture of origin and the host culture: *integration, assimilation, separation, and marginalization*. The result found that a majority of the participants belonged to the *integration* group and the *separation* group. 48% were in the *integration* group; another 48% were in the *separation* group; 3.3% were in the *assimilation* group; less than 1% were in the *marginalization* group. In other words, nearly half of the participants were capable of identifying strongly with both Chinese and American cultures. Another half of the participants tended to identify strongly with Chinese culture than American culture. Among these four acculturation groups, individuals who were in the *integration* group and the *assimilation* group demonstrated a higher level of psychological well-being. However, no significant differences of psychological well-being were found among these four groups, indicating that the levels of acculturation to both the culture of origin and the dominant culture were not the significant factors for psychological well-being in Chinese/ Taiwanese immigrants.

Limitations

This study has several limitations that ought to be considered when interpreting its results. First, web-based online survey, used as a way of convenient sampling, can be biased in the sampling process in this study. For example, from the demographic information of the participants, a majority of participants were highly educated, with 47% of them with a master's degree and 26.5% with a Ph.D. degree. The participants of the study might merely represent a selective group of Chinese/ Taiwanese immigrants who were highly educated and were avid users of the Internet who were capable of completing online survey. Therefore, the generalization of this sample to overall Chinese/Taiwanese immigrants in the United States may be inappropriate.

Second, the insignificant findings of the moderating effects of acculturation towards Chinese orientation and Asian cultural values might be the result of a lack of sufficient power with the current sample rather than a reflection of the true relationships of the variables examined. Previous researchers pointed out that the power of tests of moderation with two continuous variables tends to be low (McClelland & Judd, 1993). In this study, the independent variables (attachment anxiety and attachment avoidance) and the dependent variable (psychological well-being) were all continuous variables, which may influence the possibility of detection the moderating effects among these variables.

Moreover, the low reliability of the scale for adult attachment, the *Experiences in Close Relationships-Short Form (ECR-S)*, may reflect the issue whether this measure is suitable for the use of this population. The original *ECR* scale was developed and validated mainly in the White participants and the modified *ECR-S* was also mainly validated with White samples. It should be cautioned that the Western-based self-report attachment measurement might not be culturally valid when applying to other cultures. For example, the wording of the items in the *ECR-S* may convey different meanings to Chinese/ Taiwanese immigrants given the fundamental differences of cultural values between Western and Asian cultures.

Another limitation to this study was that all measures used in this study were based on self-report format that may be vulnerable to common method biases, such as *halo effect* and *social desirability*. The halo effect occurs when a participant's response to a previous question serves as a trigger for determining responses to subsequent questions (Podsakoff et al., 2003). For example, the participants of this study might answer the first few questions and then generated the overall impression of the study, which might influence how they answered the rest of the

questions in the survey. In addition, social desirability may be another method bias. For example, the participants might tend to present themselves in a favorable light, regardless of their true feelings about certain questions. Researchers addressed that the bias of social desirability may produce spurious relationships and mask the true relationships between the variables (Ganster, Hennessey & Luthans, 1983).

Additionally, although the bidimensional model of acculturation has benefited the researcher to conceptualize the process of acculturation within a bidimensional framework, some researchers have pointed out the limitations of this model (Dominelli 2002; Ngo, 2008). Instead of taking socio-cultural factors (e.g., race, ethnicity, gender, sexual orientation) into consideration among immigrants, the exclusive focus on immigrants' perceptions of their acculturation to the dominant culture and the adherence to their heritage culture in this model may potentially undermine the dominant-subordinate interactive process and may not be able to reflect a holistic socioeconomic reality on immigrants' acculturation process (Ngo, 2008). Future researchers are suggested take socio-cultural factors into consideration when applying Berry's bidimensional model or reconsider alternative models to examine the concept of acculturation in a more holistic way, such as Interactive Acculturation Model (Bourhis et al., 1997).

Implications for future research

In terms of the findings in this study, several implications for future research directions were suggested. First, due to the recruitment method used in this study, the findings of this study may not be appropriate to generalize to the overall Chinese/ Taiwanese immigrant population. Future research should consider adopting a more comprehensive method in order to obtain a more varied and representative sample of Chinese/ Taiwanese immigrant population. For example, a

broader representation of Chinese/ Taiwanese immigrants should be included in terms of education level, socio-economic status, age, and etc.

Second, the results of the study supported the moderating effects of acculturation towards American orientation on attachment anxiety and attachment avoidance in relation to psychological well-being. Further investigation on the factor of acculturation towards American orientation was recommended to continue to explore how this factor could possibly interact with other variables on immigration populations. Some other variables, such as psychosocial adjustment, sense of belongings and self-esteem, could be potentially examined as outcome variables in future research.

Third, the adult attachment scale (*ECR-S*), used in this study, may have limited cross-cultural validity (Wei et al., 2007). Further research should consider alternative culturally appropriate measures to assess adult attachment in the immigrant population. Wang et al. (2010) proposed a culturally-adjusted attachment model and developed a 22-item culturally-adjusted attachment instrument, the *Chinese Relatedness Scale (CRS)*. Although this scale was developed to assess adult attachment in the Chinese population, this measure has not been empirically validated by researchers yet. Furthermore, a lot of items in the *CRS* were found similar to another scale, *Asian Values Scale-Revised (AVS-R)*, which was intended to assess the degree of adherence to Asian cultural values. The issue of multicollinearity should be cautioned if these two scales were used in the same study. Further investigation on the validation of the *CRS* was suggested.

Implications for clinical practice

The results of the study showed that individuals with high levels of secure adult attachment

tended to have higher levels of psychological well-being. In addition, the level of acculturation towards American orientation, serving as a moderator, played a buffering role between attachment anxiety/ attachment avoidance and psychological well-being. In light of such findings, several clinical implications for treating the Chinese/ Taiwanese immigrant population were suggested. First, clinicians should be culturally sensitive and be mindful about the cultural differences between the host culture and the culture of origin for clients that may lead to different perspectives on the definition of secure attachment. For example, the concept of emotional interdependence among family members, being viewed as a way of secure attachment in clients' culture of origin, may be viewed as a manifestation of insecure attachment in Western cultures. The lack of multicultural competency might lead to the misunderstanding and overpathologizing of the clients' presenting problems and diagnoses. Clinicians should make efforts in enhancing their multicultural awareness and be capable of tailoring appropriate interventions into treatment for Chinese/ Taiwanese immigrants to foster their psychological well-being. For instance, for clients who recently immigrated to the United States, it is essential for clinicians to explore clients' values from their culture of origin and help them identify adaptive coping strategies which were coherent with their cultural values.

In addition, acculturation was shown to be an influential factor for immigrants' adult attachment and their psychological well-being. Particularly, acculturation towards American orientation was found to moderate the relationship between attachment anxiety/ attachment avoidance and psychological well-being. Such finding implied a positive effect of acculturation towards the host culture (American culture) and suggested that acculturation towards the host culture may actually have a buffering effect for immigrants to reduce the level of attachment

anxiety/ attachment avoidance so as to improve their psychological well-being. When working with immigrant populations, clinicians should be mindful about exploring acculturation issues that may help clients develop a better understanding of their identifications towards the host culture and the culture of origin during the acculturation process. In addition, it may also be helpful for clinicians to discuss adaptive coping strategies in response to clients' acculturative stress and to explore other indigenous coping strategies, particularly for those with lower levels of acculturation. For example, some Chinese/ Taiwanese immigrants tend to seek out family members or religious leaders for advice instead of therapy when experiencing psychological distress. Clients could benefit from learning practical ways of getting adjusted to the American culture and feeling fitting in the mainstream culture without compromising their values from their cultures of origin. For those with higher levels of acculturation and higher levels of education (e.g., the sample of this study), the perspective of seeking Western-based psychotherapy is assumed to be more acceptable. Such differences could lead to different clinical approaches for clinicians when working with different groups of immigrants. In sum, being multicultural sensitive and developing the skills to work in congruence with Chinese/ Taiwanese immigrants may help clinicians foster an empathic and nurturing environment and reduce the stereotyped impression of Western-based psychotherapy for clients.

Another finding of the study showed that both bicultural individuals and those who had a stronger identification with American culture tended to have a higher level of psychological well-being. Although assessing clients' acculturation level may help gain a better understanding of the clients, clinicians should avoid underestimating the complexity of the acculturation process and should be cautious about labeling clients into categories arbitrarily. For example, an

individual whom strongly identified with his/ her culture of origin may become bicultural over time. It is recommended that clinicians view acculturation as a continuous process rather than a static state so as to navigate the complex and multidimensional nature of an individual's acculturation process in relation to his/ her presenting issues in therapy.

Implications for training

Researchers indicated that multicultural training has the possibility of greatly influencing the development of social justice awareness for future mental health professionals, which could be rooted in coursework, research, practicum, and internship throughout the training (Vera & Speight, 2003). Researchers further highlighted the importance of the process of encouraging students to embrace a commitment to social justice in their future professional work. The present study not only addressed some important issues in the Chinese/ Taiwanese immigrant population, but continued to reflect a broader concept of social justice issues. Overall, the results of the study showed a significant negative correlation between adult attachment and psychological well-being. Acculturation towards American orientation was found to moderate the relationship between adult attachment and psychological well-being. Based on these findings, several implications for training were proposed. For educators, it is recommended to promote the discussions and dialogues on immigrants and acculturation issues from an attachment theory perspective and strive for the dedication in relevant research. Students' passion in attachment and mental health could be inspired through seminars and workshops, and be carried out through the participation of research teams and projects. For example, educators could inspire students regarding the importance of attachment on psychological well-being and encourage them to continue to explore other cultural factors which might moderate and/ or mediate the relations

between adult attachment and psychological well-being.

For clinical supervisors, it is recommended to be reflective of multicultural sensitivity and be mindful about clinicians' cultural biases when working with trainees in a supervision setting. For instance, when trainees worked with immigrant populations, especially with those whose cultures of origin were very different from the dominant culture, supervisors are suggested help trainees explore the clients' presenting problems from a multicultural perspective and conceptualize the cases from an attachment theory perspective. It is essential for supervisors not only to help trainees ground their multicultural competency, but to provide a supportive and facilitating environment to examine trainees' implicit cultural biases with the clients. In addition, trainees are encouraged to explore how cultural factors might enhance or impede the therapeutic relationships so as to provide culturally appropriate interventions.

Conclusions

The results of the study revealed that Chinese/ Taiwanese immigrants overall demonstrated a moderate level of secure attachment and a high level of psychological well-being. They demonstrated a slightly higher level of Chinese orientation than American orientation. The test of the hypotheses found that attachment anxiety and attachment avoidance were negatively correlated with psychological well-being. In other words, individuals who had a higher level of attachment anxiety/ attachment avoidance tended to present a lower level of psychological well-being. Such finding was consistent with previous studies, which implied a significant negative connection between adult attachment and psychological well-being. In addition, age was negatively correlated with attachment anxiety and acculturation towards American orientation. This suggested that older immigrants demonstrated a lower level of attachment anxiety and a

lower level of acculturation towards American orientation. Furthermore, the test of moderating effects of acculturation towards American orientation on the relations between attachment anxiety/ attachment avoidance and psychological well-being yielded a significant finding in this study. Compared to acculturation towards Chinese orientation and Asian cultural values, acculturation towards American orientation was found to moderate the relationship between attachment anxiety/ attachment avoidance and psychological well-being. This finding offered the support to previous studies that highlighted the significance of acculturation to the US in relation to psychological distress and psychosocial adjustment on Asian samples (Wang & Mallinckrodt, 2006; Patel, 2008). In addition, in Kao & Thompson's study (2003), the level of acculturation to the host culture was found highly correlated with the level of education that was in line with the participants' educational backgrounds in the present study. This may suggest that, for highly educated Chinese/ Taiwanese immigrants, acculturation towards American orientation appeared to be more emphasized during the acculturation process, which may help them feel more connected to the mainstream culture so as to get adjusted to the new environment and improve their psychological well-being. Overall, the present study explored adult attachment and acculturation issues in Chinese/ Taiwanese immigrants and addressed the importance among adult attachment, acculturation and psychological well-being. It is hoped that the findings of the study will inspire researchers and clinicians for future investigation and practice.

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Appendix A
Demographic Questionnaire

INSTRUCTION: This questionnaire is designed to obtain demographic information. Please check the answer corresponding to the appropriate response or provide a specific response.

1. What is your gender?

Male

Female

Transgender

Other (please specify)

2. What is your age?

3. How long have you resided in the United States?

Less than 1 year

1-5 years

6-10 years

11 years above

Other (please specify)

4. What is your immigration status?

Permanent residence (green card)

Naturalized U.S. citizen

Other (please specify)

5. What is your primary language used at home?

English

Mandarin Chinese

Taiwanese

Cantonese

Other (please specify)

6. What is your marital status?

Single (never married)

In relationship

Married

Divorced

Other (please specify)

7. What is your highest level of education completed?

High school

Bachelor

Master

Ph.D.

Other (please specify)

Appendix B

Experiences in Close Relationship Scale-Short Form (ECR-S)

Instruction: The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by circling how much you agree or disagree with it. Mark your answer using the 7-point rating scale.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

1. It helps to turn to my romantic partner in times of need.
2. I need a lot of reassurance that I am loved by my partner.
3. I want to get close to my partner, but I keep pulling back.
4. I find that my partner(s) don't want to get as close as I would like.
5. I turn to my partner for many things, including comfort and reassurance.
6. My desire to be very close sometimes scares people away.
7. I try to avoid getting too close to my partner.
8. I do not often worry about being abandoned.
9. I usually discuss my problems and concerns with my partner.
10. I get frustrated if romantic partners are not available when I need them.
11. I am nervous when partners get too close to me.
12. I worry that romantic partners won't care about me as much as I care about them.

Appendix C

The modified Acculturation Rating Scale for Mexican Americans (modified ARSMA-II)

Please use the following 5-point scale to circle your response that best applies to your situation.

1	2	3	4	5
Not at all	Not very often	Moderately	Very often	Almost always

1. I speak Chinese.
2. I speak English.
3. I enjoy speaking Chinese.
4. I associate with Caucasians.
5. I associate with Chinese/Taiwanese.
6. I enjoy listening to Chinese language music.
7. I enjoy listening to English language music.
8. I enjoy Chinese language TV.
9. I enjoy English language TV.
10. I enjoy Chinese language movies.
11. I enjoy English language movies.
12. I enjoy reading (e.g. books) in Chinese.
13. I enjoy reading (e.g. books) in English.
14. I write (e.g. letters) in Chinese.
15. I write (e.g. letters) in English.
16. My thinking is done in English.
17. My thinking is done in Chinese.

18. My contact with Chinese/Taiwanese has been...
19. My contact with Caucasians has been...
20. My father identifies himself as Chinese/Taiwanese.
21. My mother identifies herself as Chinese/Taiwanese.
22. Growing up, my friends were of Chinese origin.
23. Growing up, my friends were of Caucasian origin.
24. My family cooks Chinese food.
25. My friends now are of Caucasian origin.
26. My friends now are of Chinese origin.
27. I like to identify myself as a Caucasian American.
28. I like to identify myself as a Chinese/Taiwanese American.
29. I like to identify myself as a Chinese/Taiwanese.
30. I like to identify myself as an American.

Appendix D

Asian Values Scale-Revised (AVS-R)

INSTRUCTIONS: Use the following 4-point scale to indicate how much you agree or disagree with the values described in each statement.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

1. One should not deviate from familial and social norms.
2. Children should not place their parents in retirement homes.
3. One need not focus all energies on one's studies.
4. One should be discouraged from talking about one's accomplishments.
5. Younger persons should be able to confront their elders.
6. When one receives a gift, one should reciprocate with a gift of equal or greater value.
7. One need not achieve academically in order to make one's parents proud.
8. One need not minimize or depreciate one's own achievements.
9. One should consider the needs of others before considering one's own needs.
10. Educational and career achievements need not be one's top priority.
11. One should think about one's group before oneself.
12. One should be able to question a person in an authority position.
13. Modesty is an important quality for a person.
14. One's achievements should be viewed as family's achievements.

15. One should avoid bringing displeasure to one's ancestors.
16. One should have sufficient inner resources to resolve emotional problems.
17. The worst thing one can do is to bring disgrace to one's family reputation.
18. One need not remain reserved and tranquil.
19. One should be humble and modest.
20. Family's reputation is not the primary social concern.
21. One need not be able to resolve psychological problems on one's own.
22. Occupational failure does not bring shame to the family.
23. One need not follow the role expectations (gender, family hierarchy) of one's family.
24. One should not make waves.
25. One need not control one's expression of emotions.

Appendix E

The Well-being subscale in Mental Health Inventory (MHI)

INSTRUCTIONS: Please read each question and circle one statement that best describes how things have been for you during the past month. There are no right or wrong answers.

1. How happy, satisfied, or pleased have you been with your personal life during the past month?

- 1 Extremely happy, could not have been more satisfied or pleased
- 2 Very happy most of the time
- 3 Generally, satisfied, pleased
- 4 Sometimes fairly satisfied, sometimes fairly unhappy
- 5 Generally dissatisfied, unhappy
- 6 Very unsatisfied, unhappy most of the time

2. During the past month, how much of the time have you felt that the future looks hopeful and promising?

- 1 All of the time
- 2 Most of the time
- 3 A good bit of the time
- 4 Some of the time
- 5 A little of the time
- 6 None of the time

3. How much of the time, during the past month, has your daily life been full of things that were interesting to you?

- 1 All of the time
- 2 Most of the time
- 3 A good bit of the time
- 4 Some of the time
- 5 A little of the time
- 6 None of the time

4. How much of the time, during the past month, did you feel relaxed and free from tension?

- 1 All of the time
- 2 Most of the time
- 3 A good bit of the time
- 4 Some of the time
- 5 A little of the time
- 6 None of the time

5. During the past month, how much of the time have you generally enjoyed the things you do?

- 1 All of the time
- 2 Most of the time
- 3 A good bit of the time
- 4 Some of the time
- 5 A little of the time
- 6 None of the time

6. During the past month, how much of the time have you felt loved and wanted?

- 1 All of the time
- 2 Most of the time
- 3 A good bit of the time
- 4 Some of the time
- 5 A little of the time
- 6 None of the time

7. When you have got up in the morning, this past month, about how often did you expect to have an interesting day?

- 1 Always
- 2 Very often
- 3 Fairly often
- 4 Sometimes
- 5 Almost never
- 6 Never

8. How much of the time, during the past month, have you felt calm and peaceful?

- 1 All of the time
- 2 Most of the time
- 3 A good bit of the time
- 4 Some of the time
- 5 A little of the time
- 6 None of the time

9. How much of the time, during the past month, were you able to relax without difficulty?

- 1 All of the time
- 2 Most of the time
- 3 A good bit of the time
- 4 Some of the time
- 5 A little of the time
- 6 None of the time

10. How much of the time, during the past month, did you feel that you love relationships, loving and being loved, were full and complete?

- 1 All of the time
- 2 Most of the time
- 3 A good bit of the time
- 4 Some of the time
- 5 A little of the time
- 6 None of the time

11. How much of the time, during the past month has living been a wonderful adventure for you?

- 1 All of the time
- 2 Most of the time
- 3 A good bit of the time
- 4 Some of the time
- 5 A little of the time
- 6 None of the time

12. How much of the time, during the past month, have you felt cheerful, lighthearted?

- 1 All of the time
- 2 Most of the time
- 3 A good bit of the time
- 4 Some of the time
- 5 A little of the time
- 6 None of the time

13. During the past month, how much of the time were you a happy person?

- 1 All of the time
- 2 Most of the time
- 3 A good bit of the time
- 4 Some of the time
- 5 A little of the time
- 6 None of the time

14. How often, during the past month, have you been waking up feeling fresh and rested?

- 1 Always, every day
- 2 Almost every day
- 3 Most days
- 4 Some days, but usually not
- 5 Hardly ever
- 6 Never wake up feeling rested

Appendix F

Table 11: Hierarchical multiple regression analyses of moderating effects of Acculturation on the relations between Adult Attachment and Psychological Well-being when demographic variables were controlled

Hierarchical step/variable	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	Change in <i>R</i> ²	ΔF	<i>Df</i>	<i>B</i>	SE	<i>B</i>	<i>t</i> (90)
1. Demographic variables (model 1)	.23	.05	.02	.05	1.62	7, 204				
2. Main variables (model 2)	.39	.15	.10	.10	4.70**	5, 199				
3. Interaction variables (model 3)	.44	.19	.12	.04	1.52	6, 193				
Final Model										
Demographic variables (block 1)										
Age							.12	.12	.09	1.00
Gender							1.80	1.69	.07	1.07
Length of residence in the US							.07	1.18	.01	.06
Immigration status							-1.33	1.23	-.07	-1.08
Primary language used at home							.24	.96	.02	.25
Relationship status							-.12	1.25	-.01	-.10
Education level							1.10	.95	.08	1.15
Main effects (block 2)										
Attachment Anxiety							-.38	.15	-.18	-2.54**
Attachment Avoidance							-.70	.23	-.24	-3.02**
Acculturation towards American orientation							.84	1.47	.04	.57
Acculturation towards Chinese orientation							-2.18	1.60	-.10	-1.36
Asian Cultural Values							-.63	3.31	-.01	-.19
Interactions (block 3)										
Attachment Anxiety x Acculturation towards American orientation							-.60	.29	-.16	-2.12*
Attachment Avoidance x Acculturation towards American orientation							1.04	.43	.19	2.42*
Attachment Anxiety x Acculturation towards Chinese orientation							-.25	.29	-.07	-.85
Attachment Avoidance x Acculturation towards Chinese orientation							.24	.45	.04	.53
Attachment Anxiety x Asian cultural values							-.38	.63	-.04	-.61
Attachment Avoidance x Asian cultural values							.39	.86	.03	.45

Note. *N*=215. **p* < .05 ***p* < .01