

Acculturation and Mental Health in Chinese Immigrant Youth

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## ABSTRACT

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The dissertation investigated the relationship between acculturation, acculturative stress, locus of control, and perceived social support on the mental health of Chinese immigrant adolescents. Study participants included 81 first generation Chinese immigrant adolescents. Mental health was operationalized using the BASC emotional symptoms index and somatization score. As hypothesized, acculturative stress and perceived parental support were significant predictors of both emotional symptoms and somatization. Locus of control and perceived peer support were significant predictors of emotional symptoms only, while acculturation was not a significant predictor of either emotional symptoms or somatization. Furthermore, the results suggested that locus of control and social support had a direct impact on mental health outcomes, rather than an indirect, stress buffering role. Future research and study implications are discussed.

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## Chapter 1

### Introduction

Results of the 2000 U.S. Census revealed that one in five U.S. residents are either foreign-born or first generation immigrants, numbering a total of 56 million (U.S. Bureau of the Census, 2000). As the population of immigrants increases, it has become an important public health issue to study their mental health and to elucidate the relationship between acculturation and mental health. Furthermore, the rise in the adult immigrant population has led to a huge increase in the number of school-aged children who are either first or second-generation immigrants. In 2001, one in 15 schoolchildren was reportedly born outside the United States, and one in seven spoke a language other than English in the home (Northwest Regional Educational Laboratory, 2001). First and second-generation immigrant youth may be vulnerable to mental and physical health problems because in addition to dealing with age appropriate developmental tasks, they face acculturative stressors and the challenge of having to reconcile two, often disparate cultures. Some of the typical psychosocial problems encountered by immigrant and ethnic minority youth include language difficulties, ethnic identity issues, discrimination, school dropout and inter-generation conflict between the values and beliefs of their parents (Yeh, 2003). They may also have to deal with the acculturative stress of adapting to their new culture as well as grief over leaving their native culture (James, 1997). The multiple challenges faced by these youngsters have made it increasingly imperative to train school personnel to understand the unique needs of immigrant youth and to provide them with culturally sensitive interventions. School psychologists and counselors have a particularly important role in providing mental health services to this population because they are often unable to afford seeing a professional psychologist in private settings (Yeh, 2004). Furthermore, James (1997) postulates



that parents of immigrant youth are more open to having their children counseled in a school setting, rather than in a traditional mental health environment. Thus, school psychologists may often be in the unique position of serving as the sole advocates and providers of mental health services for immigrant youth and families.

Within this surge in U.S. immigration, Asians represent one of the fastest growing immigrant groups in the country. According to U.S. Census data, there were an estimated 13.5 million Asians living in the United States in 2004, approximately 5% of the total population (U.S. Bureau of the Census, 2004). Although Asians comprise a significant proportion of the U.S. population, there are relatively few studies investigating the acculturation and mental health of this highly heterogeneous group. The prevalence of psychopathology remains under studied in this population in part because of the “model minority” stereotype of Asian immigrants which incorrectly assumes they are well-adjusted and academically successful (Kim & Yeh, 2002). In reality, this stereotype puts Asian immigrant youth at risk of being overlooked by mental health professionals, despite having a variety of social emotional problems and stressors. The prevalence of psychopathology in Asian immigrants may also be underestimated because this population tends to underutilize mental health services, relying instead on the social support of family and friends (Yeh & Wang, 2000). This is attributable to a variety of factors including cultural values emphasizing the importance of family and interdependent relationships, cultural taboos surrounding mental illness, and basic lack of knowledge regarding the concept of mental health services (Sue, 1994; Sue & Sue, 1999). Studies suggest that even if Asian Americans do enter mental health treatment, they are more likely than their Caucasian peers to terminate after one session (Sue & McKinney, 1975; Sue & Sue 1974). Within this highly diverse group of Asian immigrants, those of Chinese ancestry represent the largest proportion. According to 2005

Census Bureau data, there are a total of 3.3 million Asians of Chinese descent living in the United States (U.S. Bureau of the Census, 2005).

*Summary of dissertation*

The main purpose of the dissertation was to investigate the relationship between variables that have not received adequate prior attention in the literature, specifically, acculturation, acculturative stress, locus of control, and perceived social support on the mental health of Chinese immigrant adolescents. Mental health, as measured by the Behavioral Assessment System for Children and Adolescents--Self Report (BASC SRP) served as the dependent variable in this study. Specifically, mental health was operationalized by the Emotional Symptoms Index and the somatization subscales of the BASC-SRP. Acculturation served as an independent variable and was assessed using the Asian American Multidimensional Acculturation Scale (AAMAS), a multidimensional acculturation scale designed to separately assess involvement in Chinese and U.S. cultures. Acculturative stress was assessed using the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist (CADDC). The Nowicki Strickland Locus of Control Scale for Children (Nowicki & Strickland, 1973) was used to assess the locus of control orientation of the participants. Finally, perceived social support of parents and peers was measured with the Inventory of Parent and Peer Attachment (IPPA)—Revised version.

Multiple hypotheses were tested. Based on the results of previous studies with Asian immigrants, high levels of involvement in mainstream European-American culture, and low involvement in the culture of origin were predicted to be associated with better mental health in the sample. Acculturative stress was hypothesized to be another predictor of mental health. Specifically, those individuals with high levels of acculturative stress were predicted to demonstrate worse mental health than those with lower levels of acculturative stress. Two

variables, locus of control and perceived social support, were hypothesized to be related to mental health. Given the previous literature demonstrating that an internal locus of control is typically associated with better mental health, Chinese immigrant adolescents with an internal locus of control were predicted to demonstrate better mental health than those with an external locus of control. Furthermore, given the previous literature on the role of perceived social support in improving mental health, it was hypothesized that Chinese immigrant adolescents with higher levels of perceived social support from parents and peers would demonstrate significantly better mental health than those with lower levels of perceived support. No hypothesis was made regarding the differential role of parental vs. peer social support, because there is not enough previous literature with this population. Furthermore, the study tested whether locus of control and perceived social support moderate the relationship between acculturative stress and mental health indirectly, by buffering (e.g.; reducing) the effects of acculturative stress. No hypothesis was made in this area because of the mixed findings in the previous literature. Finally, the study investigated whether there was a three-way interaction between social support, locus of control and acculturative stress to examine if social support demonstrates a different pattern of buffering for individuals of internal versus external locus of control. Once again, no specific hypothesis was made regarding this relationship because there is not enough previous literature in this area.

## Chapter 2

### Review of Research

#### *Acculturation: Definitions and Theories*

*Definitions.* Acculturation has been described as “the process in which individuals negotiate two or more cultures” (Yeh, 2003). Acculturation is viewed as a dynamic and fluid process where the immigrant is in a perpetual state of cultural negotiation with his new environment, and must frequently change his behavior and/or language to fit the social setting (Sam, 2000; Yeh et al., 2005; Yeh & Hwang, 2000). Acculturation can also be defined as “changes in an individual’s behavior, social and work activities, thinking patterns, values and self-identification as a result of contact with another culture” (James, 1997). The acculturation process is multidimensional and complex. It involves many different constructs including ethnic identity, beliefs, values, attitudes and behaviors. According to Berry et al. (1987), psychological acculturation refers to the internal changes an individual experiences when undergoing the acculturation process. These changes occur on multiple levels including physically, biologically, culturally, socially and in terms of psychological well-being. Specifically, Berry (1980) explains that the psychological impact of acculturation leads to changes in language, identity, cognitive style, personality, attitudes and acculturative stress. Acculturation is often described as being a stressful process because the immigrant moves to a new culture already possessing potentially conflicting values and roles from their native culture.

Acculturative stress is defined as the stress related to transitioning and adapting to a new environment. Acculturative stress is distinct from general life stress and hassles and impacts the psychological, somatic and social aspects of individuals who are experiencing acculturation (Berry, Kim, Monde & Mok, 1987). Berry’s acculturative stress theory (Berry, 1997) was

conceptualized from Lazarus and Folkman's (1984) stress and coping model. According to Berry et al. (1987), an optimal level of acculturative stress may actually be adaptive, serving to motivate and facilitate an individual's adjustment to his new environment. However, high levels of acculturation stress, which exceed the individual's coping capacity, is considered detrimental and thought to be the main mechanism for psychological distress among the immigrant population. Acculturative stress has been found to reduce adjustment and well-being of immigrant youth (Yeh, 2003; Ying & Han, 2006) and has been linked to psychological symptoms including depression, anxiety, psychosomatic problems, cultural marginality, poor self-concept, and career indecision (Berry, 1997; Berry & Sam, 1997; Hwang et al., 2005; Roysircar-Sodowsky & Maestas, 2000). The acculturation process has also been associated with having feelings of helplessness, less self-confidence, and experiencing role conflicts and new behavioral customs (Naditch & Morissey, 1976; Torbiorn, 1982). Finally, it is important to note that migration itself (and the resulting acculturative stress) does not automatically result in psychological problems. Rather, the relationship between acculturative stress and mental health is moderated by both social and personal factors.

*Theories of Acculturation.* Berry's acculturation framework, referred to above, included a variety of both situational and individual factors that are involved in the acculturation process, serving as moderators between acculturation and mental health. The model also describes variables that may serve as "buffers" in the reduction of acculturative stress in the migrant. First of all, societal factors of both the host culture (e.g., prevailing attitudes, level of social support for immigrants) and the native culture (e.g., political and economic context) influence the acculturation of the migrant. For example, when studying the mental health of immigrant populations, the tolerance and prevailing attitudes of the dominant culture toward cultural

differences should be considered. Migrants living in an assimilationist society have been found to have more mental health problems than those who live in a more inclusive, multicultural society (Berry, 1980). Another moderating variable is the nature of the acculturating group. For example, individuals who migrated voluntarily (e.g.; immigrant) have less mental health problems than those who migrated involuntarily, such as refugees (Berry et al., 1987). Third, the migrant's acculturation strategy (e.g.; assimilation, integration, separation, marginalization) influences their mental health. (Acculturation strategies will be described in more detail below.) Fourth, demographic and social variables of the migrant moderate the acculturation-stress relationship (Berry et al., 1987). This includes the individual's age, gender, socio-economic status (including both education and employment) and generational status. For example, several studies have found that first generation immigrants experience significantly higher levels of acculturative stress than second or third generation immigrants (Sodowsky, Lai & Plake, 1991; Padilla, Wagatsuma, & Lindholm, 1985). Studies also suggest that immigrants who are of higher SES are more accepted by the host culture, demonstrate better mental health and less acculturative stress (Barona & Miller, 1994; Kuo & Roysircar, 2004). Finally, the psychological traits of the migrant were identified as another important variable in examining acculturation outcomes. This includes factors such as coping strategies and cognitive style as well as personality characteristics such as locus of control, extraversion, self-efficacy and self-esteem (Schwarzer, Hahn & Schroder, 1994; Ward & Kennedy 1992, 1993). For example, better self-esteem is associated with better mental health.

Berry's model postulates that the immigrant may adopt four types of strategies to deal with the acculturation process: assimilation, integration, separation and marginalization (Berry, Kim, Power, Young & Bujaki, 1989). Assimilation involves rejection of one's cultural values in

favor of entrance to the dominant cultural practices. It has also been conceptualized as the “process by which an individual develops a new cultural identity” (LaFromboise et al., 1993). Integration, on the other hand, involves maintaining one's cultural identity and participating in the dominant culture's values. Integration has also been referred to as “biculturalism.” Separation refers to the preference of one's own cultural norms and not participating in the cultural norms of the dominant culture. Finally, marginalization is a strategy where one neither participates in one's own or the dominant group's cultural practices. In contrast to the former strategies, marginalization is considered to be an unconscious choice, which occurs when “individuals are out of cultural contact with both their heritage culture and the larger society” (Neto, 2001). While Berry did not originally claim that one acculturation strategy was developmentally more adaptive than another, research has since revealed that integration is the most adaptive strategy while marginalization was found to be least adaptive (Berry et al., 1987). Assimilation and Separation are thought to fall somewhere in between (Berry, 1997; Berry & Sam, 1997). Furthermore, Berry recognized that there are differences in acculturation strategies of native peoples, ethnic groups, immigrants, and refugees (Berry, 1995). It was hypothesized that differences in acculturation strategies depended also on whether the migration was voluntary, as well as the degree of movement and the length of contact with the host culture (Berry et al., 1987). Studies have suggested that psychological and psychosomatic symptoms are the lowest for immigrant groups, at intermediate levels in sojourners (e.g., short-term visitors), and the highest in refugees who are more often exposed to trauma and therefore more susceptible to developing psychopathology (Berry et al., 1987). An immigrant's preferred acculturation strategy is impacted both by individual and societal factors. For example, in the past, immigrant children were encouraged to assimilate into U.S. culture, whereas today mental health experts are

more frequently encouraging immigrant youth to develop an integrated sense of self by embracing both cultures simultaneously. This strategy seeks to promote integration or bicultural competence as recent research has stressed the importance of gaining bicultural competence in order to thrive in multiple cultural contexts (LaFromboise et al., 1993).

Bicultural competence has been described in the alternation model of second culture acquisition (LaFromboise et al., 1993). The alternation model of second culture acquisition proposes that there is a bidirectional and orthogonal relationship between the individual's native and second culture. This model focuses on the role of the individual in choosing how they will interact with their native and new cultures. Moreover, it assumes that rather than having to choose between two cultures, an immigrant can identify with several different cultures, which are considered of equal status, and alternate his/her behavior to fit the specific social context. As a result the immigrant can feel a sense of belonging to two separate cultures independently, without losing his/her sense of cultural identity (LaFromboise et al., 1993). In terms of the impact of biculturalism on mental health, it is hypothesized that individuals who can alternate their behavior to fit into the cultures which they are exposed to, will suffer less anxiety and stress than those undergoing assimilation. Indeed, studies with Asian and Hispanic-American high school students have revealed a positive correlation between self-esteem and the endorsement of an integrative acculturation strategy (Phinney, Chavira & Williamson, 1992). Relatedly, immigrant adolescents who have simultaneously high ethnic majority and minority identity have better self-esteem than those who have low identity on both these constructs (Sam & Virta, 2001).

#### *Research on Acculturation and Immigrant Youth*

Despite the growing population of first and second-generation immigrant youth, most of



the acculturation literature has focused on adult immigrants, with fewer studies investigating the impact of acculturation on children and adolescents (Roysircar-Sodowsky & Maestas, 2000; Sam, 2000). As a whole, the research on the mental health of immigrant youth shows the same variability as the literature with adult immigrants, and has not consistently confirmed that immigrant and ethnic minority children are at greater risk for psychological problems as compared to their host peers (Roberts, Roberts, & Chen, 1997; Virta & Westin, 1999). Results from a comparative study on acculturating youth suggest that the mental health of this population varies across different countries and also varies across ethno-cultural groups within each country (Virta, Sam, & Westin, 2004).

According to some U.S. researchers, children from immigrant families have generally positive adjustment as compared to their American born counterparts (Fuligni, 1998a). Acculturation to the U.S. has been implicated as a risk factor for unhealthy behaviors among Asian-American and Hispanic adolescents, including violence, substance abuse, risky sexual activity and obesity related behaviors such as fast food consumption and physical inactivity (Unger, Reynolds, Shakib, Spruijt-Metz, Sun, & Johnson, 2004). Indeed, some researchers in the U.S. have uncovered a phenomena termed as “the Immigrant Health Paradox” to describe a health advantage, including both better mental and physical health and less risk behaviors, found among first generation young immigrants as compared to U.S.-born Anglo-American adolescents. This health advantage seems to disappear over the generations as immigrants become more acculturated. For example, a study on Mexican American immigrants revealed that younger age of entry and greater number of years living in the U.S. is associated with higher levels of psychiatric disorders, and furthermore that the level of assimilation into U.S. society was positively correlated with increases in psychiatric morbidity (Vega, Sribney, Aguilar-

Gaxiola & Kolody, 2004). Another study on this population also found that foreign born Mexican Americans and foreign born non-Hispanic whites were at significantly lower risk of substance use, mood and anxiety disorders as compared to their U.S. born counterparts (Grant et al., 2004). Overall, many studies have found that foreign born adolescents who immigrate to the U.S. at an older age have better physical health and fewer behavioral difficulties than those who immigrated at a younger age (Fuligni, 1998a). Researchers have also investigated protective factors that promote adjustment and psychological well-being among immigrant youth. For example, studies have revealed that high ethnic regard enhances psychological well-being of immigrant youth of Chinese and Mexican ethnicities (Kiang, Yip, Gonzales-Bracken, Witkow & Fuligni, 2006). Furthermore, psychosocial characteristics of immigrant families, such as their emphasis on education and familial obligation, may keep immigrant youth from participating in risky activities (e.g., sexual activity, drug use) and enhance their adjustment (Fuligni, 1998a).

While some studies have found a protective health benefit of being a first generation immigrant, others have revealed that youth with immigrant backgrounds demonstrate poorer mental health as compared to their Caucasian peers and are at higher risk for school failure, psychosocial and adjustment problems and thrill seeking behaviors such as drug use. For example, one recent study revealed that Asian-American adolescents have “an overall lack of social connectiveness,” lower self-esteem and higher levels of social isolation as compared to their Caucasian peers (Rhee, Chang, & Rhee, 2003). Another study conducted in Norway found that male adolescents with an immigrant background reported more psychological distress and less social support than their “host” peers (Oppendal & Roysamb, 2004). Other research has suggested that immigrant children and adolescents may be at increased risk of developing mental health problems, particularly if they are refugees (Fazel & Stein, 2003; James, 1997). For

example, a recent study completed in the United Kingdom found that a significantly greater number of refugee children (more than a quarter) had substantial psychological disturbances as compared to indigenous Caucasian children and non-refugee ethnic minority children (Fazel & Stein, 2003).

As demonstrated by the previously discussed research, there has been a good deal of variation in the acculturation literature and researchers have put forth many explanations for the variability (Nguyen, Messe, & Stollak, 1999). Proposed reasons include differences in culture-based experiences, values or beliefs as well as variability in pre-morbid risk factors across different immigrant groups. Furthermore, it is imperative to also take into account the economic and political circumstances under which the immigrant group arrives into the host country (e.g., political refugee seeking asylum vs. an educated professional who immigrated voluntarily) and the associated differences in acculturative stress. Other reasons for the variability in the literature include differences in the way acculturation is defined, conceptualized and operationalized as well as differences in how adjustment (or mental health) is defined and operationalized. For example, previous acculturation theories, and their corresponding scales of measurement, were criticized for their unidimensional, linear nature, whereas more recent theories and scales have emphasized the multidimensional, dynamic nature of acculturation. The unidirectional view of acculturation basically equates acculturation with assimilation, with the minority group relinquishing their traditional cultural beliefs, values, customs and behaviors and adopting those of the majority culture (Sodowsky, Lai & Plake, 1991). While acculturation is now viewed as a multidimensional, bidirectional process, a recent review of the literature on acculturation and mental health in Asian immigrant populations concluded that overall, studies on Asian immigrants still continue to emphasize unidirectional, unidimensional acculturation models

(Talang & Lauderdale, 2003). For example, some researchers have defined acculturation as equivalent to assimilation or “Westernization” (Talang & Lauderdale, 2003). Others have used non-scale measures such as place of birth, English proficiency, generational status, or age at immigration as a proxy for acculturation, failing to capture the true complexity of the process.

Adjustment and mental health have also been defined and measured in many different ways across the literature; for example, as collective self-esteem, individual self-esteem, general life satisfaction, or level of pathological symptoms such as depression or anxiety. These differences in definition may be another reason for the variability in the literature. Furthermore, there has been criticism of the use of an ethnocentric, primarily Western based definition of mental health, with non-Western populations. This is problematic because the meaning and interpretation of mental health is embedded in a cultural framework, and there are cross-cultural differences in the conception and manifestation of mental illness (Fabrega, 1982). For example, researchers have argued that there is cross cultural variation in the conceptualization of depression (Lee, Kleinman, & Kleinman, 2007; Ying, Lee, Tsai, Yeh, & Haung, 2000), as illustrated by a recent study which examined the experiences of depression among Cantonese Chinese adults. The researchers found that this population demonstrates a wide range of experiences (e.g., distress of social disharmony, preverbal pain, sleeplessness) that are not incorporated into our current psychiatric textbooks and diagnostic systems (Lee et al., 2007). Furthermore, several studies have demonstrated that the expression of mental health and psychopathology changes with acculturation. Specifically, researchers have reported changes in the conceptualization of depression, (Ying et al., 2000) affect (Liem, Lim, & Lien, 2000) and self reported health and stress (Tang, Solomon, & McCracken, 2000; Uppaluri, Schumm, & Lauderdale, 2001) as a result of acculturation. Awareness of these issues is crucial when

performing cross cultural research and when studying the mental health of Asian immigrants.

### *Research on Asian Immigrant Youth*

As previously stated, Asian immigrants represent one of the fastest growing minority groups in the United States (Lui, Pope-Davis, Nevitt, & Toporek, 1999). In addition to being very heterogeneous with almost 30 distinct ethnic groups (e.g.; Chinese, Japanese, Korean, Vietnamese, Filipino, Cambodian, Asian Indian, Pacific Islander, etc) the Asian population is also relatively young. According to 2005 Census Bureau data, the Asian population had a median age of 33.2 years, and 26% were under the age of 18 (U.S. Bureau of the Census, 2005). However, despite their large and youthful population, there have been relatively few studies on first and second generation Asian youth, and even less on Chinese immigrant children and adolescents. Possible reasons for the relative dearth of research on this population may be due to the fact that Asian immigrants and Asian Americans are often perceived as the “model minority.” The model minority stereotype has been criticized for several reasons. First, the stereotype incorrectly assumes that Asians are a homogeneous group (Kim & Yeh, 2002), when in fact they are very diverse in terms of their countries of origin, race, language, culture, SES, educational attainment and immigrant experience (Chui & Ring, 1998; Ho, 1992). Furthermore, the model minority stereotype minimizes the pathology in the Asian community, pressures Asian immigrant youth to fulfill a narrow stereotype, and gives the impression that Asian immigrants have few, if any, emotional problems, when in fact studies suggest that they have significant social and emotional difficulties (Sue, Sue, Sue & Takeuchi, 1995). Asian immigrant youth have been found to exhibit problems including juvenile delinquency, school dropout, and involvement in gangs (Chui & Ring, 1998; Sue et al., 1995). Furthermore, they are more likely than other ethnic minority groups to report experiencing peer discrimination (e.g. racial name calling,

threats), which is associated with lower levels of self-esteem (Fisher, Wallace & Fenton, 2000). Asian immigrant youth also experience a variety of acculturative stressors, including language and communication difficulties, unfamiliar customs and values, interpersonal difficulties, academic problems, discrimination and intergenerational family conflict (Yeh & Inose, 2002), which may put them at risk of developing mental health problems. In fact, suicide is the second leading cause of death in Asian American women between the ages of 15 to 24 (Centers for Disease Control and Prevention, 2003). Asian American women in this age group have the highest female suicide rates across all racial/ethnic groups (National Center for Health Statistics, 2003).

The following studies have investigated the acculturation and adjustment of Asian immigrant and Asian –American youth. This will be followed by a review of two variables found to be involved in the relationship between acculturation and mental health: locus of control and social support. Since there is relatively little research on Chinese immigrant youth, the literature review will also include studies on other Asian groups, such as the Vietnamese and Koreans.

*Research on the acculturation and adjustment of Asian immigrant youth.* Yeh (2003) conducted a study to investigate the association between age, acculturation, cultural adjustment difficulties and general mental health across a variety of Asian ethnic groups. Participants included 319 junior high and high school students who were Chinese, Japanese and Korean immigrants. The students were in grades 7-12 and 44% were Chinese, 39% Korean and 17% Japanese. All students were born in an Asian country and had lived in the U.S. for an average of 4.7 years. Mean age of the participants was 15 years with a range between 12-18 years old. The procedure involved administering self-report forms to the students to gather information on 1) demographic variables, 2) acculturation level, 3) cultural adjustment, and 4) mental health

symptoms. Specifically, demographic information included gender, age, grade, ethnicity, birthplace, and length of residence in U.S. The Suinn-Lew Asian-American Self-Identity Acculturation Scale (SL-ASIA; Suinn, Ahuna, & Khoo, 1992) was used to assess acculturation level on a Likert scale of 1-5 and the Cultural Adjustment Difficulties Checklist (CADC) was used to measure the stressors associated with acculturation. The dependent variable, mental health symptoms, was assessed using the Symptom Checklist-90-Revised, which provides information on both the number and the intensity of symptoms.

Results showed that the independent variables of age, acculturation and cultural adjustment difficulties were significant predictors of mental health symptoms. Gender, on the other hand, was not found to be a significant predictor. Furthermore, with respect to the effect of age, older students reported more mental health symptoms. The author hypothesized that this may be due to the fact that older immigrant students may be more aware of racism, have increased parent-adolescent conflicts and also have more pressure to form a cohesive identity than younger adolescents. In terms of the effects of acculturation, American identified Asian youths reported fewer mental health symptoms than those who were more Asian-Identified. In other words, the students who were reportedly more assimilated to American culture demonstrated better mental health than those who were less assimilated. Furthermore, cultural adjustment difficulties, specifically, acculturative stress, were found to be the strongest predictor of mental health status in the sample. Yeh concluded that youth who experience cultural stress such as feeling caught between two cultures, feeling alienated from both cultures, and having interpersonal conflicts with other races, can lead to mental health problems. Finally, results revealed that Korean immigrants have higher levels of mental health symptoms than Chinese and Japanese immigrants. Possible reasons cited for the unusually high prevalence of mental health

symptoms among Koreans included the cultural stigma associated with seeking help for conflicts (Yeh, 2003).

Nguyen, Messe, and Stollak (1999) conducted a study on Vietnamese youth to investigate the association between acculturation and adjustment using a bidimensional model. This study sought to develop a more in-depth way of measuring acculturation by separately assessing involvement in both U.S. and Vietnamese culture. Adjustment was measured across personal, interpersonal and achievement domains and acculturation was measured as separate levels of involvement in the native and host cultures. One hundred eighty two Vietnamese youth were recruited from 8 junior high and high schools in Michigan. Students were in grades 6-12, with a mean age of 15 years and a range of 10-23 years. Eighty percent of participants were born in Vietnam and about 20% were U.S. born. The authors hypothesized that involvement in U.S. culture would predict positive adjustment among the youth and involvement in Vietnamese culture was also hypothesized to predict positive adjustment, specifically for family relationships and self-esteem. It was further hypothesized that involvement in U.S. culture would predict positive adjustment more strongly than Vietnamese culture, in all areas except family involvement.

The method involved collecting demographic data such as number of years of residence in the U.S., perceived Vietnamese and English language ability, education and employment status of parents. Acculturation level was assessed using the Acculturation Scale for Vietnamese Adolescents, developed by the first author to separately assess the respondents' involvement in Vietnamese and American cultures. Four main domains were measured including a) lifestyles (e.g., food, music, media and language preference), b) group interactions with Vietnamese and Americans (e.g., "I feel at ease with Vietnamese people."), c) family orientation (e.g., "Children



should follow their parents' wishes about choosing a career, dating, etc...”), and d) global involvement (e.g., “As far as behaviors and values, I am Vietnamese.”). Adjustment measures included 1) the Brief Symptom Inventory to assess overall psychological symptom pattern, 2) Center for Epidemiological Studies-Depression Scale, a self report checklist, 3) the Rosenberg Self Esteem Scale, and 4) academic achievement using the student's cumulative GPA. A parent/family relations measure was also included using a nine-item, Likert questionnaire that assessed the quality of the youth's relationship with their family.

Results of the study revealed that involvement in the U.S. culture predicted positive functioning across all three adjustment domains: personal, interpersonal and achievement. Furthermore, an unexpected result was found where overall involvement in the Vietnamese culture was negatively related to personal adjustment. Involvement in the Vietnamese culture predicted positive family relationships only, but overall it was related to higher levels of psychological distress, with a non-significant trend found toward higher depression and lower self-esteem. Because of the generally negative association found between involvement in Vietnamese culture and mental health, results of this study suggested that biculturality is not the most adaptive option for immigrant youth. Rather, involvement in the dominant culture and less involvement in the immigrant's native culture was found to be the most psychologically adaptive (Nguyen et al., 1999).

Another study compared the levels of acculturation, communication patterns and self-esteem in Asian and Caucasian American youth (Rhee, Chang & Rhee, 2003). Participants included ninety-nine Asian Americans and 90 Caucasian Americans who attended high school in a major U.S. city. Roughly equal numbers of students were from each grade level, ranging from age 13-18 years (mean age of 15.5). Approximately 52% of the Asian students were U.S. born

and 80% of them were Chinese. The foreign born Asian participants were mainly from Taiwan, Hong Kong, mainland China, Japan, Korea, and India. Information was collected on demographic/social variables (e.g., age, gender, family income, GPA, etc.), level of acculturation (using the Acculturation Behavior Scale for Adolescents), self esteem (via the Rosenberg Self Esteem Scale) and perceived openness of parental-child communication. Results revealed that although both groups grew up in the same neighborhood, significant differences were found between the behavioral patterns, social support networks, family contexts and self esteem level of the Asian-American versus the Caucasian American adolescents. Self-esteem was found to be significantly lower in the Asian American adolescents as compared to Caucasian American adolescents and furthermore, it was found to be positively correlated to acculturation level. Finally, as compared to the Caucasian group, Asian adolescents reported having more difficulty expressing themselves to their parents and also had significantly fewer friends than their Caucasian peers.

Another study examined the prevalence of psychiatric symptoms in Chinese American children living in New York City's Chinatown (Chang, Morrissey & Koplewicz, 1995). Participants included 181 students ranging from ages 5-17 years, with a mean age of 11. The mean number of years spent in the U.S. was approximately 9 years, although 6% of the students lived in the U.S. for 3 years or less. The authors asked the parents of these students, who were mainly of lower middle class SES, to complete a translated version of the Child Behavior Checklist (CBCL) and then compared the results with American norms (Achenbach, 1991). The authors hypothesized that there would be an inverse relationship between the amount of time spent in the U.S. and the number of psychiatric symptoms. Specifically, they expected that the more recent immigrants would exhibit higher levels of distress as compared to later immigrants.

They also hypothesized that the symptom scores for Chinese Americans would be lower than those of American children, because Chinese American children would exhibit fewer symptoms and/or their families would under-report their symptoms. Results of the study supported the second hypothesis with the Chinese American children reportedly exhibiting significantly lower Total Problem, Internalizing and Externalizing scores than American norms. (In particular, the Aggressive Behavior scale was found to be significantly lower.) Notably however, the first hypothesis was not supported, as recent immigrants did not have higher symptom scores than those who immigrated earlier. The authors reasoned that this finding may be partly due to the relatively small number of recently immigrated students in their sample (i.e., low statistical power).

Zhou, Peeverly, Xin, Huang, and Wang (2003) examined the academic and behavioral school adjustment of first generation Chinese-American adolescents and compared them with their peers in both the United States and Mainland China. The authors sought to answer two questions: 1) Do Chinese-American adolescents differ in terms of their academic and behavioral adjustment relative to their American and Mainland Chinese peers, and 2) If Chinese-Americans do differ, to what extent is their academic adjustment related to their behavioral adjustment? To answer these questions, the authors recruited 410 junior high school students. One hundred and six were first generation Chinese-American adolescents living in New York City. This group was comprised of 60 males and 46 females with a mean age of 12 years, 4 months. Group two consisted of 131 European American children (mean age of 12 years, 5 months) recruited from the same schools as their Chinese American peers, and two Catholic schools. Finally, the third group was comprised of 120 adolescents from Mainland China (mean age of 13 years, 3 months) who were recruited from two suburban schools in southeast China. The primary measure was the

Behavioral Assessment System for Children-Self Report of Personality (BASC-SRP), a questionnaire which evaluates a child's self reported behaviors and perceptions, providing an index of general social-emotional functioning (Matzow & Kamphaus, 2001). Selected subscales of interest were used including the School Maladjustment composite which measures areas such as attitude to school and teachers and feelings of inadequacy. To assess behavioral functioning, the authors used the Emotional Symptoms index which assesses feelings of depression, anxiety and social stress. In addition, the acculturation level of the Chinese-Americans was assessed using the SL-ASIA (90% were found to have Asian identification) and a semi-structured clinical interview was conducted with all participants to further assess academic and social adjustment.

Results of the study revealed that contrary to the model-minority stereotype, Chinese Americans reported high levels of internalized distress and difficulties adjusting to their academic environment. They viewed school more negatively than their Mainland Chinese peers and reported more negative feeling towards their teachers than both other groups. Furthermore as compared to European American students, Chinese American adolescents were significantly more likely to perceive themselves as inadequate. Specifically in terms of internalizing behaviors, Chinese American adolescents reported significantly higher levels of depression, anxiety and social stress than their Mainland Chinese peers, and higher levels of depression and social stress relative to their European American peers. Furthermore, Chinese Americans felt that they were excluded from social activities and they lacked a support network at school. In contrast to the European Americans and Mainland Chinese adolescents, the Chinese-American students rarely sought help from their teachers or peers. The authors concluded by highlighting the importance of providing adequate mental health services for Asian-American students and raising cultural awareness among school administrators, students and teachers towards their

interpersonal interaction style involving humility, introversion and conformity (Zhou et al., 2003).

In another study Yeh and Inose (2002) investigated the mental health issues and coping strategies of 274 Asian immigrant high school and junior high school students. Participants included Chinese (42%), Japanese (17%) and Korean (41%) students, ranging in age from 12 to 18 years (mean age 15.96 years). Information was collected on cultural adjustment difficulties and coping strategies using an open ended questionnaire. Results showed that most of their problems were based on cultural differences between Asian and Western culture. All three groups reported problems with communication, unfamiliar customs and values, interpersonal relationships, and academics/career issues. They also reported difficulties with discrimination, loneliness, and intergenerational conflicts, although to a lesser extent. Notably, Chinese students were significantly more likely than Japanese and Korean students to have communication difficulties. In terms of coping strategies, social support seeking was found to be the top strategy, followed by keeping to oneself and engaging in creative activities. Finally, implications of the study findings are discussed. The authors noted that since many of the problems experienced by immigrant youth were associated with cultural differences, it is important for psychologists to also assess the acculturation level of this population. Furthermore, given the collectivist cultural values of Asian immigrant youth and their reliance on social support as a coping strategy, psychologists can be encouraged to use social support networks when working with this population (Yeh & Inose, 2002). In a separate study, Yeh and her colleagues found that Asian immigrant youth are “constantly negotiating across or coping with various environments (i.e. school, family, and peer relations), and they often shift their identity and value systems according to the norms of these differing settings” (Yeh et al., 2005). For example, Korean

youth negotiate between school and home by shifting in their appearance (e.g. style of dress), language (e.g. Korean vs. English), cultural values and activities (Yeh et al. 2005) to fit the setting. They also participate in different culturally appropriate activities with their Korean and American friends. This cultural negotiation may be particularly stressful and difficult for Asian American and Asian immigrant youth, who often report feeling caught between two different cultures, each with their own unique expectations, values and roles (Yeh et al., 2005).

Kuo and Roysircar (2004) investigated the predictors of acculturation and acculturative stress for Chinese adolescents living in Canada. Participants included 506 adolescents who were between the ages of 12 and 19 years (mean age of 16.5 years). There were three different cohorts: The “early immigrant” group was comprised of both Canadian and foreign born adolescents who immigrated to Canada before completing elementary school. “Late immigrants” came to Canada after completing elementary school and “internationals” included non-immigrant adolescents who held student visas in Canada. Acculturative stress was assessed using the CADAC and acculturation was assessed with the Minority-Majority Relations Survey (MMRS; Sodowsky et al. 1991). Results showed that both SES and English reading ability predicted acculturative stress. Specifically, better English reading ability and higher SES were related to lower levels of acculturative stress. The authors suggested that higher SES serves as a buffer against acculturative stress, particularly for the early immigrants. Conversely, acculturation was predicted by SES, English reading ability, age at the time of arrival to Canada, and length of stay in Canada. Higher levels of acculturation were associated with migration at a younger age, longer length of residence in Canada, higher SES, and greater English reading proficiency. Furthermore, as expected, a significant negative relationship was found between acculturation and acculturative stress. Early immigrants were the most acculturated group and had the least

acculturative stress, the late immigrants and the international group showed higher (and comparable) levels of acculturative stress (Kuo & Roysircar, 2004). These findings were in line with previous research on acculturative stress which demonstrate that recent immigrants have higher levels of acculturative stress than second-generation immigrants (Padilla et al., 1985; Sodowsky et al., 1991). Sodowsky and colleagues (1995) argued that acculturative stress is highest for first generation Asian Americans because of the large amount of disparity between Asian and Western culture.

Chiu and Ring (1998) sought to identify the acculturative stressors of both Chinese and Vietnamese immigrant adolescents. Participants included 90 Chinese and Vietnamese immigrants between the ages of 15 to 19 years. They had been living in the U.S. (Los Angeles area) for a minimum of 3 years, with a mean of 5.1 years for Chinese sample, and a mean of 6.9 years for the Vietnamese sample. Negative life events, acculturative stress, academic performance, behavior problems and psychological distress were measured for all participants. Behavior problems was operationalized as the Social Problems, Delinquent and Aggressive Problems subscales of the Child Behavior Checklist (CBC; Achenbach, 1991), while psychological problems was based on the Depression and Anxiety subscales of the CBC. For the Chinese group, acculturative stress accounted for 49% of the variance in psychological distress, and 36% of the variance in behavior problems, controlling for the influence of demographic variables. Specifically, intragroup stress was the most significant source of stress in the Chinese sample. Intragroup stress is defined as the pressures from one's own racial group, as well as challenges to group commitment and racial identity (Prillerman, 1988). Interestingly, there was no association between minority student stress and adaptive outcomes in the Vietnamese sample, but negative life events had a significant positive association with their academic achievement.

These findings reveal that Asian immigrant youth experience a variety of acculturative stressors that impact their mental health and behavior, and that the pattern of these stressors differs according to ethnicity.

Finally, Noh and Avison (1996) studied the relationship between acculturative stress, psychological resources and social resources in first generation Korean immigrants. Social support included that coming from within the community as well as outside of the community. Results demonstrated that social support from outside the community did not influence immigrant mental health, but social support from one's own ethnic group did. Also, demographic variables of age, gender, and length of residence did not influence immigrants' mental health.

#### *Locus of Control and Perceived Social Support*

As previously discussed, the present study examined the role of two variables, locus of control and perceived social support, as moderators in the relationship between acculturative stress and mental health. Specifically, the study investigated if these variables had a stress buffering role on the mental health of Chinese immigrant youth. The stress-buffering model claims that the moderating variable (e.g.; social support, locus of control) "buffers" or protects an individual from the potentially negative impact of stress on mental health (Cohen & Wills, 1985). The buffering relationship is primarily applicable for individuals who are under high levels of stress and stands in contrast to the main-effect model, which claims that these variables have an overall beneficial effect on well being, regardless of stress level. In the stress buffering model, it is hypothesized that social support may reduce stress by either altering one's cognitive appraisal of stressors, influencing coping patterns, or by affecting self-perceptions (Cohen & Wills, 1985).



*Locus of Control.* Locus of control (LOC) can be defined as a person's perception of the underlying forces that determine events, either internal factors such as one's own behaviors or external factors such as fate, luck, and God. Thus, individuals with an internal locus of control perceive positive and negative events as being under their personal control, while those with an external locus of control believe that these events are not contingent on their behavior. Locus of control has frequently been researched as a personality variable that is associated with mental health, including self-esteem, mood, psychopathology, and general life satisfaction (Ward & Kennedy, 1992). It has also consistently been demonstrated as having a stress-moderating effect in studies with non-immigrant children and adolescents (Cauce, Hannan & Sargeant, 1992; Kliwer & Sandler, 1992; Kim, Sandler, & Tein, 1997; Luthar, 1991). Many studies have found a significant relationship between locus of control and psychological adjustment, with an internal locus of control generally associated with better mental health and an external locus of control related to worse mental health (Dyal, 1984). This finding has also been replicated cross-culturally with Chinese adolescents (Lui, Kurita, Uchiyama, Okawa, Liu, & Ma, 2000), Chinese immigrant adults (Kuo, Gray, & Nin, 1979; Kuo & Tsai, 1986; Seipel, 1988) and Asian/Chinese migrant youth (Hung, 1974; Leung, 2001b). Lui et al. (2000) explained that "an internal locus of control may serve a protective function by affecting appraisals of stressful situations, coping efforts or both." For example, impact of stressful life events may be reduced for those with an internal locus of control because they may be more likely to believe they can control the outcome of these events. Individuals with an internal locus of control may also use more effective coping strategies, thereby reducing the potentially negative impact of stress on their mental health. Furthermore, locus of control has also been demonstrated to influence whether social support has a direct or stress buffering role on mental health outcomes. Several previous studies with non-

Asian populations have found that individuals with an internal locus of control demonstrated stress-buffering effects, while those with external locus of control orientations did not (Cummins, 1988; Lefcourt, Martin, & Saleh, 1984). Researchers have hypothesized that this may be because internals and externals use social support differently (Liang & Bogat, 1994).

Some studies have examined the cross-cultural feasibility of locus of control and have found similar patterns and high concurrent validity across both Chinese and American cultures (Lao, 1977). Lao, for example, concluded that locus of control “may be tapping into some basic psychological dimension across both cultures” (Lao, 1977, p.113). The locus of control variable is particularly relevant to the immigrant population as studies have suggested that ethnic minorities may view themselves as lacking power and unable to maintain control over their daily lives. Research has demonstrated that ethnic minorities tend to have an external locus of control (Trimble & Richardson, 1982), which is often associated with poorer mental health. For example, Searle and Ward (1990) found that an internal locus of control was associated with better psychological adjustment in a study of Malaysian and Singaporean students in New Zealand. However, the findings on psychological adjustment and locus of control during cross-cultural transitions are still inconsistent and inconclusive (Ward & Kennedy, 1992). Ha (1999), for example, did not find a significant relationship between locus of control and psychological distress in Vietnamese refugees and immigrants.

Furthermore, some cross-cultural researchers have considered the association between external locus of control and mental health difficulties as overly simplistic (Ward & Kennedy, 1992). Given that locus of control is highly influenced by culture, these researchers have suggested that the impact of locus of control on psychological adjustment should be viewed within the sociocultural context (Church, 1982; Ward & Kennedy, 1992). The locus of control

literature has also been criticized for its ethnocentric bias (Dyal, 1984; Sue & Sue, 1990; Ward & Kennedy, 1992; Yang, 1986) and researchers have argued that in some cultures, an external locus of control may actually be adaptive. For example, Dyal (1984) suggested that in Asian countries that follow Karmic philosophies, a problem solving approach of “giving up” may serve to reduce stress and may therefore have a positive impact on mental health. Additionally, research has shown that locus of control is affected by cultural values such as collectivism and individualism. Asians are more collectivist oriented and typically have a more external locus of control than European Americans who are more individually oriented (Hui, 1982; Leung, 2001b). However, researchers have pointed out that although Asians are generally more externally oriented as compared to Europeans, they do not demonstrate worse mental health during cultural transitions and therefore the association between external and adjustment difficulties should be questioned (Ward & Kennedy, 1992). These cross-cultural issues are important to consider when studying the role of locus of control on the mental health of Asian immigrants. Researchers should be cautioned not to over-generalize the relationship between external locus of control and mental health difficulties to non-Western populations.

There have been several explanations for the increased external locus of control orientation seen in Asian cultures. Tatarodi and Swann (1996) explained that in collectivist cultures, people tend to defer to the wishes of others, thereby decreasing their perceived self-control and choices, which are related to locus of control. An external locus of control orientation is also in line with the belief in fate and destiny, which are an important part of traditional Chinese cultural values, and are echoed throughout Chinese classics and the teachings of Confucius (Kuo et al., 1979). Similarly, research has shown that Chinese students are less internal than American students (Crittenden, 1996) and that as Chinese immigrants become more

acculturated to American culture, they develop a more internal locus of control orientation (Kuo, Gray & Lin, 1979; Hsieh et al., 1969). Demographic variables such as age, gender, SES and education have also been researched as locus of control antecedents in Asian cultures. For example, Asian females generally have a more external locus of control than males, probably due to socialization factors (Hui, 1982).

One of the earliest studies on locus of control in the Chinese immigrant population examined the relationship between locus of control and psychological distress among Chinese-American adults (Kuo, Gray, & Lin, 1979). The study also investigated the impact of other variables including gender, SES, marital status, social support of kinship/friendships, assimilation and amount of life change. Participants included 121 men and 49 women ranging from under 30 to over 60 years of age. Twenty four percent of the sample was American born. Results showed that those individuals with an external locus of control had more psychological distress and than those with an internal locus of control, even when assimilation was used as a control variable. Specifically, individuals with an externally oriented locus of control had significantly higher scores on the two indices of mental health: the Psychiatric Impairment Index and CES Depression Scale. They exhibited higher levels of psychological distress including more symptoms of depression, low self-esteem, insomnia, headaches and anxiety. Furthermore, locus of control explained more of the variance (11%) in mental health than all the other variables. Interestingly, assimilation was not a predictor of mental health in the sample.

Another study investigated the relationship between four locus of control attributions (Internality, Powerful Others, Chance and God Control) and emotional functioning (depression, anxiety, self-esteem) in a group of Filipino American college students (Gordon, 1997). Powerful Others, Chance and God Control are three external locus of control orientations. The author

found that Chance and Powerful Others attributions predicted higher levels of anxiety and depression, while an Internality focus (e.g., internal locus of control) predicted better emotional functioning.

Leung (2001b) examined the variables associated with psychological adaptation of overseas and migrant students in Australia. Participants included 382 university students in Melbourne, Australia (e.g.; 189 Anglo-Australians, 72 second generation Southern-European migrants, 33 Asian migrant students, 33 Chinese migrant students and 55 Chinese overseas students). Psychological distress was measured using the Perceived Stress Scale (Cohen et al., 1983). The UCLA loneliness scale (Russell, Peplau, & Cutrona, 1980) was used to measure feelings of loneliness and satisfaction with social relationships. Finally, the authors obtained a subjective measure of participants' academic performance and satisfaction with university life. Overall, the variables of age, length of time in Australia, social self-efficacy, loneliness, locus of control, and Australian identification accounted for 37% of the variance in psychological distress. Specifically, age, internal locus of control and social self-efficacy were negatively related to psychological distress for all groups, while loneliness, chance and powerful others locus of control were positively related to psychological distress. For the migrant/overseas students in particular, an internal locus of control was negatively related to psychological distress, while loneliness and length of time in Australia was positively related to psychological distress. Cross-cultural differences in locus of control were also found, with the three Asian groups having a more external locus of control than the Anglo-Australians. Additionally, Chinese students were more external in their locus of control and more dissatisfied with their academic and social relationships than Anglo-Australian students. The authors explained this social dissatisfaction as the result of a loss of social support and decrease in social ties

experienced upon immigration. Notably, the Chinese migrant and overseas students were the loneliest, least socially confident and least satisfied with their academic standing as compared to the Anglo-Australians and the Southern-European migrant group.

Cheng (2003) examined the relationship between locus of control and self-concept in Chinese immigrant adolescents living in New York City. Participants included 123 first generation Chinese-American adolescents who were between grades 6-9. Locus of control was assessed using the Multidimensional Measure of Children's Perception of Control questionnaire. Results demonstrated that an unknown source of control was associated with difficulties in self-concept across multiple domains. (An unknown locus of control orientation is defined as when one does not know what causes outcomes to occur.) Specifically, adolescents with higher levels of unknown control reported lower levels of global, parent and physical ability self-concepts. Furthermore, for adolescents with a low level of unknown control, acculturation was positively related to academic self-concept and social self-concept with the opposite sex (Cheng, 2003).

Despite some evidence supporting the positive role of an internal locus of control, the findings on psychological adjustment and locus of control during cross-cultural transitions is still inconsistent and inconclusive (Ward & Kennedy, 1992). For example, Ha (1999), mentioned earlier, did not find a significant relationship between locus of control and psychological distress in Vietnamese refugees and immigrants. Ha incorporated both quantitative and qualitative methodologies to examine the acculturative challenges experienced by Vietnamese refugees and immigrants in the United States. Participants included 53 Vietnamese refugees and immigrants between the ages of 18 and 36. The quantitative analysis results revealed a negative correlation between the variables of locus of control and acculturation. Furthermore, 79% of the variability of psychological stress was accounted for by the variability in physical symptoms and number of

years in the United States explained 20% of the variability of psychological stress (Ha, 1999). However, there was no significant relationship between locus of control and psychological distress.

*Social Support.* Similar to the locus of control literature, the research on the stress-buffering role of social support has also been inconsistent (Liang & Bogat, 1994). Some studies have found that social support moderates the impact of stress by serving as a buffer (Caplan, 1974; Cohen & McKay, 1984). For example, Windle (1992) found that social support buffered the effects of stress on problem behaviors in nonimmigrant children and adolescents. However, other studies failed to show a stress buffering effect and demonstrated that social support has a direct, positive impact on mental health, regardless of stress level (Cohen et al., 1982; Lin, Simeone, Ensel & Kuo, 1979). Additionally, while many studies have investigated the role of social support in the acculturation process, and have examined the direct and buffering effects of social support in general, there has been relatively little research on the buffering relationship between social support and acculturative stress in particular (Lee et al., 2004). A thorough examination of the stress-buffering role of social support is of particular relevance to first generation immigrant youth who often must cope with high levels of acculturative stress without the natural support networks of their native country. Immigrant youth often leave behind all their friends and many/all of their family as they immigrate to a new country. Mallinckrodt and Leong (1992) explained that “not only is social support crucial in itself for positive well-being, but social support also provides a powerful coping resource for persons experiencing stressful life changes, including the stress of adjusting to a new culture” (p.71).

Parental and peer social support is one particularly important variable influencing the mental health of immigrant youth (Lee, Koseke, & Sales, 2004). Parental social support and

attachment has been demonstrated to be a critical factor associated with psychological well-being in adolescents (Raja, McGee & Stanton, 1992). However, before discussing the literature on parental social support for Chinese immigrant youth, it is important to recognize that youth from Asian backgrounds have different family relationships than those from European backgrounds in order to appreciate the impact of these relationships on the mental health of this population (Hardway & Fuligni, 2006; Greenfield, Keller, Fuligni & Maynard, 2003). Parental attachment and socialization have an important role among Asian immigrants (Huntsinger, Jose & Larson, 1998), but in contrast to European American families who value autonomy and independence in adolescence, Chinese families have been found to be more control oriented (Chui, Feldman & Rosenthal, 1992) and more interdependent (Feldman & Rosenthal, 1990). This is in line with Chinese cultural values, which emphasize the importance of family cohesion, family obligations, academic achievement, and filial piety (Chao & Tseng, 2002; Feldman & Rosenthal, 1990). For example, a recent study investigated family connectedness among adolescents of Chinese and European backgrounds. They found that family connectedness involved a stronger emphasis on family obligation and assistance for adolescents from Chinese backgrounds, particularly those from immigrant families (Hardway & Fuligni, 2006). Furthermore, given the emphasis Chinese families place on academic achievement (Chao & Tseng, 2002), Chinese American adolescents' family obligation and connectedness took the form of spending more time studying after school. As Asian parents strive to retain the values and traditions of their homeland and to pass down these values to next generation, their children are likely to be acculturating to American society faster than their more traditional parents (Chao, 2000). These generational differences in rates of acculturation often result in intergenerational conflict between Asian parents and their children (Roysircar-Sodowsky & Maestas, 2000). In fact, intergenerational conflict between parents and



children is one of the most common difficulties experienced by Asian immigrant and Asian American youth, and is often a source of stress in immigrant families (Fuligni, Tseng, & Lam, 1999; Lazarus, 1997). Common issues include disagreements over adherence to family values, expectations and traditions and disagreements over youth authority and autonomy (Fuligni, 1998b; Lee, Choe, Kim & Ngo, 2000). Furthermore, studies with low income Chinese immigrant youth have found changes in family structure and dynamics upon immigration as well as reversal of the traditional parent and child roles which served to exacerbate intergenerational conflicts (Yeh, Pituc, Kim & Atkins, 2008). For example, immigrant children were found to take on multiple roles and responsibilities including serving as a translator for their parents, providing childcare for their younger siblings, and working to help support the family. Studies have shown that intergenerational conflict in Asian American families is associated with lower levels of family satisfaction, decreased well being and increased somatic distress (Lee, Su, & Yoshida, 2005). The unique issues encountered by Asian immigrant families and the resulting intergenerational conflict that they often experience, may play a crucial role in their mental health.

Peer social support is another area where Asian immigrant youth may be at risk. In Western culture, peer social support is seen as one of the most important parts of adolescent development and mental health. However, Asian immigrant youth report experiencing a variety of peer-related social difficulties, including discrimination, stereotyping, and social isolation (Fisher, Wallace & Fenton, 2000; Zhou et al., 2003). For example, East Asian high school students reported a higher level of peer discriminatory distress, than those of African American, Hispanic, South Asian and non-Hispanic white descent (Fisher, Wallace & Fenton, 2000). Furthermore, perceived discrimination in both educational and peer contexts was in turn

associated with lower self-esteem and with higher rates of depression (Grossman & Liang, 2006). Yeh et al. (2008) found that Chinese immigrant youth reported having feelings of invisibility, defined as having one's abilities, self worth and personal qualities overlooked or ignored as a result of others' prejudice. The following articles discuss the direct and stress-buffering roles of social support on the mental health of Asian immigrant youth. Some studies with Asian adults will also be included to supplement the discussion.

While many of the studies have found evidence for the direct effects of social support on mental health (Lin et al., 1979), several studies have also found a stress buffering effect of social support. For example, Jou and Fukada (1997) examined perceived, received and needed support in a sample of Chinese students in Japan and found that perceived and received social support buffered the impact of stress on somatic complaints. Choi (1997) investigated the role of social support and acculturative stress in predicting depression among Korean Americans.

Unfortunately, not much information was presented on the sample, except that participants were aged 19 and above and lived in New Orleans. Social support involved measuring the perceived availability of potential social support resources. Results demonstrated that low levels of social support were associated with high levels of acculturative stress and depression. Furthermore, social support was found to alleviate acculturative stress. Specifically, social support served as a moderator by decreasing depressive symptoms. There were no gender differences in the level of stress or depression of the sample.

Lee et al. (2004) examined the buffering role of social support in moderating the relationship between acculturative stress and mental health in Korean international students. Participants included 74 students between the ages of 19 and 41 (mean of 30) who were enrolled in a U.S. university. The average length of time in the U.S. was 31 months. The researchers

measured acculturative stress, perceived social support, acculturation, and psychological distress and symptoms. Psychological distress was measured using the Brief Symptom Inventory (BFI; Derogatis & Melisaratos, 1983) and acculturation was measured using an abridged version of the SL-ASIA (Suinn et al., 1987). Results showed that acculturative stress significantly predicted mental health symptoms, with those who experienced higher levels of acculturative stress experiencing worse mental health. Specifically, the most commonly reported symptoms were feeling lonely, sad and anxious. Social support was found to have a stress buffering effect, where students with high levels of both acculturative stress and social support experienced less mental health symptoms than students with low levels of support. Notably, the buffering relationship only applied to those students with a high level of acculturation and no main effect was found between social support and mental health.

Another study investigated social support and acculturative stress in a sample of Korean and Indian immigrant adolescents (Thomas & Choi, 2006). Participants resided in the U.S. from 4 months to 20 years (mean of 12 years) and ranged in age from 10 to 20 years (mean 14 years). Over 86% rated themselves as “very good” or “excellent” in speaking English. Social support from parents, friends, organizations, and religious and cultural activities was assessed using an open-ended questionnaire. In terms of acculturative stress, results demonstrated that participants often reported feeling that they were “different,” feeling like they didn’t belong anywhere, and that they were both ridiculed and overlooked because of their appearance and ethnicity. Notably, participants reported using friends (97.5%) and parents (87.3%) in coping with acculturative stress. Friends were rated as the most important source of social support, and parents were the second most common source. Females reported having significantly more support from friends than did males and older students were less likely to receive support than younger ones. Notably,

a significant relationship was found between acculturative stress and social support, where students with higher levels of acculturative stress reported lower levels of social support. Furthermore, the level of acculturative stress was negatively correlated with both parental social support and social support obtained from organizational activities. However, while both sources served as buffers in reducing adolescents' acculturative stress, parental social support was the most important predictor of acculturative stress. These findings underscore the importance of promoting family cohesion and reducing intergenerational conflict to help Asian immigrant adolescents cope with acculturative stress.

While these previous studies have investigated the buffering role of social support on acculturative stress in particular, others have investigated the role of social support on general life stress. For example, Leung (2001a) conducted an investigation of the sociocultural and psychological adaptation of Chinese migrant adolescents in Australia and Canada. The dependent variables included academic achievement, parent-child conflict, and general life stress, which together operationalized the construct of psychological adaptation. Social support was assessed using the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987). Stress was measured using the General Health Questionnaire, a measure of general life stress, as opposed to acculturative stress. Participants included 75 Chinese-Canadian (ages 13-19; mean of 16 years) and 92 Chinese-Australian high school students (ages 12-21; mean of 15 years). The Chinese-Canadians were mostly born in Hong Kong, however 11 were born in Canada. The mean length of residence in Canada was 5.96 years. In comparison the Chinese-Australians were a more diverse group in terms of country of birth. Only 3 were born in Australia, and their overall mean length of residence was 5.6 years.

The results demonstrated that social support was the most important factor influencing

the adaptation (e.g. academic achievement, parent-child conflict, and stress) of both groups. Social support was positively related to academic achievement and negatively related to parent-child conflict among the Chinese-Canadians, and was negatively related to stress in the Chinese-Australians. Moreover, in the Chinese-Canadian sample, academic achievement was positively associated with the presence of both parents. Overall, stress and parent-child conflict were related to situational variables (e.g.; social support) rather than societal variables (e.g.; auspices of immigration), but academic achievement was related to both kinds of variables. Furthermore, academic achievement was negatively related with parental conflict and stress and this interrelationship was stronger for the Chinese Canadian sample. Leung suggested that this may be due to the presence of a larger Chinese community in Canada which may reinforce the Chinese emphasis on education, and Chinese values of academic achievement as being a child's duty. She argues that academic achievement issues have a greater potential to cause stress and parent-child conflicts in such an environment.

Finally, an interesting study by Liang and Bogat (1994) investigated the stress buffering model of social support in a cross cultural study of Chinese nationals from mainland China and Anglo-American students at a Midwestern university. Although this study does not specifically examine Asian immigrant youth, it yielded many important findings on the relationship between social support and locus of control across Chinese and American cultures. Liang and Bogat investigated if locus of control affects how support is used across cultures, and predicted that locus of control would influence the stress-buffering effects of social support. Participants were between 18-28 years of age, and completed measures of social support, locus of control, life hassles, and psychological adjustment. Both perceived social support and received social support were measured and adjustment was evaluated using the General Health Questionnaire

which evaluated both physical and psychological symptoms.

Results showed that the Chinese and Anglo-Americans utilized support in different ways. Generally speaking, social support had greater stress buffering effects for the Anglo-Americans than for the Chinese. Furthermore, locus of control was found to mediate the stress buffering impact on adjustment for both groups, once again in different ways. Specifically, for Anglo-Americans a stress buffering effect was seen only for those with an internal locus of control, which was in line with previous research (Cummins, 1988; Lefcourt et al., 1984; Sandler & Lakey, 1982). However, social support (received and perceived) was neither directly or indirectly beneficial for Chinese nationals with an internal locus of control. For Chinese nationals with an external locus of control, received support actually had a negative stress buffering effect on mental health, while perceived support showed both main and stress buffering effects. Importantly, these findings suggest that social support and locus of control have different effects across Chinese and American culture. Additionally, both perceived and received social support had different effects on mental health across cultures. For Anglo Americans, received support has a more indirect, stress buffering impact on adjustment, while perceived support was directly beneficial (e.g.; main effect). In contrast, for the Chinese received support was associated with greater negative adjustment during periods of high stress. Also, perceived availability of support had a greater positive effect (direct main effect) than the actual receipt of support for the Chinese. The authors argue that this pattern of findings demonstrates that the notion of adaptive behavior is culturally dependent. Specifically, given that Chinese cultural values of coping with stress often involve the use of self-directed coping strategies (e.g.; controlling oneself), rather than seeking help from others, for them, the act of receiving support from others may cause distress by making them feel that they are “losing face.”

*Summary*

As first and second-generation immigrants, Asian youth are confronted with the process of acculturation, which has potentially negative implications on their mental health. Research has shown that Asian American youth are more likely than their Caucasian American peers to report having school difficulties, depression, feelings of inadequacy and low self esteem (Rhee et al., 2003; Zhou et al., 2003). Furthermore, Asian-American students are more likely to experience a variety of social difficulties including having fewer friends, feeling excluded from social activities, experiencing peer discrimination, lacking a support network at school and having difficulty communicating with their parents (Fisher et al., 2000; Rhee et al., 2003; Zhou et al., 2003). Researchers have begun to investigate the relationship between acculturation and mental health in Asian immigrant and Asian-American youth and while the results are variable, multiple studies have challenged the idea that a bicultural orientation is associated with better psychosocial adjustment. Rather, they have found that higher levels of assimilation in European-American culture is linked with better overall mental health, including stronger self-esteem, better social functioning and lower levels of depression. Moreover, several studies which used bidimensional measures of acculturation have found that for Asian-Americans, involvement in European-American culture predicts positive functioning across personal, interpersonal and achievement domains, while involvement in one's Heritage culture does not.

Furthermore, the research demonstrates that Asian immigrant youth experience a variety of acculturative stressors, including language and communication difficulties, unfamiliar customs and values, interpersonal difficulties, academic problems, peer discrimination and intergenerational family conflict which may put them at risk of developing mental health problems (Yeh & Inose, 2002). First generation Chinese immigrant youth most commonly report

experiencing communication difficulties (Yeh & Inose, 2002) and intragroup social stress (Chiu & Ring, 1998). In addition, acculturative stress has been found to be positively associated with mental health difficulties in Chinese immigrant youth (Chui & Ring, 1998; Yeh, 2003).

However, acculturative stress does not automatically lead to adjustment problems. There are many variables thought to serve as moderators in the relationship between acculturative stress and mental health of the immigrant, including locus of control and social support.

Locus of control has consistently been shown to have a stress-moderating effect with non-immigrant children and adolescents (Cauce, Hannan & Sargeant, 1992; Kliewer & Sandler, 1992; Luthar, 1991), but an investigation of this stress-buffering role has been neglected in immigrant youth. Overall, the research suggests that an internal locus of control is generally associated with better mental health (Dyal, 1984). This pattern has been replicated cross-culturally with Chinese adolescents (Lui et al., 2000), Chinese immigrant adults (Kuo, Gray, & Nin, 1979) and Asian/Chinese migrant youth (Leung, 2001b). However, the cross-cultural research on locus of control is still inconsistent and inconclusive (Ward & Kennedy, 1992) and some studies have found no relationship between locus of control and mental health (Ha, 1999). The literature on the stress-buffering role of social support has also been inconsistent (Liang & Bogat, 1994). Some studies have demonstrated a stress-buffering role of social support on acculturative stress (Choi, 1997; Lee et al., 2004; Thomas & Choi, 2006). However, other studies fail to show a stress buffering effect and demonstrate that social support has a direct, positive impact on mental health, regardless of stress level (Cohen et al., 1982; Lin et al., 1979). Finally, locus of control has been shown to influence the stress-buffering effects of social support differently across Chinese and American cultures (Liang & Bogat, 1994).



### *Future Directions*

While there have been a reasonable number of studies on Asian immigrants as a whole, more studies are needed with Chinese immigrant youth particularly because contrary to their “model-minority” stereotype, this population may be more vulnerable to developing psychiatric disorders due to their relatively lower self esteem and higher social isolation as compared to Caucasian-American youth (Rhee et al., 2003; Zhou et al., 2003). More studies are needed with low income immigrant youth as much of the previous research has involved middle class and upper class populations (Yeh et al., 2008). Furthermore, although there are quite a few studies with Chinese-American and Chinese-Canadian adults and college students, additional studies are needed with adolescent immigrants. Adolescence is characterized by Erikson as a developmental stage of identity exploration and formation associated with feelings of vulnerability (Erikson, 1968). In Western cultures, adolescents struggle with issues of identity, autonomy, peer influence and parental separation (Erikson, 1968; Douvan & Adelson, 1966; Hill & Holmbeck, 1986). Adolescence may be a particularly challenging and vulnerable time for Asian immigrant youth given that the normal developmental issues associated with adolescence including difficulties with self-concept, identity, and conflicts with parents seem to be worsened with immigration (Ho, 1992). Indeed, some researchers have considered adolescence as a period when immigrant youth experience the greatest tension with the conflicting values of their parents, and are at highest risk for developing adjustment problems (Banchevska, 1981; Rosenthal, 1984; Sluzki, 1979). In light of the unique challenges and vulnerabilities associated with adolescence, the mental health of Chinese immigrant adolescents is an important area that should be further studied in the acculturation literature. This developmental period could be particularly stressful for Chinese immigrant youth as they are faced with the challenge of integrating their multiple,

often contrasting, cultural influences to form a cohesive identity.

Furthermore, more research is needed investigating the role of perceived social support on the mental health of Chinese immigrant adolescents. Specifically, very few studies have systematically measured perceived support of parents and peers and their differential impact on the mental health of Chinese immigrant youth (Wong, 2001). In Western cultures, peer relationships are particularly important during adolescence (Graziano & Ward, 1992). A thorough examination of both peer and parental social support is essential in light of the research findings demonstrating that Chinese American youth experience a gamut of social difficulties including feelings of exclusion, fewer friends, discrimination, and problems communicating with their parents. Social support could therefore serve as an important variable influencing the mental health of these youngsters, and may possibly play a role in the school difficulties seen in this population.

In addition, given the complex relationship between acculturation, acculturative stress and immigrant mental health, it is important to investigate the role of variables that may serve as moderators of this relationship. Social support and locus of control are two particularly relevant moderators for which the literature is still inconclusive. For example, there are mixed findings on whether social support has a direct, and/or indirect stress-buffering effect on mental health, as well as a relative dearth of studies examining the buffering role of social support on acculturative stress in particular. Therefore, it would be important to extend the literature by examining the stress buffering relationship of social support with first generation Chinese immigrant youth, who are more likely to be experiencing high levels of acculturative stress.

Another important moderating variable that needs further research is locus of control. The findings on psychological adjustment and locus of control during cross cultural transitions

are still inconsistent and inconclusive (Ward & Kennedy, 1992) and have been criticized for its ethnocentric biases when applied to collectivistic, Asian cultures. Furthermore, given that this variable has been demonstrated to have a stress-buffering role on non-immigrant youth (Luthar, 1991) it would be important to investigate whether this also applies to Asian immigrant youth undergoing acculturation. Most of the studies have investigated the direct impact of locus of control on the mental health of immigrant youth, and its potential role as a buffer for acculturative stress has been neglected. Finally, few studies have examined the combined roles of both individual (e.g.; locus of control) and environmental (e.g.; social support) variables in moderating the relationship between acculturative stress and mental health. Liang and Bogat's cross-cultural study (1994) demonstrated that the impact of social support on mental health was different depending on one's cultural background and locus of control orientation. Thus, a more comprehensive model of the relationship between acculturative stress and mental health may involve an investigation of the potential interactions between stress, locus of control and social support.

#### *Purpose of Dissertation*

The main purpose of the dissertation was to investigate the relationship between variables that have not received adequate prior attention in the literature, specifically, acculturation, acculturative stress, locus of control, and perceived social support on the mental health of Chinese immigrant adolescents. Mental health, as measured by the Behavioral Assessment System for Children and Adolescents--Self Report (BASC SRP) served as the dependent variable in this study. Specifically, mental health was operationalized by the Emotional Symptoms Index and the somatization subscales of the BASC-SRP. Acculturation served as an independent variable and was assessed using the Asian American Multidimensional

Acculturation Scale (AAMAS), a multidimensional acculturation scale designed to separately assess involvement in Chinese and U.S. cultures. Acculturative stress was assessed using the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist (CADDC). The Nowicki Strickland Locus of Control Scale for Children (Nowicki & Strickland, 1973) was used to assess the locus of control orientation of the participants. Finally, perceived social support of parents and peers was measured with the Inventory of Parent and Peer Attachment (IPPA)—Revised version.

Multiple hypotheses were tested. Based on the results of previous studies with Asian immigrants, higher levels of involvement in mainstream European-American culture, and lower involvement in the culture of origin were predicted to be associated with better mental health in the sample. Acculturative stress was hypothesized to be another predictor of mental health. Specifically, those individuals with higher levels of acculturative stress were predicted to demonstrate worse mental health than those with lower levels of acculturative stress. Two variables, locus of control and perceived social support were hypothesized to be related to mental health. Given the previous literature demonstrating that an internal locus of control is typically associated with better mental health, Chinese immigrant adolescents with a more internal locus of control orientation were predicted to demonstrate better mental health than those with a more external locus of control. Furthermore, given the previous literature on the role of perceived social support in improving mental health, it was hypothesized that Chinese immigrant adolescents with higher levels of perceived social support from parents and peers will demonstrate significantly better mental health than those with lower levels of perceived support. No hypothesis was made regarding the differential role of parental vs. peer social support, because there is not enough previous literature with this population. Furthermore, the study

tested whether locus of control and perceived social support moderate the relationship between acculturative stress and mental health indirectly, by buffering (e.g., reducing) the effects of acculturative stress. No hypothesis was made in this area because of the mixed findings in the previous literature. Finally, the study investigated whether there is a three-way interaction between social support, locus of control and acculturative stress to examine if social support demonstrates a different pattern of buffering for individuals of internal versus external locus of control. Once again, no specific hypothesis was made regarding this relationship because there is not enough previous literature in this area.

## Chapter 3

### Method

#### *Participants*

A total of 81 first generation Chinese immigrant adolescents between the ages of 12 and 17 years participated in the study (44 males and 37 females; mean age 13.9 years). See Table 1. All of the participants were born outside of the United States, with 95% born in China, 1% in Taiwan, 1% in Hong Kong and 2.5% in another country. On average, the participants were recent immigrants to the United States, having lived in the U.S. for an average of only 1.66 years (range 3 months to 12 years). Approximately 95% of participants' fathers and 93% of their mothers had a high school diploma or less. However, despite having low levels of education, most were employed (approximately 86% of fathers and 81% of mothers). Most participants lived with both of their parents (88%) with about 12% living with either their mother or their father. The participants were recruited from local schools and Chinese based organizations in the Boston and Washington DC areas. The majority of the participants were students at two Boston City public schools. A total of 87% and 80% (respectively) of the student population at these schools were classified as low-income. This was defined as the percentage of students who received free or reduced lunch. Furthermore, about half of the students at these schools spoke English as a second language (56% and 45% respectively), with about one third having limited English proficiency (38% and 32%, respectively). Approximately 20-25% of the students at these schools were Asian.

#### *Materials*

*The Behavioral Assessment System for Children and Adolescents-Adolescent-Self Report (BASC SRP)*. The BASC SRP adolescent form was used as a measure of self-reported socio-

emotional functioning and general mental health status (Reynolds & Kamphaus, 1992). The BASC is a widely used questionnaire that contains a series of statements which require a “True” or “False” response. Sample questions include, “I am afraid of a lot of things” and “I want to do better but I can’t.” The BASC SRP consists of four separate subscales: Clinical maladjustment (anxiety, atypicality, social stress, locus of control and somatization), Personal Maladjustment (relations with parents, interpersonal relations, self-reliance and self-esteem); School Maladjustment (attitude to school, attitude to teachers, sensation seeking, depression, sense of inadequacy), and the Emotional Symptoms Index (ESI) (anxiety, atypicality, depression, interpersonal relations, sense of inadequacy, self-esteem). The present study used the Emotional Symptoms Index as the primary indicator of mental health status of the sample. The ESI is considered by the authors to be the most comprehensive indicator of serious emotional disturbance (Reynolds & Kamphaus, 1992). Furthermore, given that cross cultural research has suggested that Chinese Americans tend to somaticize more than European Americans (Uba, 1994) the present study also examined the somatization scale of the BASC as an outcome variable.

The BASC-SRP has good reliability and validity. Internal consistencies for the adolescent self report forms ranged from between .54 to .97, but are typically in the .70s and .80s. Notably, internal consistencies for the composite scores (such as the Emotional Symptoms Index) were particularly high and ranged from the mid .80s to the mid .90s. Test retest reliabilities of the BASC adolescent forms were found to have a median of .76 and ranged from .67 to .86. Once again, test retest correlations for the composite scores were particularly high and ranged from the low to mid .80s (Reynolds & Kamphaus, 1992)

*Asian American Multidimensional Acculturation Scale (AAMAS).* Acculturation level

was measured using the AAMAS, a multidimensional acculturation scale designed to separately assess involvement in Chinese, Pan-Asian and European-American cultures (Chung et al., 2004). Recently, bidimensional and multidimensional scales have been developed to address some of the shortcomings of the unidimensional measures. This novel approach was developed following criticisms that unidimensional measures of acculturation did not adequately represent “true biculturalism” as defined by high adherence to both native and host cultures (Chung, Kim, & Abreu, 2004). Advocates of the bicultural scales argue that cultural involvements are not necessarily bipolar and therefore should be measured separately (Nguyen et al., 1999).

The AAMAS consists of three scales: a) AAMAS-Culture of Origin (AAMAS-CO) which measures acculturation to one’s specific culture of origin b) AAMAS-Asian American (AAMAS-AA) which measures acculturation to Pan-Asian culture and c) AAMAS-European American (AAMAS-EA) which measures acculturation to mainstream European American culture. Pan-Asian ethnicity is described by Le Espiritu (1992) as “the generalization of solidarity among ethnic subgroups” mostly as a result of categorization (Le Espiritu, 1992, p 2). Panethnicity can result in mobilization and empowerment of ethnic subgroups and encourage the development of a common, collective culture. Chung et al. (2000) claim that the “AAMAS measures the extent to which there is a consistent underlying structure for such an emergent pan-ethnic culture, particularly in the domains of cultural identity, language, cultural knowledge, and food consumption” (Chung et al., 2000, p 68).

Each AAMAS scale consists of 15 items adapted from the SL-ASIA. Specifically of the 15 items, ten measure cultural behavior, three measure cultural identity, and two items measure cultural knowledge. Each question is rated on a 6-point Likert scale ranging from “not very much” to “very much,” with one item scored in the reverse direction. Total scores are obtained



by averaging across the items in each scale. Sample items include “How well do you speak the language of a) your own Asian ethnic group? b) other Asian groups c) English?” and “How much do you have in common with people from of a) your own Asian ethnic group? b) other Asian groups c) the White mainstream groups?” The AAMAS has been demonstrated to have good reliability and validity. In terms of internal reliability, coefficient alphas for the AAMAS-CO, AAMAS-AA, and AAMAS-EA were found to be .89, .83, and .81, respectively. Test-retest reliability was measured at a 2-week interval for the three scales and was found to be .89, .75 and .78, respectively. With regards to concurrent validity, there was a strong inverse correlation between the AAMAS-CO and the SL-ASIA, and a strong positive correlation with the AAMAS-EA scale and the SL-ASIA both as predicted. Evidence of divergent validity for the AAMAS was reflected in its weak relationship with two scales that assess different constructs, the Rosenberg’s Self-Esteem Scale and the Intergenerational Conflict Inventory (Chung et al., 2004).

*Cultural Adjustment Difficulties Checklist (CADC)*. Acculturative stress was measured by the Acculturative Stress subscale of the Cultural Adjustment Difficulties Checklist (CADC: Sodowsky & Lai, 1997). The CADC is a 48 item scale developed to assess the stressors of Asians in the U.S. as a result of acculturation. It uses a 6-point Likert scale with lower scores (e.g.; 1) indicating less acculturative distress and higher scores (e.g.; 6) indicating more acculturative stress. The CADC has two factors: Acculturative Distress and Intercultural Competence Concerns. The Acculturative Distress factor is a 35-item subscale that includes both general stress and cultural stress items. The general stress items refer to affective responses (e.g.; depression, guilt, anxiety, anger), behavioral responses (e.g.; violence, alcohol use, procrastination), psychosomatic complaints (e.g.; backaches, stomachaches, headaches) and academic/career concerns (e.g.; performance anxiety). In contrast, the cultural stress items of the

CADC refer to interpersonal concerns with White Americans, one's own family members, and cultural group. It also includes experiencing feelings of anger towards one's own cultural group or White Americans, gender role confusion, feeling caught between two cultures, or alienated from both cultures (Sodowsky & Lai, 1997). Sample items include asking participants to rate how much they believe "their cultural/nationality/ethnic group is inferior to the White American group" and the extent to which they "feel caught between the White American culture and the culture of their cultural/nationality/ethnic group." The Intercultural Competence Concerns factor, which refers to concerns about social, academic, cultural and career competence, was not used in this study. The reliabilities for the full CADC scale, and the Acculturative Distress (CADC-AD) and Intercultural Competence Concerns (CADC-ICC) subscales were .91, .92 and .94, respectively. Previous studies on Asian immigrant youth have reported alpha coefficients of .92, .90 and .88, respectively (Yeh, 2003). Sodowsky and Lai's (1997) original study obtained an alpha of .90 for the Acculturative Distress Scale. The correlation coefficient between the CADC-AD and CADC-ICC subscales was .35 (Sodowsky & Lai, 1997).

*Inventory of Parent and Peer Attachment (IPPA)—Revised version.* Perceived social support was assessed using the Inventory of Parent and Peer Attachment (IPPA)—revised version (Armsden & Greenberg, 1987). The IPPA is a 25-item self-report questionnaire using a 5-point Likert scale (1 = never or almost never true, 5 = always or almost always true) to elicit information about adolescents' relationships with their mothers, fathers, and peers. Sample items include, "My mother (father, friends) accept(s) me as I am" and "I trust my mother (father/friends)." The IPPA yields overall Attachment scores based on responses to all 25 items and three subscale scores—Trust (10 items), Communication (9 items), and Alienation (6 items)—for each attachment figure. The present study analyzed the total Attachment score for

parents by averaging the total Attachment scores for mothers and fathers, as an overall measure of perceived parent social support. The study also analyzed the total Attachment score for peers as a general measure of peer social support.

In terms of psychometric properties, the IPPA demonstrates good reliability and validity. Specifically, internal reliabilities (e.g., Cronbach's alpha) in the standardization sample were as follows: Mother attachment, .87; Father attachment, .89; Parental communication .77; Trust .83; and Alienation, .76 (Armsden & Greenberg, 1987). Previous studies have found that the reliability coefficients for reports concerning mothers were .92, .86, .85, and .72 and for fathers were .92, .85, .87, and .72 for Attachment, Trust, Communication, and Alienation, respectively. Using a sample of 163 adolescents Gullone and Robinson (2005) found Cronbach alpha coefficients of the IPPA-R scales to range from .68 to .86. The coefficients demonstrated good overall internal consistency for each scale, with the exception of the Alienation subscale which was weaker but still acceptable. Analysis of convergent validity generally revealed moderate correlations in the predicted direction. Specifically, moderate correlations were found between the IPPA-R and reported self-esteem as measured by the Self-Esteem Inventory. In addition, overall Parent attachment score on the IPPA-R was positively and strongly correlated with the Care dimension of the Parental Bonding Inventory (PBI) and moderately negatively correlated with the PBI Overprotection dimension. Finally, there were strong correlations found between the IPPA-R Total Parent and Peer attachment scores and their respective subscale scores (Gullone & Robinson, 2005).

*Nowicki Strickland Locus of Control Scale for Children (CNS-IE)* The Nowicki Strickland Locus of Control Scale for Children (Nowicki & Strickland, 1973) was used to assess the locus of control orientation of the participants. The 40-item test uses a yes-no format, with

scores ranging from 0 to 40. Higher scores indicate greater externality. Sample items include, “Are some kids just born lucky?” and “Do you think that kids can get their own way if they just keep trying?”

The CNS-IE has excellent psychometric properties and has been used extensively in cross-cultural research (Nowicki & Duke, 1983; Lamontagne, Hepworth, Johnson, & Cohen, 1996; Li & Lopez, 2004; Liu et al., 2000). A previous study administered a Chinese version of the scale with a sample of Chinese adolescents, and reported an alpha of .86 (Lui et al., 2000). Another study found that the Chinese translation of the scale demonstrated satisfactory concurrent validity, and was correlated with measures of depression and stress coping in Chinese adolescents (Liu, Yang, Liu, & Sun, 1997). The original English version of the test was found to have an internal consistency of  $r = .74$  (grade 9 to 11) and  $r = .81$  (grade 12). Test retest reliabilities ranged from .63 to .71 over a 9-month period for children in grades 3-6. Discriminative validity demonstrated nonsignificant correlations between the CNS-IE and the measures of social desirability and IQ. Construct validity showed significant correlations between internality and higher academic achievement for children in grades 3-12.

*Demographic Questionnaire.* Information was also collected on demographic characteristics of the sample. A demographic questionnaire was used that asked questions participants’ age, gender, grade level, birthplace, age at immigration, length of residence in the U.S., parental education level and parental employment status. Finally, given that some of the participants may be living with just one, or neither parent, an inquiry on which family members are living in the home is particularly relevant in terms of measuring parental perceived social support.

*Translations.* With the exception of the CNS-IE and the demographic survey, translated

versions of all forms were obtained from other published researchers, who had used the surveys in previous studies with Asian immigrant populations and had used rigorous translation methods. Most of the surveys were first translated and then back-translated by bilingual research assistants using translation procedures that maintained semantic equivalence and reliability (Bravo, Woodbury-Farino, Canino, & Rubio-Stipec, 1993). Specifically, the questionnaires were first translated from English into Chinese by one research team. Then another research team translated the surveys back into Chinese. Finally, a third research team reviewed both versions and resolved any discrepancies in order to maintain semantic equivalence as much as possible. Translation of the CNS-IE, the demographic survey and the consent forms were done by a graduate student who was fluent in both Chinese and English. Permission was obtained by the authors of the CNS-IE to translate their questionnaire. Students were provided with a choice of survey materials in English, Simplified Chinese, or Traditional Chinese. Traditional Chinese characters are currently used in the Taiwan, Hong Kong and Macau. Simplified characters, officially used in the People's Republic of China, are often used among mainland Chinese immigrants. Permission was obtained from the authors and the test publishers of all the surveys used in this study.

### *Procedure*

Parental consent was required for all participants in the study. The consent form included a description of the purpose of the study, procedures, potential risks and benefits, confidentiality and the author's contact information. All students also signed an assent form, which clearly and explicitly explained their rights as a study participant. Both parents and students were told that participation in the study is completely voluntary and that they could decide to withdraw from the study at any time, without penalization. The inclusion criteria for participation in the study

was that the participant must have been 1) between the ages of 12 and 17 years and 2) born outside of the United States.

The data were collected from Fall 2008 to Fall 2009. Participants were recruited through schools and Chinese based organizations in the Boston and Washington D.C. areas. Recruitment was initially attempted through emailing and posting flyers in Chinese community centers, churches, and other organizations, however this technique proved to be unsuccessful. Permission was then obtained to recruit students in the Boston City public schools, through the Boston Public Schools Office of Research, Assessment and Evaluation. Next, principals of schools with large Asian populations were contacted to see if they were interested in having their school participate in the study. Only a few principals responded, and all said that they did not have time to participate. However, once the doctoral candidate was introduced to an individual within the Chinese community who served as a school psychologist in one of the schools, a meeting was arranged with school personnel and subsequently, consent was obtained by the principal to participate in the study. After parental consent and student assent were obtained from all potential participants, the school's ESL teacher administered the anonymous surveys to the students, following explicit directions and a script that were given to her. The teacher was available to clarify the meaning of the survey questions to the participants. Study participants were also recruited in the Washington Baltimore area, following a similar pattern of events. After emails and flyers proved once again to be an unsuccessful method of obtaining participants, a family friend of the doctoral candidate, who was an art teacher at a Chinese community school, agreed to speak to her school principal about the study, and permission was then granted to recruit study participants. Notably, however many students in these Chinese cultural schools did not qualify for study participation, because they were born in the United States. Overall the

response rate for the study was estimated at 35%. The challenges of recruiting participants for this study may also be partly attributable to reluctance in the Chinese immigrant community to participate in psychological research, perhaps because of lack of knowledge about psychological research or cultural stigmas surrounding disclosure of psychological difficulties and personal information to a researcher.

## Chapter 4

### Results

This dissertation focused on the relationship of acculturation, acculturative distress, locus of control and perceived social support on the mental health of Chinese immigrant adolescents. The dependent variable, “mental health,” was operationalized using the Emotional Symptoms Index (ESI; a composite score) and the Somatization (SOM) score from the BASC.

Several hypotheses and questions were evaluated. It was hypothesized that Chinese immigrant adolescents with (a) higher levels of acculturative distress (CADC) would demonstrate worse mental health than those with lower levels of acculturative stress, (b) an internal locus of control (LOC) would demonstrate better mental health than those with an external locus of control, (c) higher levels of perceived social support (AT) from parents and peers would demonstrate significantly better mental health than those with low levels of perceived support, and (d) more involvement in mainstream European-American culture (AEA) and lower involvement in their culture of origin (ACO) would demonstrate better mental health. The questions were: (a) Does locus of control and perceived social support moderate the relationship between acculturative stress and mental health?, and (b) Does perceived social support demonstrate a different pattern of stress buffering for individuals of internal versus external locus of control? Results of a power analysis indicated that to detect a medium effect size of 0.15, one would need a sample size of 97 ( $\alpha = 0.05$ , a power of .80). In order to detect a large effect size of 0.34, one would need to have a sample size of 46.

Table 2 contains means and standard deviations for the independent and dependent variables. Results indicate that overall, the participants in this study were well adjusted, with their mean scores on the Emotional symptoms index and the Somatization subscale both in the



Average range (Mean ESI=50.8; Mean SOM=47.7; A score of 41-59 is within the Average range on the BASC). Notably, only ten study participants had an ESI score in the At-Risk range (Score of 60-69) and four participants scored in the Clinically Significant range (Score of 70 or above). Furthermore, participants generally had a more internal locus of control orientation (mean score of 14.5 out of 40, with higher scores indicating greater externality). On average, they were far more acculturated to Chinese culture as compared to European American culture. Specifically, their mean ACO score was 5.4/6, while their mean AEA score was just 3.2/6. Perhaps this is not surprising given that participants' average time in the US was just about a year and a half. Notably, participants indicated that they had good social support networks with both their parents and their peers. Indeed, both parental and peer attachment were high for this sample, each with an average score 90 out of 125. This is significantly higher than those reported in Armsden and Greenberg's original study (1987) for their sample of Caucasian adolescents (parent mean = 60.7, peer mean = 56.6). Finally, the mean acculturative distress score for the sample was 91.3/210 (Interquartile range 79 – 102). Given that the lowest possible Acculturative Distress score on the CADDC was 35, the mean distress score for the sample was relatively moderate.

Intercorrelations among the independent variables and dependent variables are contained in Table 3. Correlations between emotional symptoms and locus of control variables revealed that participants with a more external locus of control reported more emotional symptoms ( $r = .46, p < .001$ ). Attachment to parents and attachment to peers were also related to emotional symptoms, both showing a negative relationship indicating that greater attachment to parents and peers were correlated with fewer emotional symptoms ( $r = -.51, p < .001$ ;  $r = -.51, p < .001$ , respectively). Furthermore, somatization was positively correlated to acculturative distress ( $r = .24, p < .05$ ) and to locus of control, with a more external locus of control associated with

greater somatization ( $r=.25, p <.05$ ). Attachment to parents was negatively associated to somatization ( $r=-.36, p <.01$ ). Finally, somatization was positively associated with the number of years the participants had lived in the United States ( $r=.35, p <.01$ ).

The data in this dissertation were analyzed with ordinary least squares (or linear) regression analysis. The first set of analyses regressed each dependent variable, somatization and emotional symptoms, on acculturative distress, locus of control, acculturation and social support. Subsequent analyses evaluated the hypothesized interactions. The interaction terms were included in separate analyses for the sake of clarity and because of the relatively small sample size. Given the relatively small  $n$ , it would be difficult to detect an interaction effect unless there was a very big effect present. In other words, adding many covariates in addition to testing for interactions would result in an unstable model with lower power.

The models evaluated in the first set of analyses were statistically significant: somatization ( $R=.47, R^2=.22, R^2_{\text{adjusted}}=.15, F(6, 74)=3.38, p <.05$ ) and emotional symptoms ( $R=.67, R^2=.45, R^2_{\text{adjusted}}=.40, F(6, 74)=10.01$  and  $p <.001$ ). Tolerance and variance inflation factor values were within acceptable limits for both models. As predicted, attachment to peers ( $\beta=-.33, p <.01$ ), and attachment to parents ( $\beta=-.29, p <.01$ ), locus of control ( $\beta=.23, p <.05$ ) and acculturative distress ( $\beta=.22, p <.05$ ) were all significant predictors of emotional symptoms. However, acculturation was not significant. See Table 4. Furthermore, as hypothesized, acculturative distress ( $\beta=.27, p <.05$ ) and attachment to parents ( $\beta=-.28, p <.05$ ) were statistically significant predictors of somatization. However contrary to prediction, acculturation, peer social support and locus of control were not significantly associated with somatization. See Table 5.

In summary, the results provide relatively strong support for the hypotheses that (a) individuals with higher levels of acculturative distress demonstrate worse mental health than

those with lower levels of acculturative stress and (b) individuals with higher perceived parental support demonstrate better mental health than those with less parental support. Support was also provided for the hypotheses that (a) individuals with higher perceived peer support demonstrate better mental health than those with less peer support and (b) individuals with a more internal locus of control orientation demonstrate better mental health than those with a more external locus of control orientation. No support was found for the hypothesis that adolescents with more involvement in mainstream European-American culture (AEA) and lower involvement in the culture of origin (ACO) demonstrate better mental health. (As predicted, AEA was negatively associated with emotional symptoms and ACO was positively associated with emotional symptoms, however these associations were not statistically significant.)

The next set of analyses regressed each of the dependent variables, emotional symptoms and somatization, on locus of control, acculturative distress, and the locus of control x acculturative distress interaction to evaluate the hypothesis that locus of control moderates the relationship between acculturative distress and mental health. The interaction was not significant  $R=0.50$ ,  $R^2=.25$ ,  $R^2_{\text{adjusted}}=.22$ ,  $F(3,77)=3.66$   $R=3.46$ ,  $R^2=.12$ ,  $R^2_{\text{adjusted}}=.09$ ,  $F(3,77)=3.66$  for somatization and  $R=.50$ ,  $R^2=.25$ ,  $R^2_{\text{adjusted}}=.22$ ,  $F(3,77)=8.38$   $R=.50$ ,  $R^2=.25$ ,  $R^2_{\text{adjusted}}=.22$ ,  $F(3,77)=8.38$  for emotional symptoms.) See Table 6 and Table 7.

Next, each of the dependent variables were regressed on social support, acculturative distress, and the social support x acculturative distress interaction to evaluate whether social support moderates the relationship between acculturative distress and mental health. Contrary to the hypothesis, the interaction was not significant ( $R=.45$ ,  $R^2=.20$ ,  $R^2_{\text{adjusted}}=.17$ ,  $F(3,77)=6.42$  for somatization and  $R=.45$ ,  $R^2=.20$ ,  $R^2_{\text{adjusted}}=.17$ ,  $F(3,77)=16.31$  for emotional symptoms.) See Tables 8 and 9.

Finally, each of the dependent variables, somatization and emotional symptoms, were regressed on acculturative distress, locus of control, social support and the 3-way locus of control x social support x acculturative distress interaction. This was done to test whether social support demonstrates a different pattern of stress buffering depending on one's locus of control orientation. However, results indicated that the interaction was not significant ( $R=0.46$ ,  $R^2=0.21$ ,  $R^2_{\text{adjusted}}=0.14$ ,  $F(7,73)=2.85$  for somatization and  $R=0.68$ ,  $R^2=0.46$ ,  $R^2_{\text{adjusted}}=0.41$ ,  $F(7,73)=8.85$  for emotional symptoms). See Tables 10 and 11.

## Chapter 5

### Discussion

The present study examined the role of acculturation, acculturative stress, locus of control and perceived social support on the mental health of first generation Chinese immigrant adolescents. As hypothesized, acculturative stress and perceived parental support were significant predictors of both emotional symptoms and somatization. Locus of control and perceived peer support were significant predictors of emotional symptoms only, while acculturation was not a significant predictor of either emotional symptoms or somatization. Furthermore, the results suggested that locus of control and social support had a direct impact on mental health outcomes, rather than an indirect, stress buffering role.

As predicted, acculturative stress was negatively related to both mental health outcomes. This finding indicates that the mental health of Chinese immigrant youth can be predicted by their affective, behavioral and psychosomatic responses to acculturation, and their experiences with cultural stress such as feeling caught between two cultures, or having conflicts with the white majority group. Furthermore, these results are in line with previous research studies (Yeh, 2003; Ying & Han, 2006), which have found that acculturative distress is negatively associated with wellbeing. As discussed earlier, this relationship may particularly hold true when the level of stress exceeds the individual's coping capacity. Since this sample consisted of mostly recent immigrants, one would expect their acculturative stress levels to be higher than second-generation immigrants, or individuals who have lived in the United States for a longer period of time (Padilla et al., 1985; Sodowsky et al., 1991). Given that the average amount of time the participants had spent in the US was only about a year and a half and many participants were students in ESL classes, it is likely that one of the main acculturative stressors for this sample

was their English language proficiency. This variable has been found to be a strong predictor of an individual's acculturative stress level (Nwadiora & McAdoo, 1996) with the potential to strongly impact immigrants' self-esteem (Kim, 1996), interpersonal relationships, and academic success at school (Yeh et al., 2008).

The results also supported the hypothesis that an internal locus of control was associated with better mental health outcomes, at least with regards to participants' overall emotional symptoms. This finding is also in line with some of the previous research with Asian populations, which has generally found that an internal locus of control orientation is associated with better mental health (Kuo et al., 1979; Leung, 2001b). According to Lui et al. (2000), perhaps individuals with an internal locus of control have better mental health because they believe they can control the outcome of stressful life events and therefore are less impacted by these events. Alternatively, it is possible that individuals with an internal locus of control use more effective coping strategies, thereby reducing the potentially negative impact of stress on their mental health (Lui et al., 2000).

Notably, the results of this study revealed that overall, the best predictor of adolescents' mental health was perceived social support. Parental support was a significant predictor of both mental health outcomes while peer support only predicted overall emotional symptoms. Overall, these findings are in line with previous research on Asian immigrant youth, which suggests that increased social support is not only related to better mental health, but also serves as an important coping strategy for dealing with stress (Yeh et al., 2005; Yeh et al., 2008). However, unlike much of the past research, which has suggested that Asian immigrant youth experience a variety of interpersonal difficulties with both their parents and their peers, the adolescents in this study reported having a strong parental and peer support network. One possible explanation for

the strong parental support may be because the participants were, on average, highly acculturated to Chinese culture and far less acculturated to European American culture. As a result, their attitudes, beliefs and behaviors were potentially more in line with that of their parents and thereby reduced the intergenerational conflict that is commonly reported by children and parents who differ in their acculturation levels. Past research has found that Asian American parents and children who have similar acculturation levels (e.g.; both highly acculturated to Western culture) experience less family conflict than those with divergent acculturation levels (Lee et al., 2000; Lee & Liu, 2001). (Potential explanations for the strong peer support reported by this sample are explained in more detail below.)

Next, the results of this study indicated that contrary to the hypothesis, acculturation was not a significant predictor of either emotional symptoms or somatization. However, in accordance with the hypothesis, a negative trend was found between acculturation to European American culture and emotional symptoms, and a positive trend was found between acculturation to Chinese culture and ESI. (It is possible that these associations were not statistically significant because there was not enough power to detect it, given the relatively small sample size in this study.) Several previous studies have found that Asian immigrants who are more highly acculturated to American culture demonstrate better mental health than those who are not (Nguyen et al., 1999; Yeh, 2003; Wong, 2001). Chinese immigrant youth who are highly acculturated to their ethnic culture and less acculturated to American culture may have more mental health difficulties because they experience more acculturative stress and issues with sociocultural adaptation. For example, they may have more difficulty communicating in English and have less familiarity with the norms and customs of American culture thereby resulting in interpersonal difficulties. Furthermore, since the relationship between cultural orientation and

psychological wellbeing depends on the cultural context (Ying, 1995), it is possible that individuals who are more acculturated to American culture demonstrate greater psychological wellbeing because they are more accepted by their school and community.

Finally, results of this study suggested that the variables, social support and locus of control, had a direct impact on mental health, rather than an indirect, stress buffering role. In other words, social support and locus of control did not serve as moderators between the acculturative stress-mental health relationship. Rather than reducing the impact of acculturative stress on overall well-being, they influence mental health outcomes directly. Previous studies have demonstrated mixed findings on the role of these variables on psychological wellbeing, with some suggesting a direct role (Cohen et al., 1982) and others demonstrating an indirect, moderating relationship (Cohen & McKay, 1984). Furthermore, Liang and Bogat (1994) found that for Chinese nationals with an external locus of control, perceived support showed both main and stress buffering effects. However, social support was neither directly or indirectly beneficial for Chinese nationals with an internal locus of control. A possible explanation for the lack of moderating effects seen in the present study may be because the participants reported, on average, relatively low stress levels. Research suggests that the stress buffering role of variables such as social support has been primarily applicable under circumstances when an individual is experiencing high stress levels (Cohen & Wills, 1985). It is also possible that there was not enough power to detect interaction effects due to the relatively small sample size in this study.

In contrast to previous studies, which have found high levels of psychological maladjustment and distress in first generation Chinese immigrant youth (Zhou et al., 2003), the adolescents in this sample were relatively well adjusted. Overall, participants' mental health was in the average range as compared to other children their age, indicating that these adolescents



demonstrated remarkable resilience in the face of many risk factors (e.g.; low SES, recent immigrant status, etc). Other studies have also found that low-income Chinese immigrant youth demonstrate resilience despite experiencing a variety of stressors (Yeh et al., 2008). Yeh et al. (2008) found that Chinese immigrant youth often used interdependent coping strategies which involved seeking support from their relatives, friends, teachers and community. They were also adept at negotiating their “multiple roles of student, employee, translator and caretaker.” The strong mental health of this sample could, in part, be because the participants’ generally reported 1) a more internal locus of control orientation 2) strong social support from both their parents and their peers and 3) moderately low levels of acculturative distress, all of which the results indicated, are associated with better mental health outcomes. There are several additional possible explanations for these findings.

First, most of the participants attended schools where a large percentage of students spoke English as a second language, and had limited English proficiency. This type of student body may have provided the study participants with a peer group with whom they could relate to since they were also experiencing some of the same struggles (e.g. learning English, experiencing acculturative stressors, etc). Given that peer support proved to be the best predictor of emotional symptoms, and past research has suggested that Asian immigrant youth use peer support as one of their main coping strategies (Yeh et al., 2005), this strong peer support may have been a key factor which contributed to the generally robust mental health of the sample. Also, many participants were students in ESL classes, with other students and a teacher who spoke their language. This environment may have positively impacted participants’ mental health by not only providing them with a better support network at school, but also by protecting them from the stress and increased demands associated with having to participate in mainstream,

English only classes. Furthermore, it would also be important to investigate whether there were any interventions in place at these schools, which positively affected the mental health of the study participants.

Second, although the surveys were anonymous there may have been issues with social desirability bias. Cultural pressures on the participants not to “lose face” by admitting psychological issues, stress, or problems with their parents may have been particularly strong for this sample of recent immigrants who were strongly acculturated to Chinese culture and perhaps also more influenced by cultural stigmas against reporting mental health difficulties. Social desirability may have also been an issue in this study since many of the surveys were administered by the participants’ teacher, a strong authority figure in Chinese culture.

Third, those adolescents who chose to participate in this study may have been better adjusted than those who did not participate. Particularly since the estimated response rate for this study was low (35%) and study participation involved completing lengthy surveys for no compensation, those adolescents who participated may have been more motivated and also better adjusted than who did not participate. The sample may also have been biased towards psychologically healthier participants since students with truancy or juvenile delinquency issues are less likely to be at school and are therefore less likely to have successfully returned their consent forms and to have completed the lengthy surveys involved in this study.

Finally, it is possible that the adolescents in this study demonstrated particularly strong mental health because they were mostly comprised of recent immigrants. Recent immigrants may be quite optimistic and idealistic about life in the United States. This “honeymoon period” may diminish over time as immigrants develop a more realistic view of their new life and are confronted with acculturative stressors such as the challenge of learning unfamiliar customs or a

new language. These acculturative stressors may build up over time and thus mental health issues may become more apparent some time after immigration occurs. *Study Limitations*

This study had several limitations that warrant discussion. First, as was previously mentioned, the study had a relatively small sample size (n=81). Given the small sample size, perhaps there was not enough power to detect statistically significant relationships between some of the variables (e.g.; acculturation and mental health).

Second, the generalizability of the study is limited since most of sample was low income, urban Chinese immigrant youth who recently immigrated to the United States. Future research should incorporate participants who are more diverse in terms of socioeconomical backgrounds and generational status, as well as residents of both urban and suburban locations.

Finally, this study relied solely on the use of self-report questionnaires. This form of research has some limitations in that it does not take into account the ecological context of the participants' lives and the views of other relevant groups such as their family, school teachers and peers (Yeh et al., 2008). Self-report measures are also more susceptible to social desirability bias, as was previously discussed.

### *Study Implications*

This study has several implications for psychology training programs and school based mental health professionals, as well as several research implications. First, given the strong role of parental and peer support on the mental health outcomes of Chinese immigrant adolescents, it is important for schools and mental health professionals to promote and strengthen the social networks of their Chinese immigrant students. For example, schools may provide peer mentoring or peer support groups for Chinese immigrant students to give them an opportunity to share their feelings and receive support from their peers. Low-income youth, in particular, may have limited

time for peer socialization due to responsibilities such as having to work part time. Furthermore, given that Chinese immigrant youth often report feelings of invisibility (Yeh et al., 2008), the development of an inclusive school climate towards immigrant students is crucial. For example, school personnel can provide opportunities for non-English speaking immigrant students to socialize with their English-speaking peers in order to strengthen their social bonds and their English language skills.

Second, given that immigrant parents are often less involved in their children's schools for a variety of reasons (e.g.; different cultural expectations regarding school involvement, language barriers, the demands of long work hours, etc) school personnel may also try to increase parental involvement by forming liaisons between the school and Chinese cultural organizations in the community. This technique may be more effective for engaging Chinese immigrant parents who may have limited English proficiency and/or unfamiliarity with school norms in the United States. Since low-income immigrants often work long hours, the school should try to provide these events after school and during weekend hours, if possible.

Furthermore, it is important to train mental health professionals on the acculturation issues confronted by Chinese immigrant youth in order to increase their ability to address their unique challenges and to provide culturally sensitive interventions. Given that Asian immigrant youth may lack knowledge about mental health services and have cultural stigmas against reporting mental health issues, schools should also have outreach programs for Asian immigrant youth, using bilingual counselors whenever possible. Counseling services should also address the multiple losses that Chinese immigrant youth experience upon leaving their native country, which may remain unacknowledged and unresolved. This may include loss of their support networks of family and friends in their native country, loss of social status, and loss of their

native language. Chinese immigrant youth may also spend less time with their parents upon immigration either because their parents could not live with them or see them as frequently because of work demands (Yeh et al., 2008). Given that Asian immigrant youth are often unable to afford seeing a professional psychologist in private settings, it is crucial that school-based mental health professionals provide services to this population.

Finally, there are several research implications of the study. Future research studies may incorporate qualitative data methods in order to get a more in-depth perspective on the acculturative issues confronted by immigrant youth. Qualitative data may also help to test new hypotheses and identify new variables involved in the acculturation process (Yeh et al., 2005). For example, researchers may conduct focus groups with Asian immigrant youth and also collect information from their parents and teachers in order to get a more multidimensional perspective on acculturation. Furthermore, since many of the participants in this study were students in ESL classes, future research may investigate whether placement of immigrant youth in such classes may serve as a possible intervention to promote their psychological well-being. In particular, ESL classes may provide immigrant adolescents with a better support network and help them ease into the transition of life in the United States.

Table 1  
*Demographic Characteristics of Participants.*

Participant Characteristics (N=81)	Mean or %	SD
Age (mean)	13.9	1.61
Grade (mean)	10.4	2.56
Gender (%):		
Male	53.8	
Female	46.3	
Place of birth (%):		
China	95.0	
Taiwan	1.3	
Hong Kong	1.3	
Other	2.5	
Father's education (%):		
no HS	38.5	
HS	56.4	
College	5.1	
Mother's education (%):		
no HS	41.0	
HS	52.6	
College	6.4	
Father's employment (%):		
Unemployed	13.9	
Employed	86.1	
Mother's employment (%):		
Unemployed	18.8	
Employed	81.3	
Family members (%):		
both parents	88.2	
mother only	6.6	
father only	5.3	

Table 2

*Means and Standard Deviations of Independent and Dependent Variables*

Statistic	ESI	SOM	CADC	LOC	ACO	AAA	AEA	AT Parents	AT Peers
<i>M</i>	50.8	47.7	91.3	14.5	5.4	2.8	3.2	90.3	90.4
<i>SD</i>	9.08	10.03	20.8	4.78	0.62	1.13	0.84	16.3	16.48
<i>IQR</i>	44 – 56	39 - 50	79 - 102	12 – 17	5.13 – 5.87	2.6-3.8	2.07-3.6	77 – 102	80 – 103

*Note.* IQR = Inter-quartile range; ESI = Emotional Symptoms Index; SOM = Somatization; CADC = Acculturative distress; LOC = locus of control; ACO = acculturation culture of origin; AAA = acculturation Asian American; AEA = acculturation European American; AT = Attachment

Table 3  
*Intercorrelations Among the Independent and Dependent Variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1. Age	---																		
2. Gender	-0.1	---																	
3. Grade	0.42***	-0.22*	---																
4. IA	0.30**	0.02	0.14	---															
5. YRS in USA	0.19	-0.03	-0.12	-0.24*	---														
6. ED Father	-0.07	0.23*	-0.28*	0.05	0.11	---													
7. ED Mother	-0.18	0.15	-0.38***	-0.02	0.08	0.70***	---												
8. EM Father	-0.06	-0.08	-0.2	0.12	-0.15	-0.1	0.1	---											
9. EM Mother	0.07	-0.01	-0.1	0.05	0.07	-0.1	0.06	0.18	---										
10. ESI	-0.02	0.04	-0.11	-0.05	0.21	-0.04	-0.21	-0.13	-0.03	---									
11. SOM	-0.02	0.11	-0.27*	-0.15	0.35**	0.08	-0.02	-0.15	0.14	0.43***	---								
12. CADDC	0.11	-0.05	0.05	0.07	-0.04	-0.07	-0.17	-0.16	0.04	0.16	0.24*	---							
13. LOC	-0.08	0.13	-0.02	-0.34**	0.13	-0.05	-0.07	-0.12	-0.01	0.46***	0.25*	-0.04	---						
14. AT Parents	0.06	0.05	-0.01	0.21	-0.10	0.05	0.21	0.07	-0.03	-0.51**	-0.36**	0.06	-0.44	---					
15. AT Peers	0.16	0.09	0.22*	0.01	0.003	0.03	-0.04	-0.26*	-0.05	-0.51***	-0.19	0.11	-0.36***	0.43***	---				
16. ACO	0.12	0.09	0.25*	0.06	-0.05	0.12	0.1	0.04	-0.07	-0.19	-0.19	0.09	-0.13	0.37***	0.32**	---			
17. AAA	0.11	-0.01	0.07	0.22*	-0.05	0.02	0.19	-0.04	0.1	-0.23*	-0.15	0	-0.14	0.12	0.32**	0.20	---		
18. AEA	0.12	-0.01	0.09	0.13	0.11	0.15	0.22	-0.09	0.15	-0.1	0	0.19	-0.05	0.16	0.21	0.17	0.37***	---	

*Note.* IA = age at immigration; YRS = years; ED = education; EM = employment, ESI = emotional symptoms index; SOM = somatization; CADDC = acculturative distress; LOC = locus of control; AT = attachment; ACO = acculturation culture of origin; AAA = acculturation Asian American; AEA = acculturation European American.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .



Table 4  
*Summary of the Regression Analysis Predicting Emotional Symptoms*

Variables	<i>B</i>	<i>SE B</i>	<i>B</i>	Partial <i>r</i>	Tolerance	VIF
Locus of Control	0.43	0.19	0.23	0.26*	0.76	1.3
Acculturative Distress	0.10	0.04	0.22	0.28*	0.96	1.04
Attachment to Parents	-0.16	0.06	-0.29	-0.18*	0.66	1.5
Attachment to Peers	-0.18	0.06	-0.33	-0.35**	0.72	1.38
Acculturation Culture of Origin	0.54	1.40	0.04	0.04	0.82	1.22
Acculturation European American	-0.22	0.98	-0.02	-0.02	1.1	1.1

Note.  $R=.67$ ,  $R^2=.45$ ,  $R^2_{\text{adjusted}}=.40$ . VIF=Variance Inflation Factor  
 \* $p<.05$ , \*\* $p<.01$

Table 5  
*Summary of the Regression Analysis Predicting Somatization*

Variable	<i>B</i>	<i>SE B</i>	<i>B</i>	Partial <i>r</i>	Tolerance	VIF
Locus of Control	0.23	0.25	0.11	0.11	0.77	1.30
Acculturative Distress	0.13	0.05	0.27	0.28*	0.96	1.04
Attachment to Parents	-0.17	0.08	-0.28	-0.20*	0.66	1.50
Attachment to Peers	-0.02	0.07	-0.04	-0.04	0.72	1.38
Acculturation Culture of Origin	-1.47	1.84	-0.09	0.09	0.82	1.22
Acculturation European American	0.30	1.29	0.03	0.02	0.91	1.10

Note.  $R=.47$ ,  $R^2=.22$ ,  $R^2_{\text{adjusted}}=.15$ . VIF=Variance Inflation Factor  
 \* $p<.05$

Table 6

*Summary of the Regression Analysis Predicting Somatization with Interaction terms for Locus of Control and Acculturative Distress*

Variable	<i>B</i>	<i>SE B</i>	<i>B</i>	Partial <i>r</i>	Tolerance	VIF
Locus of Control	0.53	0.22	0.25	0.26*	1.00	1.00
Acculturative Distress	0.14	0.66	0.24	0.24*	0.65	1.54
Locus of Control x Acculturative Distress	-0.001	0.01	-0.10	-0.06	0.65	1.54

*Note.*  $R=0.50$ ,  $R^2=.25$ ,  $R^2_{\text{adjusted}}=.22$ , VIF=Variance Inflation Factor,

\* $p<.05$ ,  $F(3,77)=3.66$

Table 7

*Summary of the Regression Analysis Predicting Emotional Symptoms with Interaction terms for Locus of Control and Acculturative Distress*

Variable	<i>B</i>	<i>SE B</i>	<i>B</i>	Partial <i>r</i>	Tolerance	VIF
Locus of Control	0.88	0.05	0.28	0.47	0.65	1.54
Acculturative Distress	0.10	0.05	0.04	0.20***	0.65	1.54
Locus of Control x Acculturative Distress	-0.01	0.01	-0.08	-0.07	1.00	1.00

*Note.*  $R=.50$ ,  $R^2=.25$ ,  $R^2_{\text{adjusted}}=.22$ , VIF=Variance Inflation Factor,

\*\*\* $p<.001$ ,  $F(3,77)=8.38$

Table 8

*Summary of the Regression Analysis Predicting Somatization with Interaction terms for Acculturative Distress and Social Support*

Variable	<i>B</i>	<i>SE B</i>	<i>B</i>	Partial <i>r</i>	Tolerance	VIF
Social Support	-0.27	0.07	-0.38	-0.39**	0.98	1.02
Acculturative Distress	0.13	0.05	0.26	0.28*	0.97	1.03
Social Support x Acculturative Distress	-0.003	-0.004	-0.07	-0.08	0.96	1.04

*Note.*  $R=.45$ ,  $R^2=.20$ ,  $R^2_{\text{adjusted}}=.17$ , VIF=Variance Inflation Factor,

\*\* $p<.001$ ,  $F(3,77)=6.42$

Table 9

*Summary of the Regression Analysis Predicting Emotional Symptoms with Interaction terms for Acculturative Distress and Social Support*

Variable	<i>B</i>	<i>SE B</i>	<i>B</i>	Partial <i>r</i>	Tolerance	VIF
Social Support	-0.39	0.06	-0.61	-0.61**	0.97	1.02
Acculturative Distress	0.09	0.39	0.21	0.25*	0.97	1.03
Social Support x Acculturative Distress	-0.0001	0.003	-0.01	-0.02	0.96	1.04

*Note.*  $R=.45$ ,  $R^2=.20$ ,  $R^2_{\text{adjusted}}=.17$ . VIF=Variance Inflation Factor

\* $p<.05$ , \*\* $p<.001$ ,  $F(3,77)=16.31$

Table 10

*Summary of the Regression Analysis Predicting Somatization with Interaction terms for Locus of Control, Acculturative Distress, and Social Support*

Variable	<i>B</i>	<i>SE B</i>	<i>B</i>	Partial <i>r</i>	Tolerance	VIF
Acculturative Distress	0.16	0.06	0.32	0.27*	0.59	1.69
Locus of Control	0.21	0.25	0.10	0.10	0.76	1.32
Social Support	-0.24	0.08	-0.33	-0.31**	0.76	1.32
Acculturative Distress x Locus of Control	-0.01	0.01	-0.48	-0.10	0.59	1.68
Acculturative Distress x Social Support	-0.0040	0.01	-0.110	-0.10	0.66	1.51
Locus of Control x Social Support	-0.0004	0.02	-0.003	-0.05	0.94	1.06
Locus of Control x Social Support x Acculturative Distress	0.0002	0.001	0.03	0.03	0.66	1.51

*Note.*  $R=.46$ ,  $R^2=.21$ ,  $R^2_{\text{adjusted}}=.14$ . VIF=Variance Inflation Factor

\*  $p<.05$ , \*\* $p<.01$ ,  $F(7,73)=2.85$

Table 11

*Summary of the Regression Analysis Predicting Emotional Symptoms with Interaction terms for Locus of Control, Acculturative Distress, and Social Support*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	Partial <i>r</i>	Tolerance	VIF
Acculturative Distress	0.13	0.05	0.30	0.30**	0.59	1.69
Locus of Control	0.46	0.19	0.24	0.28*	0.76	1.32
Social Support	-0.31	0.06	-0.50	-0.50***	0.76	1.32
Acculturative Distress x Locus of Control	-0.01	0.01	-0.10	-0.10	0.59	1.68
Acculturative Distress x Social Support	-0.004	0.004	-0.12	-0.13	0.66	1.51
Locus of Control x Social Support	-0.02	0.01	-0.13	0.17	0.94	1.06
Locus of Control x Social Support x Acculturative Distress	0.001	0.001	0.12	0.13	0.66	1.51

*Note.*  $R=.68$ ,  $R^2=.46$ ,  $R^2_{\text{adjusted}}=.41$ . VIF=Variance Inflation Factor,

\* $p<.05$ , \*\* $p<.01$ , \*\*\* $p<.001$ ,  $F(7,73)=8.85$

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## APPENDIX A

### *Definition of Mental Health*

Mental health was defined using the Emotional Symptoms Index of the Behavioral Assessment System for Children and Adolescents- Self Report (BASC SRP). The Emotional Symptoms Index is a composite score containing measures of anxiety, depression, social stress, sense of inadequacy, self-reliance, and self-esteem. In addition, since research has shown that Asians often somaticize their mental health difficulties (Uba, 1994) the somatization scale of the BASC was also used as an indicator of mental health status. The BASC has been normed on a large representative sample of individuals aged 2-21 years and uses T scores to indicate the distance of a raw score from the norm-group mean. A T-score of over 1 standard deviation below the mean is considered to be below normal limits.