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**CHINESE AMERICAN ADOLESCENTS' ACHIEVEMENT AND PSYCHOLOGICAL
ADJUSTMENT:**

THE ROLE OF NEIGHBORHOOD AND PARENTING

A Thesis in

Psychology

by

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ABSTRACT

This study explored the relationship between neighborhood (disadvantage, Chinese concentration, and social cohesion), parenting (parental home and school involvement, and parent-adolescent conflict) and Chinese American adolescents' achievement and depressive symptoms. Data for this study were taken from the Early Adolescent Cohort study (EAC). A total of 221 Chinese American adolescents participated. Structural equation modeling was used to examine the relationship between neighborhood, parenting and Chinese American achievement and depressive symptoms as well as the mediating role of parenting. The results revealed that higher Chinese concentration was marginally but meaningfully related to lower achievement. Higher levels of parent-adolescent conflict were a powerful predictor of both lower achievement and higher levels of depressive symptoms. Moreover, results of the study revealed that parental home and school involvement were negatively influenced by neighborhood disadvantage. Compared to parents living in less disadvantaged neighborhoods, parents who resided in more disadvantaged neighborhoods were less involved in their youth's learning at home and school.

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Chapter 1

Introduction

There has been an influx of immigration from Asian countries since the Immigration and Nationality Act was issued in 1965, which has removed the limitations set on the number of Asian immigrants (Massey & Pren, 2012). According to the U.S. Census Bureau (2014), the number of Asian Americans reached 20.3 million in 2014, which represented 26% of the country's total immigrants and 5.4% of the total US population. As of 2014, a majority of Asian Americans are from China, totaling 4.5 million and comprising 1.4% of the whole population in America (U.S. Census Bureau, 2014). Related, the number of Chinese American students is increasing rapidly. School-age children and youth comprise 28% percent of Chinese immigrants, reflecting the rapid increase of immigrant youth in the school system (U.S. Census Bureau, 2014). The changing US demographics have increased researchers' and society's attention to the study of Chinese youth's adjustment (Qin, Rak, Rana, & Donnellan, 2012). With the academic as well as career success made by many Asian Americans (Hsin & Xie, 2014), many view this population as a "model minority" (Kao, 1995; Yeh, Kim, Pituc, & Atkins, 2008). Based on the "model minority" stereotype, Chinese American adolescents are seen as reticent, industrious, and excellent students with good grades (Qin et al., 2012). However, according to recent studies, when compared to other ethnic minority students, Chinese American adolescents tend to have higher educational achievement, but are more susceptible to depression (Huntsinger & Jose, 2006; Qin et al., 2012). This domain-specific adjustment points to a potential discrepancy between academic and psychological well-being among Chinese American adolescents.

According to Bronfenbrenner (1977), the contexts adolescents are embedded in have profound effects on their development. Family and neighborhood contexts are two key developmental settings for adolescents, given that they spend considerable amounts of time with their parents at home and peers outside of school. However, despite the fact that the Chinese American population is increasing, limited studies have touched upon the issue of how family and neighborhood together are related to Chinese American youth's achievement and depressive symptoms. This study aims to explore how two important developmental contexts, neighborhood and family, impact this seemingly paradoxical discrepancy between achievement and depressive symptoms among Chinese American adolescents.

Academic Achievement and Depressive Symptoms

Adolescence represents a unique period, in which adolescents experience multiple changes, including puberty, school transitions, and more conflict with parents and more time spent with peers (Eccles et al., 1993). Multiple changes during adolescence may lower adolescents' school interests and pose additional risks to their psychological adjustment, especially resulting in higher occurrence of depressive symptoms (Ge, Conger, & Elder Jr, 2001). Achievement and psychological adjustment (e.g., depressive symptoms) are two important developmental domains of adolescence (Roeser & Eccles, 1998; Wigfield, Eccles, Fredricks, Simpkins, Roeser, & Schiefele, 2015). Succeeding academically and maintaining mental health continue to be important tasks for adolescents, given that academic achievement is a crucial indicator for future career success (Johnson, Brett, & Deary, 2010) and depressive symptoms in adolescence may lead to risky behavior and suicide later in life (Lehrer, Shrier, Gortmaker, & Buka, 2006; Kerr, Reinke, & Eddy, 2013).

Previous studies revealed a relatively consistent negative relationship between academic achievement and depressive symptoms among adolescents (for a review, see Riglin, Petrides, Frederickson, & Rice, 2014). This negative relationship is found across different ethnic groups, such as European American (e.g., Ansary, McMahon, & Luthar, 2011), African American (e.g., Lambert, Herman, Bynum, & Ialongo, 2009), Latino (e.g., Chalita, Palacios, Cortes, Landeros-Weisenberger, Panza, & Bloch, 2012) and Asian American/Asians (e.g., Ding, Shi, & Liu, 2012; Li & Zhang, 2008). The magnitude of the relationship is similar across different ethnic groups, with an average effect size of $-.12$ (Riglin et al., 2014).

As the relationship between achievement and depressive symptoms is generally found to be negative and due to Asian/Chinese American adolescents' academic success, one may assume that Asian/Chinese American adolescents, as a group, should have lower depressive symptoms than adolescents of other ethnic groups. However, higher levels and occurrences of depressive symptoms than other ethnic groups were found among Asian/Chinese American adolescents. For example, studies showed that, although Asian/Chinese American adolescents have higher grades (e.g., Hsin & Xie, 2014), lower drop-out rates (NCES, 2015) and attain higher education levels (U.S. Census Bureau, 2015) than their counterparts from other ethnic groups, they seem to experience higher levels of depressive symptoms and have higher suicide rates (Choi, & Meininger, & Roberts, 2006; Huntsinger & Jose, 2006). Therefore, although the relationship between achievement and depressive symptoms is also negative for Asian/Chinese American adolescents, given their high mean levels of depressive symptoms, they seem to be more susceptible to depressive symptoms even though they have higher achievement.

This paradoxical disconnect has drawn researchers' attention. However, there are very few studies exploring what factors are associated with these two important outcomes simultaneously. Adolescents do not live in vacuum and their development is influenced by the contexts in which they are embedded (Bronfenbrenner, 1977). Studying how family and

neighborhood, as two important contexts, contribute to this paradoxical disconnect is very important, and is the focus of the current study.

Family and Neighborhood as Two Important Contexts for Adolescents.

Family plays an important role in adolescent development. Parenting is shaped by culture (Ogbu, 1981). Chinese parenting is influenced by Confucian teachings, which emphasize the value of learning and effort (Chao, 1994). It is believed that parents have the responsibility to teach, and children have the responsibility to learn. When compared to their American counterparts, research demonstrates that Chinese parents, no matter if they reside in China or in the U.S., spend more time involved in their children's education from early childhood to adolescence (Pomerantz, Ng, & Wang, 2008; Pomerantz, Ng, Cheung, & Qu, 2014). Chinese American parents' greater involvement in their adolescents' learning may explain why Chinese American students are doing well in school. On the other hand, the Confucian concept of filial piety emphasizes adolescents' obedience and parents' authority. This traditional Chinese value held by parents may conflict with the American autonomy value likely held by their more acculturated adolescents. This difference in beliefs between adolescents and parents may create more family conflict and may impact the parent-child relationship negatively, which may increase depressive symptoms in Chinese American adolescents (Juang, Syed, & Takagi, 2007; Su Yeong Kim, Chen, Wang, Shen, & Orozco-Lapray, 2013).

Parenting is an important predictor of adolescent outcomes; yet, adolescent development and parenting behaviors are also influenced by the broader context. The neighborhood context can shape parenting and impacts several adolescent outcomes (Leventhal & Brooks-Gunn, 2000; Murry, Berkel, Gaylord-Harden, Copeland-Linder, & Nation, 2011). Research shows that the neighborhood context impacts adolescent outcomes indirectly via parenting (Jocson & McLoyd,

2015b; White, Roosa, & Zeiders, 2012). However, the previous literature on neighborhood, parenting and adolescent development has largely ignored adolescents from Chinese American families (Murry et al., 2011).

Chinese American families, like other ethnic minority families, tend to reside in neighborhoods with residents from the same ethnic backgrounds (Walton, 2015). Neighborhoods with one predominant ethnic group are referred as ethnic enclaves (Wilson & Portes, 1980). Living in an ethnic enclave together with the other ethnic minorities who come from a similar cultural background and speak the same language can generate more social ties and trust among residents (Walton, 2015). Among African-American and Latino parents, research suggests that these social ties and trust reduce stressors and provide parenting support, which in turn, can improve adolescents' achievement and mental health (Byrnes & Miller, 2012; Franco, Pottick, & Huang, 2010; White et al., 2012). This pattern of findings may also be true for Chinese American populations. However, ethnic enclaves in central cities can be high in poverty and may create segregation from other ethnic groups (Massey & Denton, 1988). Chinese American parents living in ethnic enclaves with fewer economic opportunities may suffer from economic stressors and thus have less time and energy to adapt to the new culture. Chinese American parents living in ethnic enclaves may be more likely to hold on to the traditional Chinese culture which emphasizes parents' authority and adolescents' obedience because of the lower pressure to assimilate to the new culture (J. Lee & Zhou, 2014). Meanwhile, schools provide multiple opportunities for Chinese American adolescents to interact with people of other ethnicities, which may press them to feel that their cultural traditions deviate from the norms of American society (Fuligni, 1998; Fuligni, Yip, & Tseng, 2002). Therefore, Chinese American adolescents may respond to their parents' demands of retaining Chinese cultural values with resistance or refusal, which may create more family conflict and increase depressive symptoms.

Further research is necessary to help understand why these discrepant achievement and mental health outcomes exist among Chinese American adolescents and how parenting and neighborhood characteristics are related to Chinese American adolescents' achievement and depressive symptoms. The proposed study will examine how neighborhood context (neighborhood disadvantage, ethnic concentration, and social cohesion) and parenting (parental involvement and parent-adolescent conflict) are related to Chinese American adolescents' achievement and depressive symptoms. In addition, the study will examine if parenting serves as a mediator between the neighborhood context and Chinese American adolescents' achievement and depressive symptoms. The following sections will provide theoretical frameworks that guide the proposed study, first focusing on the overarching conceptual framework, followed by specific parenting and neighborhood theories. The last theory section focuses on theories that explain why parenting may mediate the relationship between neighborhood and adolescent outcomes. After discussing relevant theories, a review of the substantive literature is provided.

Theoretical Frameworks

The overarching theoretical framework for the proposed study is Bronfenbrenner's (1977) ecological systems theory. Ecological systems theory maintains that youth are embedded in various contexts, which interact with each other to impact adolescents' development (Bronfenbrenner, 1977). According to Bronfenbrenner (1977), family and neighborhood are two important microsystems which both play important roles in adolescent development. According to Bronfenbrenner (1977), to study adolescent development effectively, we must examine how multiple systems jointly impact individuals. The joint impacts of neighborhood and family will be the focus of this study.

More importantly, ecological system theory proposes that the influence of a distal system (e.g., the neighborhood) might impact child and adolescent development through a proximal system (e.g., the family) (Bronfenbrenner, 1977; Bronfenbrenner & Morris, 2006). Thus, the proposed study will examine whether neighborhood (neighborhood disadvantage, ethnic concentration and social cohesion) impacts adolescents' development (achievement and depressive symptoms) indirectly through parenting (parental involvement and parent-adolescent relationship).

Theories of Parenting Effects

Ecological systems theory identifies the family as the primary context within which to study adolescent development. Parental involvement and parent-adolescent conflict are the two parenting variables that will be examined in the proposed study.

Parental involvement

Parental involvement refers to a variety of parental practices employed in order to promote children's academic achievement (Seginer, 2006). Parental involvement is a multidimensional concept including different types of parenting behaviors, such as volunteering in school activities, exchanging information with teachers, helping with homework, and attending parent-teacher conferences (Epstein, 2009; Hill & Taylor, 2004).

Hoover-Dempsey and Sandler's parental involvement process model (PIP, Hoover-Dempsey et al., 2005) provides the theoretical rationale for understanding the forms of parental involvement and why parental involvement matters for adolescents' achievement. Green, Walker, Hoover-Dempsey and Sandler (2007) categorize parental involvement into two types based on

where they take place: school-based involvement and home-based involvement. The proposed study will focus on these two types of parental involvement as they are the most widely used categorization of parental involvement by parents and researchers (Hayes, 2011; Hill & Taylor, 2004; E. M. Pomerantz, Moorman, & Litwack, 2007; Shumow & Miller, 2001). Home-based involvement refers generally to educational-related interactions between children and parents at home, such as helping children with homework and exams and keeping track of children's progress (Hoover-Dempsey et al., 2005). School-based involvement generally refers to parents' involvement behaviors at school, including participation in school activities and parent-teacher conferences, maintaining communication with teachers and being volunteers at school, and watching the performance of the adolescent in school activities (Green & Hoover-Dempsey, 2007; Hoover-Dempsey et al., 2005).

PIP also highlights the processes that underlie why parental involvement matters for achievement (Hoover-Dempsey et al., 2005). It is proposed that, through actively engaging in adolescent's learning, parents instill their beliefs in education and model learning behaviors to their adolescents. Therefore, parental involvement increases students' positive attitudes about school and education and regulates youth's school and study behaviors, which in turn promote academic achievement.

Parent-adolescent conflict

Adolescence represents a unique period in social development, with important changes occurring in relationships with parents. It is a time when peer relationships become increasingly important and adolescents try to be more independent and away from the family (Buhrmester, 1990; Jenkins, Goodness, & Buhrmester, 2002). Although adolescents are eager to be independent from parents, they are also trying to maintain the connections (Jenkins et al., 2002).

The parent-adolescent relationship remains an important bond that can provide support and connectedness for adolescent development.

Problems in parent-adolescent relationships are repeatedly considered to be one of the factors that increase the risks of depressive symptoms among adolescents. In line with attachment theory (Bowlby, 1969), adolescents have positive developmental outcomes (e.g., lower levels of depressive symptoms) when they maintain close relationships with their parents. Poor relationships characterized by more conflict with parents may increase depressive symptoms because such relationships deprive adolescents of support when facing emotional problems (Cobb, 1976).

Theories of Neighborhood Effects

Neighborhood disadvantage

Social disorganization theory (Shaw & McKay, 1942) emphasizes how neighborhood structural characteristics, such as neighborhood disadvantage and ethnic heterogeneity, impede the process by which communities get together to achieve shared goals and norms, which have implications for residents' well-being.

Neighborhood disadvantage, usually known to be concentrated poverty and the corresponding characteristics (e.g., high unemployment rate within neighborhood, low levels of education, female-headed households) produces an adverse effect on social organization, which leads to residents' limited abilities to develop strong social ties and achieve shared norms of monitoring unaccepted behaviors within a community (Deng et al., 2006). Due to neighborhood disadvantage, the community may fail to effectively and collectively regulate youth behavior and convey education-related norms, expectations, as well as values that bring about satisfactory

educational results (Leventhal & Brooks-Gunn, 2000). Unemployed adults lingering on the streets may impact adolescents' beliefs about their future and may decrease their educational expectations and academic achievement (Murry et al., 2011).

Also, social as well as physical disorders in disadvantaged neighborhoods can be environmental stressors, which put adolescents at a higher risk of developing depressive symptoms (Wandersman & Nation, 1998). Mistrust and fears, which are more prevalent in disadvantaged neighborhoods, are psychological stressors that pose risks for residents' psychological well-being (J. Kim, 2010; Ross & Jang, 2000; Ross & Mirowsky, 2001).

Ethnic concentration

Similar to neighborhood disadvantage, social disorganization theory maintains that ethnic heterogeneity in the neighborhood decreases the likelihood that neighbors from different ethnic backgrounds form strong community ties and develop shared norms towards acceptable behaviors. On the contrary, if the majority of people living in the neighborhood are from the same ethnic background and speak the same language, they are more likely to trust each other and have similar expectations regarding adolescent behavior. Related to the current study, if more Chinese Americans are living in the neighborhood, residents are more likely to maintain traditional Chinese cultural values, one of which is the great emphasis on learning and efforts. With the shared values of education, parents are more likely to have higher educational expectations for their adolescents and be more involved in adolescents' learning. Influenced by the shared values of emphasizing education in the neighborhood and family, adolescents are more likely to value education internally and invest in their education.

Living in an ethnic enclave may be beneficial for adolescents' education, however, it may also be a risk factor for adolescents' mental health (i.e., depressive symptoms). In line with the

residential segregation hypothesis (Massey & Denton, 1988), when the racial/ethnic groups are highly concentrated within a neighborhood, the mental well-being may be damaged due to residential segregation (Mair et al., 2010). Due to reasons such as limited economic opportunities, ethnic minority groups may choose to live in a certain area, which creates economically and socially segregated ethnic enclaves (Mair et al., 2010). Being physically disadvantaged, these segregated neighborhoods put residents at a higher risk of developing depression (Iceland & Scopilliti, 2008; Mair et al., 2010; Williams & Collins, 2001). In other words, ethnic concentration may be a proxy for the physically deteriorated environment. Therefore, the reason that greater ethnic concentration may negatively impact mental health is due to the fact that stressors are more prevalent in these segregated neighborhoods and there are fewer quality resources to alleviate stressors.

Social Cohesion

In addition to the objective assessment of neighborhood structural factors (disadvantage and ethnic concentration), perception of social processes in the neighborhood may also impact adolescents' achievement and depressive symptoms. Jencks and Mayer's collective socialization model (1990) can be used as a basis to understand how neighborhood social processes affect adolescent achievement and depressive symptoms. Residents in a neighborhood that are cohesive and high in mutual trust can build strong social cohesion with neighbors. The collective socialization model, argues that the strong social ties among neighbors can promote consensus regarding shared norms and acceptable youth behavior. With high social cohesion in the neighborhood, adult residents are more likely to collectively regulate youth behavior in their neighborhoods. With the strong social ties and information exchange in the neighborhood, parents can seek out support and advice from other parents in the neighborhood when they encounter

child-rearing problems. Also, successful parents in the neighborhood can model more supportive parenting strategies to other parents, which can result in more supportive parenting and in turn impact adolescent development. Moreover, strong social ties may be beneficial for adolescent mental health because they provide social supports that are strongly needed by adolescents to deal with multiple changes and the stress associated with that in their lives (Kawachi & Berkman, 2001).

Theories Suggesting the Mediating Role of Parenting

The previous sections have discussed how neighborhood and family separately and directly impact adolescents. However, as two important contexts that adolescents' are embedded in, they may jointly impact adolescents. One way to explore their joint effects is to consider neighborhood as a more distal system and family as the proximal system (Bronfenbrenner, 1977), in which neighborhood indirectly impacts adolescents by shaping parenting. The family stress model (K. J. Conger, Rueter, & Conger, 2000) and the integrative model (García Coll et al., 1996) provide the theoretical rationale for the mediating role of parenting between neighborhood context and adolescent development and will be discussed in the following section.

The Family Stress Model

Many of the previous studies in neighborhood, parenting, and adolescent used the family stress model (K. J. Conger et al., 2000; R. D. Conger, Ge, Elder, Lorenz, & Simons, 1994) as a basis to understand the relationships between neighborhood, parenting and adolescent outcomes (Barajas-Gonzalez & Brooks-Gunn, 2014; Jocson & McLoyd, 2015). The family stress model

emphasizes the importance of economic resources and how the lack of such resources influences parenting and then impact adolescents. The family stress model assumes that the development of children and adolescents can be affected by families' economic hardship indirectly via a series of family processes.

According to the family stress model, neighborhood disadvantage can adversely affect adolescents' development by disrupting parenting behaviors (Potochnick & Mooney, 2015). Neighborhood disadvantage may limit parents' ability to function positively and effectively partly because they have to deal with stressors more or less by themselves (Vilhjalmsdottir, Gardarsdottir, Bernburg, & Sigfusdottir, 2016). Everyday exposure to the stressors in the neighborhood may generate a sense of distress and anxiety among residents (Potochnick & Mooney, 2015). For parents who live in disadvantaged neighborhoods, these negative feelings may produce adverse effects on their ability to form a harmonious relationship with their youth and to be effectively involved in youth's learning, which may have consequences for their youth's achievement and depressive symptoms.

The Integrative Model

The family stress model highlights that neighborhood disadvantage exerts stress on parents and thus disrupts parental involvement and a positive parent-adolescent relationship, which in turn decreases adolescents' achievement and increases their depressive symptoms. However, neighborhood can also have positive effects on adolescents through parenting. The integrative model (García Coll et al., 1996) proposed that neighborhoods can serve as either risk or protective factors for families and adolescents. Impoverished neighborhoods can exacerbate stress levels in families and impact parenting and adolescent development whereas supportive cohesive neighborhoods may reduce such stress. When considering social processes in the

neighborhood, it is possible that higher social cohesion reduces stressors and provides parents more social support. Therefore, parents may have more time and energy to invest in their adolescent's education and to form a good relationship with their youth, which in turn will be beneficial for adolescents' achievement and depressive symptoms.

Literature Review

Parenting and Its Relationship with Achievement and Depressive Symptoms among Chinese American Adolescents

Parental involvement and its relationship with achievement and depressive symptoms.

Researchers have increasingly acknowledged the impact of parents on youth's learning. Among parenting factors, parental involvement has received increasing attention for its beneficial effects on youth's learning (Benner, Boyle, & Sadler, 2016). For years, research has demonstrated that parental involvement is beneficial for kindergarten children's school readiness and elementary children's school performance (Cheung & Pomerantz, 2012; Desimone, 1999; Fan & Chen, 2001; Pomerantz, Kim, & Cheung, 2012; Wilder, 2014). Relatively fewer studies focused on parental involvement during adolescence. When children become adolescents, their need for autonomy and the complexity of school subjects increase, which may require parents to change their involvement strategies to meet the new needs of their children and school systems.

Studies have reported that as children grow up, the strategies parents employ to help them to learn change accordingly (Bhargava & Witherspoon, 2015; Hill & Tyson, 2009; Wang, Hill, & Hofkens, 2014). Research demonstrated that parental home-based involvement declines when youth move to middle and high school (Bhargava & Witherspoon, 2015), partly because parents do not believe they can still help their youth to deal with more difficult school subjects and partly

because they do not think their involvement is effective (Epstein & Lee, 1995; Gonida & Cortina, 2014; Hill & Chao, 2009). Moreover, parental school-based involvement also reduces as youth are in middle and high school. This is in part because the intricate composition of middle and high school make it harder for parents to get in touch with the teacher to gain knowledge of children's progress (Sanders & Epstein, 2000). Also, teachers in middle and high school have to manage a greater amount of students, which may limit their ability to interact frequently with one student and his/her parents (Eccles & Harold, 1996).

Although parental involvement decreases as youth move from elementary school to middle school, research shows that parental educational involvement is still important during this developmental period. To be specific, for adolescents, the main support still comes from parents (Collins & Laursen, 2004), and parents' educational involvement remains a powerful predictor of academic achievement throughout adolescence. According to a meta-analysis recently conducted by Hill and Tyson (2009), overall, parental involvement exerts a positive effect on academic achievement in middle school. School involvement had a small, but still significant relationship with academic performance. As for home involvement, its effects on achievement depended on the types of home involvement strategies. Particularly, helping children with homework failed to produce a significant effect, but providing appropriate structure and learning materials at home, was significantly and positively related to academic achievement. To date, the relationships between parental educational involvement and academic achievement have primarily been established with European American and African American families (Jeynes, 2003; Schnell, Fibbi, Crul, & Montero-Sieburth, 2015); more research is needed to understand parental involvement in other ethnic minority and immigrant families, as parental involvement may be shaped by immigrant parents' social positions and unique cultural values (García Coll et al., 2002; Ji & Koblinsky, 2009).

The types of parental involvement employed by Chinese American parents might be very different from American families given their unfamiliarity with the education system, long working hours, and language barriers. Furthermore, parental involvement, like other parenting behaviors, is influenced by culture. Chinese families' great emphasis on education is in part shaped by Confucianism (Jiménez & Horowitz, 2013; H. W. Stevenson & Stigler, 1992) and this may lead to Chinese American parents' higher level of involvement in their youth's learning. Confucius emphasizes the moral aspect of learning (Li, 2002, 2005) and considers academic achievement as the primary path to success (Stankov, 2010; Tan & Yates, 2011). Influenced by Confucianism, in the eyes of many Chinese American families, education is considered to be the only effective way for their children to enter into the upper level of the society (J. Lee & Zhou, 2014; Sue & Okazaki, 1990). It is believed that the focus on Confucianism has shaped Chinese American parents' behaviors and attitudes towards learning, which may explain their higher levels of parental involvement in their children's learning and in turn benefit Chinese American adolescents' academic achievement (Hsin & Xie, 2014). In this study, we will examine whether Chinese American parents' parental involvement is a significant contributor to Chinese American adolescents' achievement.

Compared to the literature on studying the relationships between parental involvement and academic achievement, there are fewer studies examining the influence that parental involvement might have on adolescent depressive symptoms. Adolescents experience multiple changes during adolescence, which may make transitions from elementary school to middle school very emotionally charging (Wang et al., 2014). In light with this, parenting behaviors that ease emotional stress can help decrease adolescents' depressive symptoms and smooth the transition to middle school. Research shows that through interactions with school and encouraging communication at home, adolescents' depressive symptoms can be effectively prevented (Bean, Barber, & Crane, 2006; Gonida & Cortina, 2014; Shumow & Lomax, 2002). A

recent study by Wang and Sheikh-Khalil (2014) demonstrated that parent-school involvement increased adolescents' emotional engagement at school, which in turn reduced adolescents' depression. It is possible that through communicating with teachers and adolescents, parents instill the value of education to adolescents and adolescents become internally motivated to learn, which is beneficial to their emotional well-being and alleviate their emotional distress (Grolnick, Kurowski, Dunlap, & Hevey, 2000).

Parent-adolescent conflict and its relationship with achievement and depressive symptoms.

Parental involvement in education may be protective and beneficial for Chinese American adolescents' achievement and depressive symptoms. Conversely, a negative parent-adolescent relationship or parent-adolescent conflict may be a risk factor for adolescents' achievement and depressive symptoms.

According to research on European American families, there is a link between the way parents communicate with their adolescent and adolescent depressive symptoms (Ge, Best, Conger, & Simons, 1996). A supportive parent-adolescent relationship reduces the likelihood of developing depressive symptoms, while harsh parent-adolescent relationship puts adolescents at risk of depressive symptoms (Ge, Best, Conger, & Simons, 1996; Leboviti, 2015). Nevertheless, it remains unclear whether these associations also exist among ethnic minority families, especially Chinese American families (S. Y. Kim & Ge, 2000).

Immigrant parents generally tend to retain their home country values and practices, while immigrant adolescents assimilate to the values and behaviors of the host culture more quickly (Costigan & Dokis, 2006). Chinese American parents who stick to traditional Asian values may apply parenting behaviors that are not in line with their youth's level of acculturation (Park, Kim, Chiang, & Ju, 2010). For example, traditionally, Chinese American parents highlight the value of

unquestioning obedience and require their children to value family obligations more than personal interests. However, for their adolescents, these requirements are in conflict with their desires for independence, a developmental task that is highlighted in the American culture (Phinney, Ong, & Madden, 2000). These different cultural values may increase communication difficulties and conflicts between parents and youth, increasing the likelihood of a negative parent-adolescent relationship. A recent study by Hou, Kim and Wang (2016) demonstrated that parent-adolescent conflict in Chinese American families was positively related to a sense of alienation between parents and adolescents, which leads to more depressive symptoms in adolescence. These findings support our hypothesis that parent-adolescent conflict might serve as a risk factor for Chinese American adolescents' depressive symptoms.

In sum, higher levels of parental involvement in Chinese American families can facilitate Chinese American adolescents' achievement. However, parent-adolescent conflict in Chinese American families might increase Chinese American adolescents' depressive symptoms.

Neighborhood and its relation with academic achievement and depressive symptoms among Chinese American adolescents.

Although parents play a crucial role in adolescent development, the neighborhood context shapes adolescent development as well (Bronfenbrenner, 1977).

Below I will review the previous literature on neighborhood disadvantage, ethnic concentration and social cohesion and their relationships with adolescent achievement and depressive symptoms.

Neighborhood Disadvantage and Achievement

Social disorganization theory suggests that neighborhood disadvantage has an impact on adolescents' achievement, however, empirical findings are mixed. Many correlational studies have demonstrated a strong neighborhood disadvantage influence on adolescents' academic achievement. Past research demonstrates that, in general, in comparison to adolescents who live in affluent neighborhoods and/or neighborhoods with more educated residents, adolescents in disadvantaged neighborhoods are at a higher risk of dropping out of high school (Crowder & South, 2003; Perreira, Harris, & Lee, 2006), having lower academic achievement (Ainsworth, 2002; Pong & Hao, 2007), and receiving less education (Mayer, 2002). Youth who live in neighborhoods with better conditions are more likely to have higher grades, in comparison to their peers residing in disadvantaged communities (Ainsworth, 2002; Gillock & Reyes, 1999).

Nieuwenhuis and Hooimeijer (2016) conducted a review and meta-analysis on 49 non-experimental studies exploring the associations between neighborhood disadvantage and academic achievement. The results of the meta-analysis showed that, overall, correlational studies found a negative relationship between neighborhood disadvantage and academic achievement.

This meta-analysis (Nieuwenhuis & Hooimeijer, 2016) demonstrated that non-experimental studies on neighborhood disadvantage and educational achievement yield a negative relationship between them. However, different from the results of non-experimental studies, quasi-experimental (Gautreaux) and experimental (Moving to Opportunity, MTO) programs that moved residents from disadvantaged neighborhoods to less disadvantaged neighborhoods do not find great improvements in adolescent academic achievement statistically (Kling & Liebman, 2004; Leventhal, Fauth, & Brooks-Gunn, 2005; Rosenbaum, 1995). Specifically, the Gautreaux program showed no GPA differences between African American students who moved to middle-income suburbs and those who moved to low-income urban neighborhoods (Rosenbaum, 1995).

In another housing relocation program (MTO), Kling and Liebman (2004) found no differences in reading and math scores for youth who moved to less disadvantaged neighborhoods and those who did not move. One explanation for the null or unexpected results in experimental studies is that moving residents to a different neighborhood interrupts previous social networks and social support. Even though the new neighborhood may be characterized by relative affluence and high-status neighbors, it may be hard for new residents to form strong social networks with other neighbors and new residents may perceive it as low in social cohesion. Adolescents may not benefit from the advantageous neighborhood as they are less likely to feel that they are cared for by neighborhood adults because of the lack of social support and social cohesion. This points to the importance of adolescents' perception of social processes in the neighborhood. Without obtaining adolescents' subjective perceptions of neighborhood positive social processes, it would be difficult to fully understand neighborhood effects on adolescents' development.

Neighborhood Disadvantage and Depressive Symptoms

Based on social disorganization theory, living in a disadvantaged neighborhood may have adverse impacts on residents' depressive symptoms due to stresses related to limited access to social and economic resources. Previous studies found that neighborhood disadvantage was significantly and positively related to adolescent depressive symptoms (Aneshensel & Sucoff, 1996; Browning & Cagney, 2003; Dunn, Milliren, Evans, Subramanian, & Richmond, 2015; Graif, Arcaya, & Ana, 2016; Wickrama & Bryant, 2003; Yen & Kaplan, 1999). For example, Wickrama & Bryant (2003) explored the relationships between neighborhood disadvantage and adolescent depressive symptoms in a national longitudinal sample (NELS). The results showed that higher levels of neighborhood disadvantage was related to higher levels of adolescent depressive symptoms, even after taking accounting for family and individual characteristics.

Although previous studies demonstrated that there is a link between neighborhood disadvantage and adolescents' depressive symptoms, the literature has largely ignored adolescents from Chinese American families (Murry et al., 2011). Most studies on depressive symptoms of Chinese/Asian American adolescents focus on family influences (Juang et al., 2007; S. Y. Kim & Ge, 2000) but ignore the role of the broader context (e.g., neighborhood). One study that included neighborhood effects (E. H. Lee et al., 2014) revealed that higher levels of neighborhood disadvantage were related to higher levels of Chinese American children's internalizing behavior. However, this study was conducted among younger children and in California where Chinese American families have lower poverty rates than their counterparts living in other areas in the U.S (Lee et al., 2014). Therefore, more studies are needed to explore the association between neighborhood disadvantage and Chinese American adolescents' depressive symptoms among Chinese American families in other areas of the U.S.

Neighborhood Ethnic Concentration and Depressive Symptoms

Based on the residential segregation hypothesis (Massey & Denton, 1988), greater neighborhood ethnic concentration may have adverse effects on adolescents' depressive symptoms. The relationship between neighborhood ethnic concentration and depressive symptoms may be different for different racial/ethnic groups. For African Americans, greater co-ethnic concentration was associated with more depressive symptoms (K. White & Borrell, 2011), which may reflect African Americans' history in the US and structural racism (Schulz et al., 2008; K. White & Borrell, 2011). Conversely, for recent Latino immigrants in the U.S., researchers found that higher ethnicity concentration was related to lower levels of depressive symptoms (M.-J. Lee & Liechty, 2015). Although neighborhood research is limited with Chinese American, research suggests that the patterns for Chinese Americans may be similar to African

Americans. Lee and colleagues (2014) found that neighborhood Asian concentration predicted more internalizing problems among Chinese American children (6-9 years old). Also, Hong, Zhang and Walton (2014) found that neighborhood ethnic density was related to Asian American adults' poor mental health. These studies showed that Asian concentration within the neighborhood may be a risk factor for Chinese Americans' depressive symptoms. Although these studies were conducted among Chinese American children or adults, the relationship between ethnic concentration and adolescent depressive symptoms may be similar or even stronger than that for children and adults, given that adolescence is a period of higher risk for developing depressive symptoms.

Neighborhood Ethnic Concentration and Achievement

Based on social disorganization theory, a greater proportion of co-ethnic neighbors may positively affect adolescent academic achievement given that strong social ties and shared norms are more easily formed among neighbors from the same ethnic background. A great proportion of co-ethnic neighbors can also provide ethnic minority adolescents with a sense of belonging (Leventhal & Shuey, 2014) and valuable professional, culturally based and social resources (Zhou & Kim, 2006) that can help them succeed academically.

Compared to studies on ethnicity concentration and mental health, there are very limited studies on neighborhood ethnic concentration and achievement. Of the studies that have focused on the associations between neighborhood ethnic concentration and achievement, Blau, Lamb, Stearns, and Pellerin (Blau, Lamb, Stearns, & Pellerin, 2001) found that neighborhood diversity was unrelated to achievement (Blau et al., 2001), whereas Richard, Bowen and Blau (2006) demonstrated that neighborhood diversity was related to higher levels of school drop-out rates.

More studies are needed to examine how neighborhood ethnic concentration is related to adolescents' academic achievement.

Neighborhood Social Cohesion and Achievement

Along with neighborhood structural characteristics, perceptions of the neighborhood social processes can also influence adolescent development. Social cohesion has been widely used in neighborhood studies to describe positive neighborhood social processes and emphasizes the importance of adult role models, social capital, mutual trust in neighbors, exchange of help and information between neighbors. Adults within the community set normative boundaries and expectations that they enforce through social networks and monitoring of youth's behaviors. Through interactions with youth, parents, and adults in the neighborhood pass down their educational expectations and values of efforts to youth, meanwhile, they model expected behaviors to youth (Jencks & Mayer, 1990). Moreover, success in their education and careers provide adolescents role models to look up to and thus their behaviors may become shared norms among adolescents (Ainsworth, 2002)

In general, research finds that neighborhood social cohesion is related to higher levels of achievement (Plybon, Edwards, Butler, Belgrave, & Allison, 2003; Woolley & Bowen, 2007). Plybon and his colleagues (2003) found that found that higher levels of perceived neighborhood social cohesion were related to higher levels of African American female adolescents' school self-efficacy and grades. Research also showed that even after controlling for a variety of family- and school-level variables, higher levels of neighborhood social interactions were still related to higher levels of educational aspirations, self-efficacy and grades (Woolley & Grogan-Kaylor, 2006).

Neighborhood Social Cohesion and Depressive Symptoms

Strong social ties in the neighborhood create an environment characterized by high levels of connectedness, which ameliorates depressive symptoms. On the other hand, a lack of social ties may lead to feelings of loneliness and hopelessness, which may worsen depressive symptoms (Abada, Hou, & Ram, 2007). Previous studies showed that perceived neighborhood social cohesion was positively related to lower levels of depressive symptoms in White, Black and Latino adolescents (Abada et al., 2007; Aneshensel & Sucoff, 1996; Dupéré, Leventhal, & Vitaro, 2012; Evans-Polce, Hulbert, & Latkin, 2013; Gutman & Sameroff, 2004). However, there is no work that examines the relationship between neighborhood social cohesion and Chinese American adolescents' depressive symptoms.

In sum, previous studies suggest that neighborhood disadvantage, neighborhood ethnic concentration and collective efficacy impact adolescent achievement and mental health. However, more studies are needed to test whether the relationships among neighborhood context and adolescent development outcomes are similar for Chinese American adolescents. Furthermore, given that these three neighborhood domains (disadvantage, ethnic concentration, and social cohesion) co-occur for many youth, it is necessary to include them simultaneously in a more comprehensive model and examine their unique associations to Chinese American adolescents' achievement and depressive symptoms.

Neighborhood, Parenting, and Youth Outcomes

Past research studying neighborhood context and parenting has mostly measured neighborhood using its structural characteristics, such as neighborhood disadvantage and ethnic heterogeneity and operationalized parenting as warmth or monitoring. These studies showed that

parental warmth and monitoring mediated the relationship between neighborhood disadvantage and internalizing (Caughy, Nettles, & O'Campo, 2007; Meyers & Miller, 2004). These findings lend support to the hypothesis that parenting behaviors may mediate the relationship between neighborhood characteristics and adolescent development.

Although past research on neighborhood and parenting usually focused on monitoring and harsh parenting as the parenting variables, other parenting behaviors are also essential for adolescent development and can be shaped by neighborhoods (Kohen, Leventhal, Dahinten, & McIntosh, 2008). Of the few studies on neighborhood context and parental involvement, among African American families, Waanders, Mendez, & Downer (2007) found that perceived neighborhood disorder was not associated with school- or home-based involvement. However, Bhargava and Witherspoon (2015) demonstrated that among Black and White families, neighborhood structural characteristics and social processes shaped parental involvement, with differential relationships found for neighborhood structural and social characteristics and various forms of parental involvement. Contrary to the predictions, results showed that neighborhood disadvantage was associated with higher levels of home-based and school-based communication, whereas, social cohesion was negatively related to school-based involvement when youth were in 7th grade. One reason for these results is that parents in disadvantaged neighborhoods may use more parental involvement strategies as a way to provide youth an opportunity to achieve better educational outcomes in order to move up the social ladder and as a way to keep their youth away from risks in the neighborhood. These studies were conducted with other racial-ethnic groups so it is an open question whether these findings replicate for Chinese American families. Chinese American parents may respond to neighborhood disadvantage in similar or different ways as their Black and White counterparts.

Moreover, when examining the associations between neighborhood, parenting and adolescents' outcomes, it is very important to include other structural neighborhood variables

beyond disadvantage. Based on social disorganization theory, neighborhood ethnic concentration may also impact adolescents' outcomes indirectly via parenting. A greater concentration of Chinese American neighbors may also help spread and consolidate Chinese cultural norms. For instance, a previous examination of Chinese American families found that those residing in neighborhoods with a higher ethnic concentration (i.e., a larger proportion of Asian residents) had parents who were more likely to endorse authoritarian parenting behaviors (E. H. Lee et al., 2014), which is a parenting type that is more frequently found in Chinese families than American families. Although, as I acknowledge, so far no studies have examined how Chinese American concentration is related to cultural norms such as great emphasis on education, it is possible that a greater proportion of Chinese Americans in the neighborhood would increase parents' endorsement of Chinese cultural beliefs related to education, which may, in turn, increase their educational involvement and ultimately increase adolescents' achievement.

However, only using census-type variables (disadvantage and/or ethnic concentration) might fail to provide how people actually feel about their neighborhood (Leventhal & Brooks-Gunn, 2000). In accordance with the collective socialization model, the social processes of the neighborhood also play an important role in shaping parenting. Cuellar, Jones and Sterrett (2015) found that parents' reports of neighborhood disengagement (lack of social ties in neighborhoods) were positively related to parental warmth and negatively related to monitoring, which in turn, impacted youth's externalizing behaviors. In another study by Kohen, Leventhal, Dahinten and McIntosh (2008), social cohesion was positively associated with family functioning and negatively related to maternal depression. Higher levels of family functioning, in turn, was related to a higher level of consistent parenting and lower levels of punitive parenting. Furthermore, studies demonstrated that subjective assessments of neighborhood context are more powerful predictors of parenting (Byrnes & Miller, 2012), given that when objective and subjective

measures of neighborhoods are both included, only subjective evaluations of neighborhoods were significantly associated with parenting.

What has received less empirical attention, however, is the consideration of multiple neighborhood characteristics (neighborhood disadvantage, ethnic concentration, and social cohesion) in a single model in order to examine the unique associations with adolescents' multiple outcomes (achievement and depressive symptoms), as well as their indirect paths through multiple parenting variables. Given that these three neighborhood characteristics co-occur for many youth, examination of this more comprehensive model is necessary in order to get more accurate insights about their complicated relationships.

Past research on neighborhood context, parenting, and adolescent outcomes has largely ignored youth from Chinese American families (Murry et al., 2011). One of the reasons for this may be that the neighborhood literature usually focuses on particular adolescent outcomes such as problem behaviors and only recently has extended to include academic achievement and depressive symptoms. From this perspective, Chinese American adolescents seem to be trouble free given that in general they are higher achievers (Hsin & Xie, 2014; J. Lee & Zhou, 2014; A. Liu & Xie, 2016) and have lower levels of externalizing behaviors than their counterparts of other ethnic groups (Gershoff, Lansford, Sexton, Davis-Kean, & Sameroff, 2012). To-date, only two studies on neighborhood context, parenting and child/adolescent outcomes exist with Chinese American families. From these two studies, we know that neighborhood disadvantage and Asian concentration affected Chinese parents' practices and parenting style. Specifically, higher levels of neighborhood disadvantage were related to lower levels of monitoring but was not related to harsh discipline in Chinese American families living in California (L. L. Liu, Lau, Chen, Dinh, & Kim, 2009). In another study, greater neighborhood Asian concentration was associated with greater endorsement of authoritarian parenting style (Lee et al., 2014). Although these two studies have started to examine the relationship between neighborhood and parenting in Chinese

American families, they have some limitations. First, they were both conducted in California, where the average family income of Chinese American families is higher than the national average for this population. Second, they only focused on parenting style or parental monitoring, but ignored parental involvement and parent-adolescent conflict, which are important domains of parenting that contribute to adolescent achievement and depressive symptoms. Last, the studies only focused on neighborhood structural characteristics and did not include subjective assessment of the social processes in the neighborhood. Therefore, studies are needed to examine how neighborhood social processes are related to parenting and adolescent outcomes within Chinese American families in other areas in the U.S. Also, studies are needed to explore if multiple neighborhood aspects influence Chinese American adolescent achievement and depressive symptoms through parenting. For example, it may be important to take multiple structural aspects of the neighborhood (e.g., disadvantage and ethnic concentration) into consideration, concurrent with social processes, in order to fully understand how parenting matters for outcomes.

Chapter 2

The Current Study

Past research on neighborhood, parenting and adolescent outcomes largely ignores Chinese American families. With the increasing population of Chinese Americans in the United States and the paradoxical disconnect between achievement outcomes and depressive symptoms, it is important to understand the roles of neighborhood and parenting in Chinese American adolescents' academic outcomes and depressive symptoms. Moreover, to-date research on neighborhood, parenting and adolescent outcomes including Chinese American families has only focused on structural characteristics of neighborhood and ignored social processes in the neighborhood and how they may impact adolescents' outcomes. The proposed study explored

how neighborhood and parenting conjointly acted as two important contexts that impact Chinese American adolescents' achievement and depressive symptoms. Furthermore, the proposed study included a set of neighborhood variables that capture both structural and social aspects of the neighborhood in order to better understand their unique associations with adolescents' multiple outcomes (achievement and depressive symptoms), as well as their indirect associations through multiple parenting variables.

The purpose of the present study was three-fold (See Figure 2-1). First, the study examined whether three neighborhood variables (i.e., neighborhood disadvantage, ethnic concentration and social cohesion) were associated with Chinese American adolescents' achievement and depressive symptoms longitudinally. Second, the study examined if the three parenting variables (i.e., parental school involvement, parent home involvement and parent-adolescent conflict) were associated with Chinese American adolescents' achievement and depressive symptoms. Third, given that neighborhood may impact adolescent development indirectly via parenting, the study examined whether parental involvement and parent-adolescent conflict mediated the relationship between neighborhood characteristics and Chinese American adolescents' achievement and depressive symptoms.

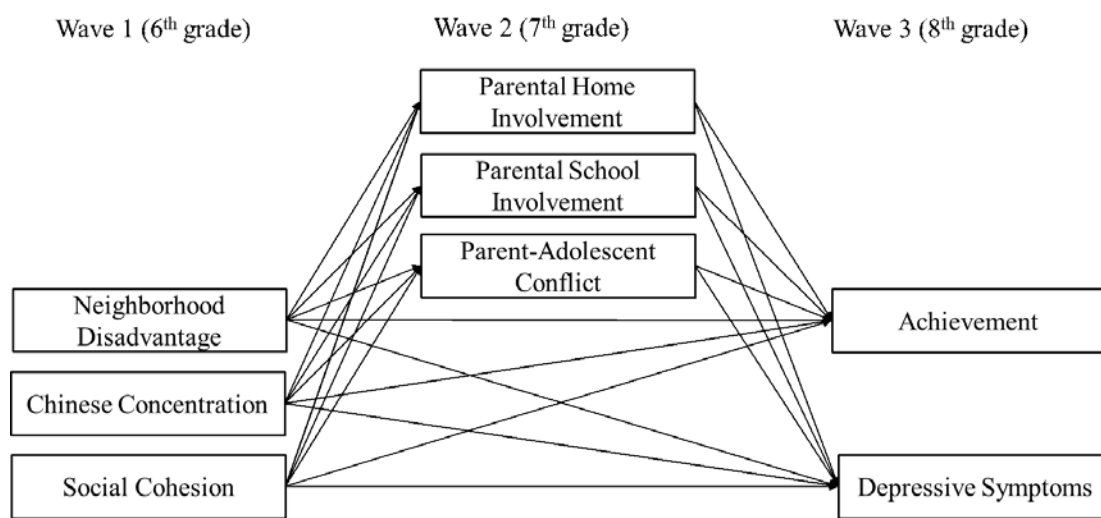


Figure 2-1. Conceptual Model

Research Questions & Hypotheses

Three research questions guide this study: (1) Were specific neighborhood characteristics (neighborhood disadvantage, social and ethnic concentration) at 6th grade associated with Chinese American adolescents' academic achievement and depressive symptoms at 8th grade? (2) Were parental home involvement, school involvement and parent-adolescent conflict at 7th grade associated with Chinese American adolescents' academic achievement and depressive symptoms at 8th grade? (3) Did parental home and school involvement, and parent-adolescent conflict mediate the associations between the neighborhood context and adolescents' academic achievement and depressive symptoms? To address these research questions, I examined the following hypotheses:

Hypothesis 1a: According to social disorganization theory, I anticipated that neighborhood disadvantage was negatively related to Chinese American adolescents' achievement and positively associated with depressive symptoms at 8th grade.

Hypothesis 1b: Based on social disorganization theory, I hypothesized that Chinese American concentration was positively related to achievement at 8th grade. However, based on the racial segregation hypothesis, Chinese American concentration was negatively associated with depressive symptoms longitudinally.

Hypothesis 1c: Based on the collective socialization model, I hypothesized that social cohesion at 6th grade was positively associated with achievement and negatively associated with depressive symptoms at 8th grade.

Hypothesis 2a: Based on the Parental Involvement Process model, I hypothesized that higher levels of parental home and school involvement at 7th grade were related to higher achievement and lower levels of depressive symptoms at 8th grade.

Hypothesis 2b: Based on the attachment theory, I anticipated that negative parent-adolescent relationship at 7th grade was negatively related to achievement and positively associated with depressive symptoms at 8th grade.

Hypothesis 3a: Based on the family stress model, I hypothesized that neighborhood disadvantage was negatively related to parental home and school involvement, and positively related to parent-adolescent conflict.

Hypothesis 3b: Based on social disorganization theory, I hypothesized that neighborhood Chinese concentration was positively related to parental home and school involvement and parent-adolescent conflict.

Hypothesis 3c: Based on the collective socialization and integrative models, I hypothesized that neighborhood social cohesion was positively related to parental home and school involvement and negatively related to parent-adolescent conflict.

Hypothesis 3d: Furthermore, based on the Family Stress and Integrative models, I anticipated that the relationship between neighborhood variables and adolescents' achievement and depressive symptoms was mediated by parental home and school involvement and parent-adolescent conflict. I anticipate partial mediation.

Chapter 3

Methods

Sample

Data for this study were taken from the Early Adolescent Cohort study (EAC). EAC is a mixed-method, multi-informant (i.e., parents and adolescents) study examining how multiple contexts impact adolescent development from middle to high school (see Witherspoon & Hughes, 2014, for more detailed information). The EAC study includes data from two cohorts. Data of the first cohort was first collected during the spring of 2004, and the data of the second cohort was first collected during the spring of 2005. Each cohort was followed from 6th to 11th grade and was surveyed once a year. The current study used the adolescent data for middle school (Wave 1: when adolescents were at 6th grade; Wave 2: when adolescents were at 7th grade; Wave 3: when adolescents were at 8th grade).

The EAC includes a diverse sample of adolescents from different ethnic backgrounds ($N = 1055$ at 6th grade) and has a relatively large sample of Chinese American adolescents from 6th grade to 8th grade ($N = 223$, including all participating Chinese American adolescents). One hundred and thirty-one Chinese American youth participated in wave 1 (6th grade). Seventy-two percent of the 131 youth ($N = 92$) participated at wave 2. Approximately 68% of the youth participated at wave 3 (8th grade) ($N = 88$). Additionally, 35 adolescents participated in this study at wave 2 when they were in 7th grade and 82% of them participated at 8th grade ($N = 28$). Fifty-seven extra adolescents were recruited in 8th grade. To maximize sample size to achieve the greatest power, all participating Chinese American adolescents ($N = 223$) were included in this study.

A series of t-tests showed that there are no significant differences in gender, generational status, and maternal educational level between adolescents recruited at 6th, 7th, and 8th grades. Of all the adolescents, approximately 47% were female. Gender was missing for 2 adolescents. These two adolescents had missing data on all variables and thus were excluded from further analyses. Generational status was available for 194 adolescents (87%). Of these adolescents, 70% were second generation (youth were born in the U.S. with at least one foreign-born parent), 26% were first generation (youth were born abroad and at least one parent born abroad), and 4% were third generation (youth and both parents were all born in the U.S.). Participants lived in 29 census tracts. Adolescent-reported mother's education level was available for 216 mothers (97% of the participants). Forty-four percent of mothers completed college or beyond and 14% did not complete high school. Additional demographic information (maternal age and marital status) was only available for a randomly selected sample of mothers ($N = 42$) who participated in the qualitative part of the overall EAC study. Of these mothers, 79% were married ($N = 33$) and 32 mothers were married to the adolescent's biological father. Mothers were 44.24 years old ($SD = 5.45$).

Measures

Neighborhood disadvantage

Neighborhood disadvantage was measured using the 2000 U.S. census tract data. Adolescents reported their home address, which was then geocoded to determine their census tract. Eighty-seven adolescents provided their addresses, and they lived in 29 census tracts (i.e., neighborhoods). A neighborhood disadvantage index was composed by averaging the standardized mean of four variables: each tract's percentages of adults aged 25 and over without a

high school diploma, unemployed adults aged 16 years and older, female-headed households, and family average income below the federal poverty level. These indicators have been commonly used in prior empirical work as measures of neighborhood disadvantage (Leventhal & Brooks-Gunn, 2000; Witherspoon & Ennett, 2011). In this sample, youth lived in neighborhoods where 15% of the households were female-headed, 46% of the adults aged 16 years and older were unemployed, 29% of the families' incomes were below the federal poverty level, and 52% of the adults did not have a high school diploma. The standardized score for neighborhood disadvantage ranged from -2.80 to 1.90.

Chinese American concentration

Chinese American concentration comes from the 2000 U.S. census; scores indicate the proportion of Chinese American residents living within a census tract and was calculated by dividing the number of Chinese American residents within the tract by the total population of the tract. Chinese American neighborhood concentration ranged from 0.17% to 87.34% ($M = 46.70\%$, $SD = 31.35$). On average, adolescents in this study lived in neighborhoods where almost half of the residents identified as Chinese. Due to the reason of skewness and based on the literature (Qadeer & Agrawal, 2009; Waldinger & Bozorgmehr, 1996), Chinese concentration was recoded to 0 = 0 - 20% (no concentration to some concentration) 1 = 20% - 49% (secondary concentration), 2 = 50% and beyond (primary concentration).

Neighborhood Social Cohesion

Neighborhood social cohesion was measured at wave 1 (6th grade) with the social cohesion subscale of the Collective Efficacy Scale (Sampson, Raudenbush, & Earls, 1997). It

assesses adolescents' feelings of mutual trust and social ties within neighborhoods. This scale has been used with an Asian/Chinese American sample and showed adequate reliability (Kandula, Wen, Jacobs, & Lauderdale, 2009)). The social cohesion subscale includes 4 items (e.g., "People in your neighborhood are willing to help each other out") rated on a 4-point Likert scale ranging from 1 (Completely disagree) to 4 (Agree a lot). Scores of the 4 items were averaged to create a mean score for neighborhood social cohesion. The measure demonstrated good reliability ($\alpha = 0.74$). Higher scores indicate that youth feel greater cohesion. On average, youth were ambivalent about whether they had a feeling of closeness with their neighbors and felt that their neighbors could be trusted ($M = 2.65, SD = 1.06$).

Parental School Involvement

Parental school involvement was measured using the school involvement subscale of the parental involvement scale developed by Hill, Witherspoon, and Teo (unpublished). Although this measure has not been used among Chinese American samples, similar measures with similar items demonstrate good reliability with Asian American samples (Sehee, Hong & Ho, 2005). Six items were used in this study. Scores of parental school involvement at wave 2 (7th grade) were used in this study. Adolescents were asked to indicate how often their parents contacted school teachers and participated in school activities (e.g., how often has one of your parents volunteered at your school?). Items were originally rated on a 4-point scale from 0 (Never) to 3 (All the time). However, the average score was low with relatively limited variance ($M = 0.41, SD = 0.47$) and the distribution of the score was non-normal. Therefore, this variable was dichotomized. For each item, if adolescents indicated that their parents used a strategy (indicated by a raw score of 1, 2 or 3), adolescents received 1 for that item. If the adolescents indicated that their parents did not use a strategy (a raw score of 0), then the item was coded as 0. The scores of six items were summed

and a higher score indicates higher levels of parental school involvement. The measure demonstrated acceptable reliability with Kuder-Richardson 20 reliability analysis ($KR-20 = 0.77$).

Parental Home Involvement

Parental home involvement, at wave 2 (7th grade), was measured using the home involvement subscale of the parental involvement scale developed by Hill, Witherspoon, and Teo (unpublished). Similar measures with similar items demonstrate good reliability with Asian American samples (Suizzo & Stapleton, 2007). This subscale includes 8 items. Adolescents were asked to indicate how often their parents helped them with school work or asked them about school (e.g., how often has one of your parents helped you study for a test?). Items were rated on a 4-point scale from 0 (Never) to 3 (All the time). A higher score indicates higher levels of parental home involvement ($M = 1.16$, $SD = 0.74$). On average, parents helped their youth with school work or asked them about school frequently. The measure demonstrated good reliability ($\alpha = 0.89$).

Parent-adolescent conflict

Parent-adolescent conflict was assessed with the Network of Relationships Inventory (NRI) (Furman & Buhrmester, 1985) at wave 2 (7th grade). This measure has been validated and used in Chinese American adolescent samples and showed good reliability (Chen, Chen, Kaspar, & Noh, 2000). The conflict subscale of the NRI was used in this study to assess parent-adolescent conflict. It contains three items (e.g., How much do you and this person argue with each other?) and is rated on a 5-point scale from 1 (Little or none) to 5 (The most). Adolescents were asked to rate their conflicts with mother and father separately; ratings for mother and father were

averaged. Higher scores indicate greater levels of parent-adolescent conflict ($M = 1.98$, $SD = .82$). The measure had good reliability ($\alpha = 0.87$).

Academic achievement

Academic achievement was assessed with adolescents' self-reported grades. Adolescents rated their grades, from their last report card, in four subject areas – math, language arts, science, and humanities/social studies. The scale was from 1 (100-95) to 8 (equals 55). Adolescents' scores at wave 3 (8th grade) were used in this study. Adolescents' reports of their core subjects were reverse coded and averaged to create a score for their achievement ($M = 5.82$, $SD = 1.41$). Higher scores indicate higher academic achievement. On average, youth in this study had a score of approximately 85 out of 100, which is B in letter grade.

Depressive symptoms

Depressive symptoms were measured using 10 items from the Children's Depression Inventory (CDI) (Kovacs, 1992). This measure has been validated and used in Chinese American adolescent samples and demonstrated adequate reliability (Way & Chen, 2000). Adolescents were asked to choose from three descriptions of 10 situations which best applied to them (e.g., "I am sad once in a while," "I am sad many times," "I am sad all the time."). Scores were rated on a 0-2 scale. Adolescents' scores at wave 3 (8th grade) were used in this study. The 10 items were averaged to create a depressive symptoms score for each adolescent. Higher scores indicate more depressive symptoms ($M = 0.31$, $SD = 0.35$). As scores of depressive symptoms were skewed, square roots transformation was used to transform the scores to be normal distributed. The measure demonstrated good reliability ($\alpha = 0.83$).

Covariates

Maternal education background, youth's generational status, and youth's gender will be used as covariates in all analyses.

Planned Analyses

Preliminary Analysis

First, missing data analyses were performed to determine the degree of missingness in all study variables. Second, I examined the attrition rate at wave 3 and investigate demographic, achievement or depressive symptom differences in participants who completed measures at wave 1 (6th grade) but did not complete measures at wave 3 (8th grade). Next, due to the nested nature of the sample (participants are nested in neighborhoods), I examined the intraclass correlation coefficient (ICC) for all variables, except for neighborhood disadvantage and Chinese concentration, to test the variance explained by grouping variables (census tracts). If a significant portion of variance is explained by the neighborhood, robust standard errors were used to handle the violation of the assumption of independent errors (Hox, Maas, & Brinkhuis, 2010). Last, Full Information Maximum Likelihood was used to handle missing data. Mplus provides means and standard deviations for all study variables with EM parameters. Correlation analyses between all variables were conducted.

Substantive Analysis

The path analysis model in Figure 3-1 was tested using Mplus 7.4, with maximum likelihood estimation and bootstrap. Path analysis allows for the simultaneous testing of multiple

relationships between constructs. Maternal education background, youth's generational status, and youth's gender were included as covariates. According to the general rules-of-thumb of sample size developed by Bentler & Chou (1987) and Nunnally (1967), which ranges from 5 or 10 observations per estimated parameter, the study was adequately powered to test the proposed model.

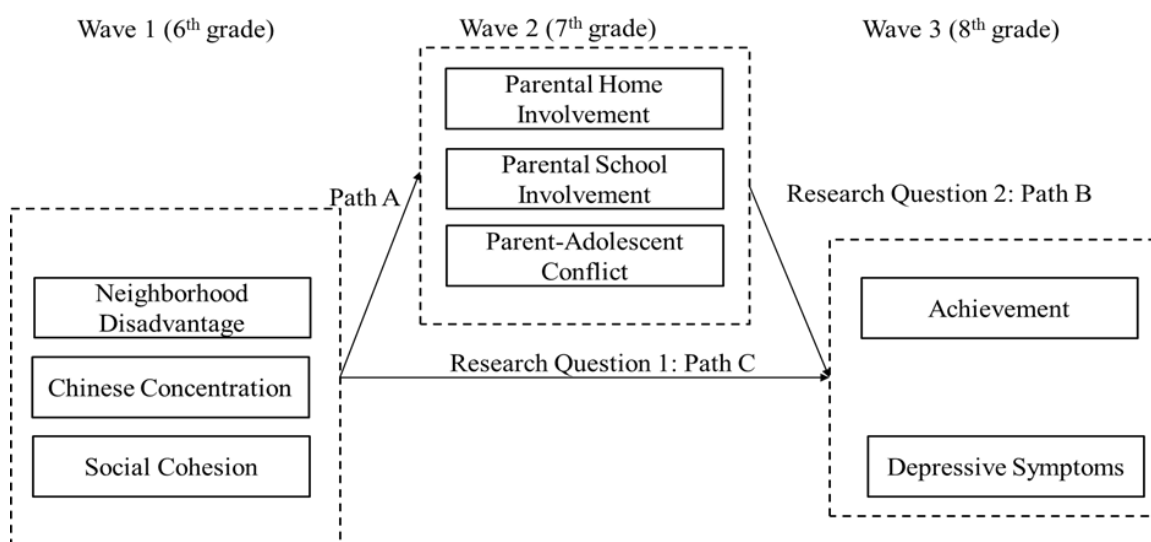


Figure 3-1. Main Model Tested in Mplus.

*Note: a. Covariates, correlations between variables at the same wave are not shown in the figure for simplicity. b. Path A, B, C include a series of paths from variables at one wave to the variables at the other wave. For example, path C consists of 6 paths, which includes the paths from three neighborhood variables to two adolescent outcomes (achievement and depressive symptoms)

Research question 1

Path C tested research question 1, which examined whether neighborhood context (disadvantage, Chinese American concentration, and social cohesion) at 6th grade had direct effects on achievement and depressive symptoms at 8th grade after accounting for the indirect effects via parenting variables. Direct links (path C) among neighborhood disadvantage, Chinese

American concentration, social cohesion (6th grade) and achievement and depressive symptoms (8th grade) were tested.

Research question 2

Path B tested research question 2, which examined whether parenting (parental school and home involvement and parent-adolescent conflict) at 7th grade was associated with adolescents' achievement and depressive symptoms at 8th grade.

Research question 3

Research question 3 examined whether the association between neighborhood context and academic outcomes and depressive symptoms were mediated by parental home involvement, school involvement, and parent-adolescent conflict. As research question 3 deals with the mediation effects, part of this research question focuses on whether neighborhood variables were associated with parenting variables (Path A). The significance of the indirect/mediated effects were tested in Mplus using the bootstrap approach. Bootstrapping is a resampling procedure (Efron, 1982) which draws assigned number of samples to get more precise standard errors and confidence intervals for the mediation effects (MacKinnon, Lockwood, & Williams, 2004). Mplus output provides the results of confidence intervals of total and specific indirect effects. The specific indirect effects of parental home involvement, school involvement, and parent-adolescent conflict were the focus of this study. It is essential that each specific indirect effect is isolated and tested to assess whether all of the three mediating parenting-related variables are mediators between different neighborhood variables and adolescent achievement and depressive symptoms.

Chapter 4

Results

Preliminary Analysis

Missing data analysis

First, missing data analyses were performed to determine the degree of missingness in all study variables. For the neighborhood variables at wave 1, the degrees of missingness for disadvantage, Chinese concentration and social cohesion based on the whole sample were 60.6%, 60.6% and 43.0%, respectively. This high degree of missingness for neighborhood variables were partly due to the study design. Home addresses, which were used to determine neighborhood disadvantage and Chinese concentration, and neighborhood social cohesion were reported at wave 1 (6th grade) by adolescents ($N = 131$). Therefore, data were only available for adolescents who were recruited at wave 1 (6th grade). However, additional adolescents were recruited at wave 2 (7th grade, $N = 34$) and wave 3 (8th grade, $N = 56$). Therefore, when we examined the missingness based on the whole sample, the missing rates of neighborhood variables were relatively high. If we examine the degree of missingness based on the sample of adolescents who were recruited at the first wave, missingness for disadvantage, Chinese concentration and social cohesion were 33.6%, 33.6% and 3.8%, respectively.

Missingness for wave 2 variables (i.e., parental home involvement, school involvement and parent-adolescent conflict) based on the whole sample were 44.8%, 44.8%, and 44.8%, respectively. This high degree of missingness was also partly due to the study design which recruited additional adolescents at wave 3 (8th grade, $N = 56$). If based on the participants

participated at wave 1 and wave 2 ($N = 165$), missingness for these variables were 25.4%. Missingness for achievement and depressive symptoms were 27.1% and 24.4%, respectively. This relatively high degree of missingness was partly due to the study design, which recruited additional participants at different waves. It might be also partly due to the ethnic minority population we studied here. Past research suggested that it was common to have a missing rate of 15% to 20% in educational and psychological studies (Enders, 2003) and the missing rate is higher when the population studied was ethnic minority (Allison, Ahmad, Brammah, Symmons, & Urwin, 2003). Missing data was handled with Full Information Maximum Likelihood (FIML). FIML represents the state of art procedure for handling missing data and is robust for different patterns of missingness, even when data is not missing at random and when there is a high degree of missingness (Graham, 2009; Schafer & Graham, 2002; Graham & Coffman, 2012;)

Attrition analysis

Second, attrition analysis was performed to determine the attrition rate at wave 3 as well as the demographic, parenting variables, achievement or depressive symptom differences in participants who completed measures at wave 1 (6th grade) but did not complete measures at wave 3 (8th grade), and the differences in the key variables among those who were recruited at wave 1, wave 2 and wave 3.

One-hundred and thirty-one adolescents were recruited at 6th grade. Of these adolescents, 72% of them ($N = 92$) completed parental involvement and parent-adolescent conflict measures at 7th grade, and 68% of them ($N = 88$) participated at 8th grade, reporting their achievement and depressive symptoms. There was a significant difference in mother's educational level between those who participated at wave 3 and those who did not ($t = 3.95, p < .001$). Adolescents who participated at wave 3 had significantly lower mother's education level ($M = 2.61, SD = 1.14$)

than adolescents who participated at wave 1 but did not participate at wave 3 ($M = 3.40$, $SD = 1.03$). There were no significant differences in generation status, gender, parental home and school involvement, parent-adolescent conflict, achievement and depressive symptoms between adolescents who participated at wave 3 and those who did not.

As mentioned earlier, 34 additional adolescents were recruited at wave 2 when they were in 7th grade and 56 extra adolescents were recruited in 8th grade. Independent sample t-tests were performed to examine whether there were any differences in demographic and key variables between adolescents who were recruited at different waves. There was no differences in generation status, gender, mother's education level, the three parenting variables, achievement, and depressive symptoms between adolescents who were recruited at wave 1 and adolescents who were recruited at wave 2. There was a significant difference in achievement between adolescents recruited at wave 1 and adolescents recruited at wave 3 ($t = -2.31$, $df = 132$, $p = 0.023$). Adolescents who were recruited at wave 3 ($M = 6.18$, $SD = 1.15$) had significantly higher achievement than adolescents who were recruited at wave 1 ($M = 5.58$, $SD = 1.58$). There were no differences in other variables between adolescents recruited at wave 1 and wave 3.

Descriptive and correlational analysis

Means, standard deviations, and correlations are presented in Table 4-1. Neighborhood disadvantage was significantly associated with home and school involvement ($r = -0.33$, $p = .004$, and $r = -0.32$, $p = 0.005$, respectively). Home and school involvement were significantly correlated with each other ($r = 0.42$, $p < 0.001$). Higher levels of parent-adolescent conflict was significantly associated with higher levels of depressive symptoms ($r = 0.23$, $p = 0.014$). Achievement was negatively related to depressive symptoms ($r = -0.16$, $p = 0.048$).

Table 4-1. Means, Standard Deviations and Correlations

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1. Disadvantage | 1 | | | | | | | |
| 2. Chinese concentration | 0.13 | 1 | | | | | | |
| 3. Social cohesion | 0.06 | -0.00 | 1 | | | | | |
| 4. School involvement | -0.32** | -0.08 | -0.05 | 1 | | | | |
| 5. Home involvement | -0.33** | -0.06 | 0.13 | 0.42** | 1 | | | |
| 6. Conflict | -0.16 | 0.07 | -0.00 | 0.13 | -0.09 | 1 | | |
| 7. Achievement | -0.09 | -0.21 | 0.02 | 0.09 | 0.02 | -0.12 | 1 | |
| 8. Depression | 0.02 | 0.13 | -0.05 | -0.01 | -0.05 | 0.23* | -0.16* | 1 |
| <i>Mean (SD)</i> | 0.00(0.82) | 1.40(0.84) | 2.54(0.60) | 1.85(1.77) | 1.16(0.74) | 1.98(0.82) | 5.82(1.41) | 0.46(0.34) |

Note. * $p < 0.05$ level; ** $p < 0.01$.

Intraclass correlation (ICC) analyses were performed for neighborhood social cohesion, school involvement, home involvement, parent-adolescent conflict, achievement, and depressive symptoms to determine the proportion of variance that is explained by the between-neighborhood differences. ICCs of all the variables except for achievement were below 0.01, which suggested that only 1% or less than 1% of the variances was explained by the between-neighborhood variance. The ICC of achievement was 0.22, which indicated that 22% of the variance in achievement was explained by the between-neighborhood differences. This indicated that the observations were not independent and suggested the non-independence of observations. Therefore, Maximum Likelihood with robust errors (MLR) was used in Mplus to run the model. MLR is robust to non-independent data (Hox, Maas, & Brinkhuis, 2010). However, MLR and bootstrap procedures cannot be performed simultaneously to test the mediation effects. Thus, to address the nested (multi-level) nature of the sample and to test the mediation effects, two models were run. The first model utilized ML with robust errors (MLR) to handle the non-independence of observations. The second model was run with ML and bootstrapping. The results showed that the patterns of the path estimates were similar (significant paths were significant in both models

while non-significant remained non-significant) in the two models using different estimators (For results comparisons, please see Table 4-2). In the following section, the results of the second model are reported as the mediation effects determined by the bootstrap intervals are one of the major foci of this study.

Table 4-2. Result Comparisons of Model 1 with MLR and Model 2 with ML and bootstrap

| | Model 1 with MLR | | Model 2 with ML and bootstrap | |
|----------------------|---------------------------------------------|---------|---------------------------------------------|---------|
| | Estimate | P-Value | Estimate | P-Value |
| Path As | | | | |
| Disad → Home IN | -0.283* | 0.024 | -0.302** | 0.001 |
| PerChi → Home IN | -0.068 | 0.453 | -0.027 | 0.784 |
| Cohesion → Home IN | 0.215 | 0.505 | 0.210 | 0.157 |
| Disad → School IN | -0.561* | 0.024 | -0.630* | 0.020 |
| PerChi → School IN | -0.237 | 0.420 | -0.126 | 0.719 |
| Cohesion → School IN | -0.214 | 0.505 | -0.169 | 0.622 |
| Disad → Conflict | -0.163 | 0.163 | -0.177 | 0.157 |
| PerChi → Conflict | 0.024 | 0.832 | 0.058 | 0.634 |
| Cohesion → Conflict | -0.012 | 0.929 | -0.007 | 0.960 |
| Path Bs | | | | |
| Home IN → Ach | -0.204 | 0.285 | -0.238 | 0.273 |
| School IN → Ach | 0.080 | 0.375 | 0.098 | 0.349 |
| Conflict → Ach | -0.335* | 0.038 | -0.381* | 0.033 |
| Home IN → Dep | 0.002 | 0.969 | 0.005 | 0.937 |
| School IN → Dep | 0.002 | 0.937 | 0.000 | 0.990 |
| Conflict → Dep | 0.088* | 0.018 | 0.088* | 0.040 |
| Path Cs | | | | |
| Disad → Ach | -0.030 | 0.864 | -0.059 | 0.766 |
| PerChi → Ach | -0.306 | 0.116 | -0.354 [†] | 0.094 |
| Cohesion → Ach | -0.035 | 0.872 | 0.030 | 0.901 |
| Model Fit: | CFI = 1.000, TLI = 1.168, and RMSEA = 0.000 | | CFI = 1.000, TLI = 1.015, and RMSEA = 0.000 | |

Note: ** $p < .01$; * $p < .05$; [†] $p < .10$. All the results are unstandardized. Disad=Neighborhood disadvantage, Ach=achievement; Dep=Depressive symptoms; Home IN=Home involvement; School IN=School involvement. PerChi=Chinese concentration.

Main Results

Model fit

The model in Figure 4-1 was run with ML and the bootstrapping procedure. This path model answered each of the research questions. The main results of the model are presented in Table 1 in the appendix and depicted in Figure 4-1. The Chi-square for the estimated model (Figure 4-1) was 17.66 ($df = 18$), which was not significantly different from the saturated model (Chi-square = 89.77, $df = 40$, $p = 0.478$). Moreover, three widely used indices of practical fit were utilized to evaluate the goodness of fit of the model: CFI (Bentler, 1990), RMSEA (Browne & Cudeck, 1993; Steiger & Lind, 1980), and TLI (Tucker & Lewis, 1973). The cutoffs of good fit recommended by researchers for the three indices are higher than 0.95 for CFI (Hu & Bentler, 1999), beyond 0.95 for TLI (Hu & Bentler, 1999) and lower than 0.05 for RMSEA (Browne & Cudeck, 1993). Based on the overall pattern of these practical indices, I judged the fit of the model to be good (CFI = 1.000, TLI = 1.015, and RMSEA = 0.000).

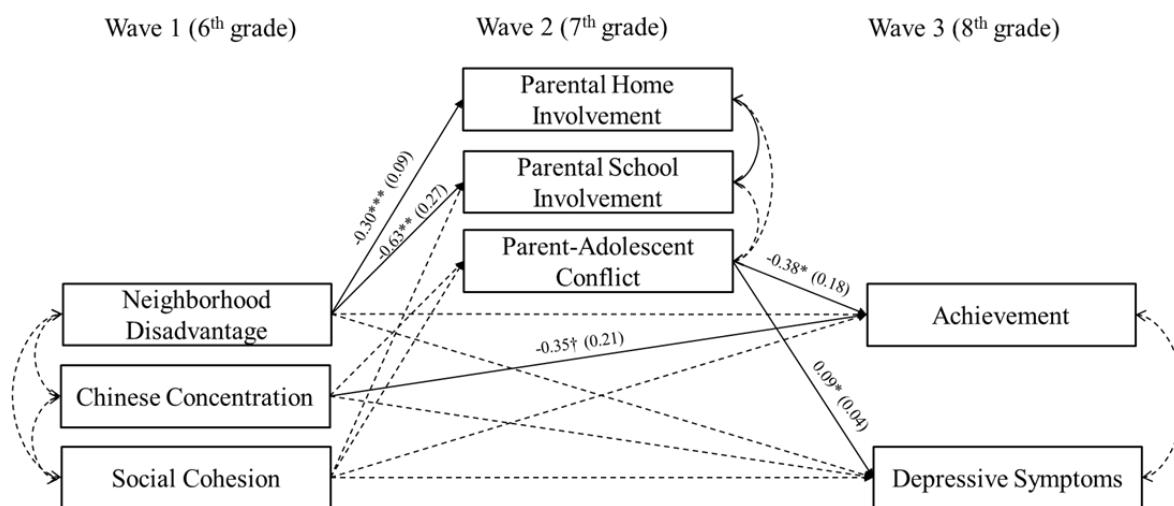


Figure 4-1. Model results

Notes. Unstandardized results are reported for the significant and marginal significant paths. Standard errors are followed in the parentheses. Dashed lines represent the non-significant paths. Covariates included in the model are gender, generational status and maternal educational level. For the purpose of simplicity, covariates are not depicted in the picture. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $0.05 < p < 0.1$.

Tested model

The model depicted in Figure 4-1 was tested in Mplus. In the model, neighborhood disadvantage, Chinese concentration and social cohesion at 6th grade were the predictors. Parental home and school involvement and parent-adolescent conflict at 7th grade were the mediators. Achievement and depressive symptoms at the 8th grade were the outcome variables. Generational status, gender, maternal education were controlled in the model as covariates.

Research question 1

Research question 1 tested whether neighborhood variables were directly associated with achievement and depressive symptoms. The results indicated that Chinese concentration was marginally associated with academic achievement ($b = -0.35, SE = 0.21, p = 0.09$).

Research question 2

Research question 2 tested whether parenting variables at wave 2 (7th grade) were associated with achievement and depressive symptoms. The results showed that parent-adolescent conflict was negatively associated with academic achievement ($b = -0.38, SE = 0.18, p = 0.03$) but positively associated with depressive symptoms ($b = 0.09, SE = 0.04, p = 0.04$).

Research question 3

Research question 3 tested whether parenting variables mediated the relationships between neighborhood variables and achievement and depressive symptoms. Bootstrap confidence intervals were used to determine whether the mediation effects were significant.

Based on the bootstrap confidence interval, all of the mediation effects from the three neighborhood variables to achievement and depressive symptoms were non-significant.

Although the mediation effects were not significant, the results showed that neighborhood disadvantage was negatively related to parental home involvement ($b = -0.30$, $SE = 0.09$, $p = 0.001$) and parental school involvement ($b = -0.63$, $SE = 0.27$, $p = 0.02$).

Chapter 5

Discussion

According to ecological systems theory (Bronfenbrenner, 1977), neighborhood and family are two important contexts for adolescents. These two contexts jointly impact adolescent development. However, past research on neighborhood, parenting, and adolescent development largely overlooks Chinese American families. There is limited knowledge of whether and how these two contexts impact Chinese American adolescents' development as well as how Chinese American parents' parenting is influenced by neighborhood.

The academic success of Chinese American adolescents has attracted researchers' attention to study how contexts, especially family, affect their achievement. However, recent studies have revealed that Chinese American adolescents have higher depressive symptoms than adolescents of other ethnicities (e.g., Huntsinger & Jose, 2006). As achievement and depressive symptoms are both important developmental outcomes and generally found to be related (Riglin et al., 2014), it is crucial to study them together in a single model. Moreover, as adolescents become more exposed to broader contexts outside of the family, such as neighborhood, it is important to include neighborhood characteristics in models of development to study how neighborhood and family work together to affect Chinese American adolescents' achievement and depressive symptoms.

The present study examined the association between different neighborhood domains (disadvantage, ethnic concentration, and social cohesion), parenting (parental home and school involvement and parent-adolescent conflict) and Chinese American adolescents' achievement and depressive symptoms. Overall, the results showed that neighborhood disadvantage and social

cohesion were not directly associated with Chinese American adolescents' achievement and depressive symptoms. Higher Chinese concentration was marginally related to lower achievement. Parental home and school involvement were not associated with either achievement or depressive symptoms. Yet, higher levels of parent-adolescent conflict was a powerful predictor of lower achievement and higher levels of depressive symptoms. Although the parenting variables included in this study did not mediate the relationship between neighborhood and adolescents' outcomes, results of the study revealed that parental home and school involvement were negatively influenced by neighborhood disadvantage. Compared to parents living in less disadvantaged neighborhoods, parents who resided in more disadvantaged neighborhoods were less involved in their youth's learning at home and school. Our results also showed that achievement and depressive symptoms were negatively related at the bivariate level but the negative association dissipated in the model when associations among variables of interest were accounted for.

The following sections first discuss the findings of the present study and then discuss the strengths and limitations of the study as well as directions for future studies.

The Associations between Neighborhood and Achievement and Depressive Symptoms

Contrary to our hypotheses, results from this study indicated that neighborhood disadvantage and social cohesion were not directly associated with achievement and depressive symptoms. The association between Chinese concentration and achievement were marginally significant and negative, which suggested a higher percentage of Chinese residents in the neighborhood was marginally associated with Chinese American adolescents' lower achievement. This result is not in line with social disorganization theory (Shaw & McKay, 1942), which would

suggest that higher levels of Chinese concentration are related to higher levels of achievement due to the possibility that the Chinese cultural beliefs about the importance of education (Chen & Uttal, 1988; Chao & Tseng, 2002; Lee, 1994) may be more likely to be shared in the neighborhood. This result, however, supports the residential segregation hypothesis (Massey & Denton, 1988), which hypothesizes that ethnic concentration is related to residents' worse outcomes due to the limited resources and more stressors in segregated neighborhoods (Massey & Denton, 1988).

In order to understand why Chinese concentration may be adversely associated with achievement, we need to take a closer look at the conditions of the neighborhood our participants lived in. Many participants in the current study lived in Chinatown or areas adjacent to Chinatown. According to the literature, Chinese Americans and immigrants living in these areas are "downtown Chinese" (Yin, 2007, as cited in Walton, 2015), meaning that they are generally low skilled, working-class and recent immigrants without a college degree settling in or around Chinatown. Such immigrants usually come to the U.S. for the reasons of family reunion or labor market opportunities (Walton, 2015). Often, Chinese immigrant parents choose to live in or around segregated neighborhoods, such as Chinatown, due to their lack of familiarity with U.S. society; living in ethnically dense areas affords an array of cultural, economic, social or language supports. When they have the chance, these families are likely to move out of Chinatown to suburbs with more affluent people, both of same ethnicity or of other ethnicities (Walton, 2015). Ethnic neighborhoods, such as Chinatown, may not be economically disadvantaged (our results indicated that neighborhood disadvantage was not related to Chinese concentration). Ethnic neighborhoods or enclaves create enclave economy and offer residents employment opportunities within the neighborhood (Walton, 2015). Therefore, immigrant parents are able to make a living and support their family by working in enclave companies, such as restaurants, super markets or small merchandizes. Although working-class immigrant parents may share the same cultural

beliefs of the importance of education or educational expectations with their Chinese counterparts who earned the advanced degree in the U.S. and entered professional careers (Ji & Koblinsky, 2009), downtown Chinese immigrant parents living in segregated neighborhood face more stressors. These stressors can include crowded and deteriorated streets, long working hours, language barriers, discrimination, and the challenges of parenting children in an unfamiliar environment (Liu & Li, 2006). In a qualitative study of Chinese immigrant parents, Ji and Koblinsky (2009) found that urban working-class Chinese immigrant parents living in the Chinatown in Washington D.C. expected their children to go to college. However, they lacked the economic and educational resources to help their children to achieve this goal due to their limited language ability, long working hours and unfamiliarity with the U.S. educational system. Moreover, as most of the adults living in the neighborhoods were working-class immigrants, there were fewer professionals to share their experience with the youth and as role models for the youth.

Moreover, living in the neighborhood with a high concentration of Chinese may limit adolescents' opportunity to speak English with parents and neighborhood adults. Youth develop their language skills through communicating with others. Our participants mainly came from Chinese speaking families. In addition to being more likely to speak Chinese with their parents, living in ethnic community with neighborhood adults and peers of the same ethnicity may further decrease their frequency in using English (Pong & Hao, 2007). Past research revealed that the proportion of foreign-born or residents (either adults or children) with limited English proficiency in the neighborhood was negatively related to immigrant youth's school performance. With relatively lower proficiency in English, immigrant youth are likely to have lower achievement at school (Pong & Hao, 2007). Still, we should be cautious about these explanations as the negative relationship between Chinese concentration and achievement was only marginally significant.

Our results indicated that neighborhood disadvantage and social cohesion were not directly associated with achievement and depressive symptoms. The null associations of neighborhood disadvantage are not consistent with past research, especially correlational studies, in which neighborhood disadvantage was found to have a negative effect on achievement and mental health (e.g., Ainsworth, 2002; Dunn et al., 2015). One possible reason for these null associations is that the Chinese American adolescents in this study were mostly from immigrant families. Immigrants tend to see their neighborhoods as less disadvantaged than the objective measure indicates (Roosa, Burrell, Nair, Coxe, Tein, & Knight, 2010). It is possible that, compared to where they used to live in their home country or what their parents described to them, their current living conditions were better and were not perceived to be disadvantaged. Also, immigrants are more likely to be optimistic about their lives because they moved to a new country with the hope that their lives will get better (Roosa, Burrell, Nair, Coxe, Tein, & Knight, 2010). These thoughts may be transmitted to adolescents by parents and buffer the negative effects disadvantaged neighborhood may have on achievement and depressive symptoms. Therefore, there might be a third variable moderating the negative associations between neighborhood disadvantage and achievement and mental health. Moreover, the disadvantage indicator used in this study was objective. Previous studies (e.g., Seegan, Welsh, Plunkett, Merten, & Sands, 2012) found that adolescents' perceptions of their neighborhood quality played a more important role than the objective measure in shaping their development. For example, Seegan et al. (2012) found that, when objective and subjective neighborhood disadvantage were both included in the model, only adolescents' perception of neighborhood disadvantage was related to the academic achievement of Latino immigrant youth.

We hypothesized that higher levels of neighborhood social cohesion would be associated with higher achievement and lower levels of depressive symptoms. Our results did not support this hypothesis, and we found non-significant associations between social cohesion and

achievement and depressive symptoms. Research among other ethnic groups (White, Latino and African American) has found that social cohesion is beneficial for adolescents' achievement and depressive symptoms (e.g., Abada et al., 2007; Aneshensel & Sucoff, 1996; Dupéré, Leventhal, & Vitaro, 2012). Our findings are surprising and require further investigations to explore the reasons. It is possible that there is a third variable that interacts with social cohesion and impacts Chinese adolescents' development. For example, Walton (2012) found that neighborhood social cohesion was related to Asian American adults' physical health only when they lived in non-ethnic (i.e., predominantly White) neighborhood. Although Walton (2012) studied social cohesion, in relation to physical health in adulthood, his findings still provide evidence that social cohesion may impact Asian American's outcomes under certain circumstances. We speculate that social cohesion may be more beneficial to adolescent development when the social cohesion is formed in a non-ethnic neighborhood of predominantly White neighbors due to network connections that afford Chinese American adolescents access to mainstream society (Carpiano, 2007; Hong, Zhang, & Walton, 2014) rather than the culturally social support. As our participant lived predominantly in ethnic neighborhoods, we cannot examine this hypothesis. Future investigations should look into under what circumstances social cohesion may impact Chinese American adolescent development.

The Associations between Parenting and Achievement and Depressive Symptoms

Our hypotheses of the effects of parenting variables on achievement and depressive symptoms were partially supported. We did not find that parental home and school involvement had significant effects on achievement and depressive symptoms. However, we did find that parent-adolescent conflict was negatively related to achievement and positively related to depressive symptoms. The results with parent-adolescent conflict were consistent with our

hypothesis based on attachment theory and past literature (e.g., Hou, Kim, & Wang, 2016). It suggested that conflicts with parents pose risks to adolescents' achievement and mental health. Adolescence can be very stressful given the multiple changes that adolescents face (Eccles et al., 1993). This may be particularly true for immigrant youth. In addition to the common challenges, such as school transitions and puberty, faced by most adolescents, immigrant adolescents also face challenges from economic problems, acculturation gaps with their parents, new family roles (e.g., being language interpreter for their parents) and discrimination by other ethnic groups (Rosenbloom & Way, 2004; Qin et al., 2008). Therefore, having a harmonious relationship with parents is particularly important for them as it provides support to deal with multiple challenges in their lives and ameliorate emotional stress (Greensberg & Chen, 1996). On the other hand, conflicts with parents deprive youth of the emotional support they need, send them negative message about their worth and distract them from their schoolwork (Dotterer, Hoffman, Crouter, & McHale, 2014).

Our results did not support the hypotheses regarding the effects of parental home and school involvement on achievement and depressive symptoms. Past research revealed that parental home and school involvement were beneficial for Asian American elementary children achievement (Jeynes, 2003). The reason for the null associations we found here may be that parental home and school involvement are less developmentally appropriate for adolescents as they crave more autonomy. Parents checking homework and visiting school may interfere with adolescent's autonomy and thus are not beneficial to achievement and mental health. A meta-analysis by Hill and Tyson (2009) suggested that academic socialization is the most age appropriate parental involvement strategy and has the largest effects on achievement. Academic socialization involves parents' communication of their educational expectations to adolescents and helping adolescents plan for future. As parental home and school involvement were not associated with achievement in this study, but Chinese American adolescents are generally found

to have higher achievement than other ethnic groups (Hsin & Xie, 2014), future studies should explore whether academic socialization is related to Chinese American youth's achievement. Moreover, the relationship between parental involvement and adolescent outcomes may not be linear, which means that more is not always better (Pomerantz, Moorman, & Litwack, 2007). Emphasizing too much on academics and studying too much may pose additional stress on adolescents, which may not be beneficial to achievement and mental health. Future studies should also consider non-linear relationships between parental involvement and adolescent outcomes.

Our results indicated that, when considering parent-adolescent conflict and parental involvement together, parent-adolescent conflict has a larger and more significant association with Chinese American adolescents' achievement and depressive symptoms. This result suggests that parent-adolescent conflict plays a crucial role in Chinese immigrant adolescent development. Past literature revealed that among the Asian American youth who seek counseling, parent-child conflicts are the most frequent problem (Lee et al. 2005; Ying et al. 1999). This may be a result of the acculturation gap between Asian parents and adolescents (Lim, Yeh, Liang, Lau, & McCabe, 2008). Asian or Chinese parents require children to be obedient and respect for parent authority, which conflicts with the American values of independence that may be more likely to be held by their more acculturated youth. Although we did not find a significant association between parental involvement and Chinese American adolescent achievement or depressive symptoms, it does not mean that parental involvement do not play a role in adolescent development. In addition to the reasons we speculated in the previous paragraphs, it is possible that parental involvement and parent-adolescent conflict interact with each other and influence adolescent development. It is possible that parent-adolescent conflict, as the quality of parent-adolescent relationship, moderates the associations between parental involvement and adolescent outcomes. Pomerantz, Kim, and Cheung (2012) suggested that parental involvement may be more positively related to children's achievement when there is a warm parent-child relationship. A warm and harmonious

relationship with less conflict may make children or adolescents more willing to accept parents' values and behaviors.

The Mediation Role of Parenting

In the present study, we did not find that parenting mediated the relationship between neighborhood and achievement and depressive symptoms. The results from this study did not support the mediation role of parenting between neighborhood characteristics and Chinese American adolescents' achievement and depressive symptoms suggested by the Family Stress Model (Conger, Rueter, & Conger, 2000) and the Integrative Model (Garcia-Coll et al., 1995). However, this does not mean that neighborhood and parents do not work together to affect the development of Chinese American adolescents. It is possible that neighborhood and family work in other ways to impact their development. Noah (2015) summarized four ways in which neighborhoods and parents work together to impact adolescent development. Based on the parental-buffering hypothesis (Noah, 2015), effective parenting behaviors (e.g., parental involvement) may moderate the negative associations between neighborhood risk factors and adolescent development. For example, Flouri, Midouhas, Joshi, & Tzavidis (2014) found that the quality of parent-child relationship moderated the effect of neighborhood disadvantage on children's internalizing and externalizing problems. On the other hand, the amplified-disadvantage neighborhood model and family compensatory hypothesis (Roche & Leventhal, 2009) argue that neighborhood variables may moderate the relationship between parenting and adolescent/child outcomes. For example, White, Roosa, and Zeiders (2012) found that parental warmth alleviated youth externalizing behavior only when the family lived in the low-risk neighborhood. Therefore, future studies should explore alternative models to find out how

neighborhood and family interact with each other to impact Chinese American adolescent development.

Although parenting did not mediate the relationship between neighborhood and adolescents' achievement and depressive symptoms, we found that Chinese American parents' home and school involvement were adversely influenced by neighborhood disadvantage. This pattern is inconsistent with findings among White and Black families (Bhargava & Witherspoon, 2015), which showed that neighborhood disadvantage was related to higher levels of parental involvement. This finding, however, is consistent with the finding among Mexican-origin immigrant families (Bhargava, Bámaca-Colbert, Witherspoon, Pomerantz, Robins, 2017), in which neighborhood disadvantage was negatively related to Mexican-origin mothers' home involvement. Our finding is more similar to the finding among Mexican-origin mothers as the samples are both immigrant families. Chinese American parents, similar to their Mexican immigrant counterparts, have to deal with cultural and language barriers, as well as unfamiliarity with U.S. school systems; this makes it harder to be involved in children's learning. This finding also supports the family stress model (Conger et al., 2000), which suggests that neighborhood disadvantage disrupts positive parenting behaviors due to the stress of living in disadvantaged neighborhoods. The stress of living in a disadvantaged neighborhood characterized by poverty may disrupt parents' time and energy to invest in youth's learning.

The Associations between Achievement and Depressive Symptoms

Our results indicated that achievement and depressive symptoms were negatively correlated at the bivariate level. This pattern is consistent with past research on diverse groups (Riglin et al., 2014). Poor academics is associated with negative perceptions of competence and

self-efficacy (Wigfield, Eccles, MacIver, Reuman, & Midgley, 1991) and lower self-esteem (Moilanen, Shaw, & Maxwell, 2010), which may lead to heightened depressive symptoms.

Limitations and future directions

The study is one of the first to explore the relationship between neighborhood, parenting, and adolescent achievement among Chinese American adolescents. The results suggest that neighborhood disadvantage impacted Chinese American parental home and school involvement. Parents living in the more disadvantaged neighborhood were involved less frequently in education, both at home and at school. Our results also suggest that, compared to parent home and school involvement, parent-adolescent conflict was a more powerful predictor of Chinese American adolescents' achievement and depressive symptoms, in which higher conflict was related to lower achievement and higher levels of depressive symptoms.

This paper contributed to the literature by focusing on a population that is often overlooked and studying the joint effects of neighborhood and family on adolescents' achievement and depressive symptoms. Still, the contributions of this paper should be considered within the scope of its limitations. First, the intersections of two contexts can take different forms (Noah, 2015). In this study, we only test if parenting mediated the relationship between neighborhood and Chinese American adolescents' outcomes based on the family stress model and social disorganization theory. Future studies should test alternative models, such as neighborhood or parenting as a moderator, to determine how these two contexts work together to impact developmental outcomes of Chinese American adolescents.

Second, our study aimed to explore the contextual factors that might be related to Chinese American adolescents' achievement and depressive symptoms. According to ecological system theory (Bronfenbrenner, 1977), culture is the macrosystem which interacts with other

systems and affects adolescents' development. Chinese American parenting is influenced by culture, and ethnic enclaves may consolidate Chinese culture values. Directly measuring cultural values can help researchers understand how neighborhood, culture, and parenting jointly influence Chinese American adolescents' development.

Third, we aimed to understand what contextual factors may be associated with Chinese American adolescents' achievement and depressive symptoms. Our model is a comprehensive model which tried to incorporate the contextual factors that may contribute to achievement and depressive symptoms. Still, there are other contextual or individual factors that may play an important role, but we did not explore. For example, researchers found that, as an ethnic minority, Asian American adolescents experienced discrimination, especially discrimination from peers, which is related to heightened levels of depressive symptoms (Chen, Szalacha, & Menon, 2014; Niwa, Way, & Hughes, 2014). Future studies should include other relevant contextual and individual variables to better elucidate the complex associations between variables and better represent Chinese American adolescents' unique experience.

Next, we used adolescents' reports of parental involvement in this study. Although some studies (Hill & Taylor, 2004; Reynolds, 1992) have shown that adolescents' reports might be more accurate in reporting parental involvement as it measures the actual perceived parental involvement by adolescents, adolescents may have limited knowledge of when and how their parents contact teachers. Therefore, future studies should also consider and integrate different sources of reports, such as students' and teachers' reports. Also, we used adolescents' report of maternal education level because only a small group of mothers was interviewed and provided this information. At the bivariate level, there is a moderate relationship between adolescents reported, and mothers reported educational level and adolescents generally reported higher levels of education than mothers' self-report. Although adolescent-perceived maternal education level may play a role in affecting their development, future studies should also include multiple

reporters to gain more accurate information. In addition, due to the longitudinal study design, there was relatively high missing rate of the variables of interest. Although the missing rate was relatively high, with FIML, we are confident that the results reveal the real patterns. Still, this study is one of the first longitudinal studies that focus on an understudied population within context, which is relatively less well-understood.

A final limitation is that the study was focused on New York City. As such, the results may not be generalizable to other regions of the United States, as Chinese Americans living in other cities in the U.S. may come from different backgrounds and have immigrated for different reasons, such as family reunion, to fill the demands of high skilled professional or low skilled labor markets. These different reasons may result in heterogeneity in SES and educational background among Chinese Americans. Future studies should examine Chinese American families in different areas in the U.S. and families with different SES and educational levels to see if the same associations can be found.

In conclusion, despite these limitations, the current study contributes to understanding the role of neighborhood and parenting in Chinese American's achievement and depressive symptoms. Neighborhood and family are two important contexts that affect adolescent development. This study helps to explore how these two contexts work together to influence Chinese American adolescent development. This study reveals that different neighborhood characteristics and parenting variables have differential relationships with achievement and depressive symptoms. Chinese American parents' involvement is also influenced by neighborhood disadvantage. This study also highlights the complex relationships between neighborhood, parenting, and Chinese American adolescent development. It highlights the necessity to further explore the relationships between neighborhood, family and ethnic minority adolescent development.

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Appendix

Table

Table 1. Model Results: Coefficients, Total Effects, Total and Specific Indirect Effects

| | Estimate | S.E. | Est./S.E. | P-Value |
|--------------------------------------------------------------------------------------|---------------------|-----------------|-----------------|---------|
| Total Effects: | | | | |
| Disad → Ach | 0.019 | 0.164 | 0.115 | 0.908 |
| PerChi → Ach | -0.382 [†] | 0.202 | -1.890 | 0.059 |
| Cohesion → Ach | -0.033 | 0.225 | -0.148 | 0.882 |
| Disad → Dep | 0.007 | 0.058 | 0.120 | 0.905 |
| PerChi → Dep | 0.016 | 0.063 | 0.251 | 0.802 |
| Cohesion → Dep | -0.025 | 0.075 | -0.338 | 0.735 |
| Model Results (b-weights) | | | | |
| Path As | | | | |
| Disad → Home IN | -0.302*** | 0.093 | -3.260 | 0.001 |
| PerChi → Home IN | -0.027 | 0.100 | -0.273 | 0.784 |
| Cohesion → Home IN | 0.210 | 0.149 | 1.415 | 0.157 |
| Disad → School IN | -0.630* | 0.270 | -2.331 | 0.020 |
| PerChi → School IN | -0.126 | 0.351 | -0.359 | 0.719 |
| Cohesion → School IN | -0.169 | 0.343 | -0.492 | 0.622 |
| Disad → Conflict | -0.177 | 0.125 | -1.416 | 0.157 |
| PerChi → Conflict | 0.058 | 0.123 | 0.476 | 0.634 |
| Cohesion → Conflict | -0.007 | 0.149 | -0.050 | 0.960 |
| Path Bs | | | | |
| Home IN → Ach | -0.238 | 0.217 | -1.097 | 0.273 |
| School IN → Ach | 0.098 | 0.104 | 0.937 | 0.349 |
| Conflict → Ach | -0.381* | 0.179 | -2.134 | 0.033 |
| Home IN → Dep | 0.005 | 0.060 | 0.079 | 0.937 |
| School IN → Dep | 0.000 | 0.026 | 0.013 | 0.990 |
| Conflict → Dep | 0.088* | 0.043 | 2.053 | 0.040 |
| Path Cs | | | | |
| Disad → Ach | -0.059 | 0.198 | -0.297 | 0.766 |
| PerChi → Ach | -0.354 [†] | 0.211 | -1.677 | 0.094 |
| Cohesion → Ach | 0.030 | 0.246 | -1.677 | 0.901 |
| Confidence intervals of total indirect, specific indirect, and direct effects | | | | |
| | Estimate | 95% CI | 99% CI | |
| Disad → Achievement | | | | |
| Total indirect: | 0.078 | [-0.124, 0.318] | [-0.208, 0.409] | |
| Specific indirect : | | | | |

| | | | |
|--------------------------|--------|------------------|-----------------|
| Disad→Home IN→Ach | 0.072 | [-0.270,0.047] | [-0.367, 0.102] |
| Disad→School IN →Ach | -0.062 | [-0.261, -0.025] | [-0.327, 0.131] |
| Disad→Conflict →Ach | 0.067 | [-0.014, 0.230] | [-0.047, 0.324] |
| Direct effect: | -0.059 | [-0.474, 0.304] | [-0.620, 0.460] |
| <hr/> | | | |
| PerChi → Ach | | | |
| Total indirect: | -0.028 | [-0.193, 0.098] | [-0.247, 0.166] |
| Specific indirect : | | | |
| PerChi→Home IN→Ach | 0.007 | [-0.034, 0.124] | [-0.065, 0.202] |
| PerChi →School IN →Ach | -0.012 | [-0.176, 0.050] | [-0.216, 0.107] |
| PerChi →Conflict →Ach | -0.022 | [-0.145, 0.073] | [-0.195, 0.131] |
| Direct effect: | -0.354 | [-0.734, 0.106] | [-0.869, 0.287] |
| <hr/> | | | |
| Cohesion→Ach | | | |
| Total indirect: | -0.064 | [-0.298, 0.102] | [-0.430, 0.174] |
| Specific indirect : | | | |
| Cohesion→Home IN→Ach | -0.050 | [-0.294, 0.021] | [-0.427, 0.058] |
| Cohesion→School IN→Ach | -0.017 | [-0.190, 0.039] | [-0.312, 0.088] |
| Cohesion →Conflict →Ach | 0.003 | [-0.110, 0.164] | [-0.641, 0.677] |
| Direct effect: | 0.030 | [-0.452, 0.525] | [-0.641, 0.677] |
| <hr/> | | | |
| Disad → Dep | | | |
| Total indirect: | -0.017 | [-0.076, 0.031] | [-0.104, 0.054] |
| Specific indirect : | | | |
| Disad→Home IN→ Dep | -0.001 | [-0.036, 0.042] | [-0.052, 0.059] |
| Disad→School IN → Dep | 0.000 | [-0.039, 0.035] | [-0.059, 0.050] |
| Disad→Conflict → Dep | -0.016 | [-0.063, 0.001] | [-0.078, 0.008] |
| Direct effect: | 0.024 | [-0.121, 0.142] | [-0.172, 0.176] |
| <hr/> | | | |
| PerChi → Dep | | | |
| Total indirect: | 0.005 | [-0.022, 0.041] | [-0.038, 0.051] |
| Specific indirect : | | | |
| PerChi→Home IN→ Dep | 0.000 | [-0.013, 0.013] | [-0.023, 0.022] |
| PerChi →School IN → Dep | 0.000 | [-0.024, 0.019] | [-0.048, 0.031] |
| PerChi →Conflict → Dep | 0.005 | [-0.013, 0.033] | [-0.024, 0.040] |
| Direct effect: | 0.011 | [-0.117, 0.135] | [-0.164, 0.185] |
| <hr/> | | | |
| Cohesion→ Dep | | | |
| Total indirect: | 0.000 | [-0.049, 0.046] | [-0.075, 0.068] |
| Specific indirect : | | | |
| Cohesion→Home IN→ Dep | 0.001 | [-0.029, 0.041] | [-0.047, 0.063] |
| Cohesion→School IN→Dep | 0.000 | [-0.025, 0.019] | [-0.044, 0.033] |
| Cohesion →Conflict → Dep | -0.001 | [-0.035, 0.023] | [-0.051, 0.033] |
| Direct effect: | -0.026 | [-0.184, 0.126] | [-0.235, 0.178] |