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A Longitudinal Examination of the Effects of Acculturation and Mental Health Problems
on Immigrant Father Involvement: A Cross-Cultural Study

Keitaro Yoshida

A dissertation submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

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ABSTRACT

A Longitudinal Examination of the Effects of Acculturation and Mental Health Problems on Immigrant Father Involvement: A Cross-Cultural Study

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Doctor of Philosophy

The present study examined how acculturation, mental health problems, and parenting stress are associated with two dimensions of father involvement longitudinally for Latino and Chinese immigrant fathers using a nationally representative sample of young children and their resident fathers from the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B). After controlling for a variety of individual and demographic characteristics and previous levels of father involvement, results from multiple group structural equation modeling revealed that immigrant fathers' English proficiency is negatively associated with care-taking involvement at 2 years, but positively associated with care-taking involvement at 4 years. Interestingly, mothers' English proficiency is also positively associated with fathers' care-taking involvement at 2 years. In addition, fathers' US citizenship is positively associated with care-taking involvement at 2 years, and mothers' US citizenship is negatively associated with fathers' literacy or language involvement at 2 years. In contrast with the hypotheses, no significant differences between Latino and Chinese immigrant fathers were found. Findings suggest that some dimensions of acculturation affect different dimensions of father involvement across different groups of immigrants, and the impacts may remain significant even four years after the child birth.

Keywords: father involvement, immigrants, acculturation, mental health, parenting stress, ECLS-B, cross-cultural study, Latino fathers, Chinese fathers

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Table of Contents

List of Tables	v
Lists of Figures	v
Chapter 1: Introduction.....	1
Chapter 2: Review of the Literature.....	4
Background	4
Rapid Increase of Immigrant Population in the United States	4
Challenges for Immigrant Families	4
Lack of Understanding on Immigrant Father Involvement and Its Predictors	5
The Impact of Stressors and Mental Health Problems on Immigrant Father Involvement.....	5
The Role of Acculturation on Immigrant Father Involvement.....	7
The Purpose of the Study	9
Theoretical Background	11
Acculturation	11
The Associations between Acculturation and Immigrant Father Involvement	15
The Associations between Mental Health Problems and Father Involvement.....	18
The Role of Parenting Stress as a Mediator	20
Impact of Immigration on Latino and Chinese Immigrant Fathers.....	23
Differences and Similarities between Latino and Chinese Immigrant Fathers.....	27
The Lack of Longitudinal Examinations on Immigrant Father Involvement.....	28
Conceptual Model	30
Research Hypotheses.....	33
Chapter 3: Methods.....	35
Sample	35
Measures.....	36
Analytic strategies	43
Chapter 4: Results.....	47
Care-Taking Involvement.....	47
Literacy or Language Involvement.....	48
Chapter 5: Discussion	50
Care-Taking Involvement.....	50
Literacy or Language Involvement.....	54
Limitations.....	55
Conclusions	56
References.....	59

List of Tables

Table 1. Descriptive Statistics for the Variables Used in the Analyses, ECLS-B 9-month, 2 year, and 4 year Resident Father Surveys (weighted).....	88
Table 2. Summary of Correlations, Means, and Standard Deviations for the Variables Used in the Analyses (weighted).....	90
Table 3. Parameter Estimates for Structural Equation Model Predicting Care-Taking Involvement for Latino and Chinese Fathers.....	91
Table 4. Parameter Estimates for Structural Equation Model Predicting Literacy or Language Involvement for Latino and Chinese Fathers.....	92

Lists of Figures

Figure 1. Conceptual model of the longitudinal impact of acculturation and mental health on immigrant father involvement.....	93
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Chapter 1: Introduction

Despite the rapid increase of immigrant families in recent years (Hero, 2010), the role of immigrant father involvement in their children's development is not well understood due to the lack of systematic examinations (Jain & Belsky, 1997). This is evident despite the fact that the role of father involvement in general has been found to be important to the wellbeing of their children (e.g., Lewis, 1997; Pleck, 1997). Understanding immigrant father involvement and its possible predictors is critical to facilitate the healthy development of their children as they face more risks than native-born children (Capps, 2001). The presence of an involved father during the period of major transition may provide more family support, facilitate more positive parent-child relationships, and reduce family conflict (Leyendecker & Lamb, 1999).

The current study examines the impact of two critical influences on immigrant father involvement: acculturation and mental health problems. Immigrant fathers face unique challenges and stressors such as underemployment, unemployment, language barriers, and barriers to services (e.g., Shimoni, Este, & Clark, 2003), all of which can contribute to psychological distress and mental health problems (Berry, 1997; Roer-Strier, Strier, Este, Shimoni, & Clark, 2005) which in turn can negatively affect parenting behavior including parenting stress (Briggs-Gowan, Carter, Skuban, & Horwitz, 2001; Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000; Quittner, Glueckauf, & Jackson, 1990; Rodgers, 1998) as well as the wellbeing or development of their children (Deater-Deckard & Scarr, 1996; Jackson, 2000). In addition, another set of challenges may include the experiences of conflicts or differences between their identity, values, and behaviors they developed in their culture of origin and those they learn in the host culture. As a result, immigrants often make changes, adjustments, and adaptations in various aspects of their lives (e.g., Sam, 2006). This process of cultural adaptation

or change, called *acculturation*, has been associated with the wellbeing of immigrants. Previous studies have found that adaption of or movement toward the new culture is associated with lower levels of stress (Berry, 2003), better psychological adjustment (Lang, Muñoz, Bernai, & Sorensen, 1982), higher satisfaction with life (Lieber, Chin, Nihira, & Mink, 2001), and higher levels of self-esteem (Phinney, Chavira, & Williamson, 1992).

According to this previous research, although both acculturation and mental health problems appear to predict parenting stress and parenting behavior, the effects seem to be generally opposite. That is, acculturation appears to be associated with lower parenting stress and better parenting behavior while mental health problems appear to be associated with higher parenting stress and poorer parenting behavior. The positive impact of acculturation may be because when immigrants engage in behaviors that help them better fit in the host society, it may help immigrants overcome the obstacles and barriers they often experience during the transition (Berry, 1988, 1997), and it may consequently reduce their parenting stress and ease the challenges that may hinder their ability to fulfill their parenting responsibility as parenting stress has been linked to parenting behavior (Conger, Rueter, & Conger, 2000; Deater-Deckard & Scarr, 1996).

Based on this premise, I have developed a model for immigrant father involvement containing these two critical predictors of immigrant father involvement: acculturation and mental health problems. This model posits that immigrant fathers' mental health problems would function as a risk factor and be associated with greater parenting stress and lower involvement at a later time. In contrast, their level of acculturation likely functions as a protective factor being associated with lower parenting stress and greater involvement across time. In addition,

parenting stress is expected to mediate the associations between acculturation and immigrant father involvement and between mental health problems and immigrant father involvement.

This model is evaluated using a sample of foreign-born Latino and Chinese immigrant fathers, all of whom are a part of a nationally representative sample of US children and their families. These two different groups of immigrants are compared because previous research suggests that parenting practices for various groups of immigrants may be different (Inman, Howard, Beaumont, & Walker, 2007; Julian, McKenry, & McKelvey, 1994) possibly due to different beliefs and expectations about the roles of fathers among immigrant groups (Shimoni et al., 2003). In addition, previous studies showed that various groups of immigrants may differ in how they acculturate (e.g., Sodowsky & Plake, 1992; Wong-Rieger & Quintana, 1987) making the case that an examination of differences in the impact of acculturation on father involvement across different groups of immigrant fathers is highly warranted. The findings of this study will provide better understanding on the needs of immigrant fathers and new insights on how we can facilitate their well-being and their involvement with their children which are critical to the well-being of their children.

Chapter 2: Review of the Literature

Background

Rapid Increase of Immigrant Population in the United States

During the last few decades, the United States experienced a sharp increase in the number of immigrants (Hero, 2010). As a result, the number of “foreign born” residents in the U.S. increased from 4.7 percent (9.6 million) in 1970 (Gibson & Lennon, 1999) to 12.4 percent (more than 35 million) in 2005 (U.S. Census Bureau, 2006). The high levels of immigration have also led to an even more rapid increase in the number of children with immigrant parents due in part to higher fertility among immigrant women coupled with the greater number of immigrant women in childbearing age compared to their U.S.-born counterparts (Ford, 1990; Forste & Tienda, 1996). The share of children of immigrants among the school-age population has increased from 6 percent in 1970 to 19 percent in 2000 (Capps et al., 2005).

Challenges for Immigrant Families

In order to address the needs of immigrant families, researchers have given increased attention to this population (e.g., Booth, Crouter, & Landale, 1997) and have found that immigrant families on average are more disadvantaged compared to non-immigrant populations. For example, children of immigrants are substantially more likely to experience economic hardships, have fair or poor health conditions, have parents with lower education levels and limited English proficiency, interact less often with their parents (Capps, Fix, Ost, Reardon-Anderson, & Passel, 2004), and even have higher rate of disability compared to the native born children (Waldman, 2008). However, despite these disadvantages and higher need for public assistance and health care, they are less likely to receive public assistance or to have health insurance (Capps et al., 2004).

Lack of Understanding on Immigrant Father Involvement and Its Predictors

Even though increased attention has been given to immigrant families, there is a critical knowledge gap in the literature (Clark, Glick, & Bures, 2009); thus interventions have little to draw on in creating services for these families. In particular, much of the existing research on immigrants has focused on mothers and children, and immigrant fathers have typically been ignored and are still not well understood (Jain & Belsky, 1997, Shimoni, Clark, & Este, 2000; Strier & Roer-Strier, 2010). As a result, only little is known about how immigration affects fathers' well-being and their involvement with their children.

Therefore, it is essential to understand what factors may be responsible for predicting immigrant father involvement as predictors of immigrant father involvement may be somewhat unique compared to predictors of father involvement for non-immigrants considering the fact that immigrant fathers face unique challenges and stressors during the process of immigration and acculturation may play an important role as one of the predictors. Although there is a large body of literature examining a number of determinants in father involvement, immigrant father involvement has rarely been studied. In particular, understanding the impact of acculturation on immigrant father involvement is critical in helping immigrant fathers as it is likely to be a factor that has unique influence on immigrant father involvement that is not seen among non-immigrant fathers.

The Impact of Stressors and Mental Health Problems on Immigrant Father Involvement

Previous research has shown that immigrant fathers' unique challenges and stressors may have some impacts not only on their own well-being but also on how they are involved with their children. For example, Shimoni et al. (2003) reported that immigrant fathers tend to experience underemployment, unemployment, language barriers, role reversal which occurs when mothers

obtain work outside the home while fathers have difficulty obtaining employment, and/or the lack of access to or information about public services.

In addition to these stressors, there is another significant source of stress for immigrants. Immigration involves transitions and changes in various aspects of immigrants' life as individuals move from one cultural context to a new cultural context that has different cultural patterns (Berry, 1997). It often involves conflicts between the cultural patterns in the host culture and the culture of origin, and such conflicts may also be a source of psychological distress and mental health problems, if they realize that the conflicts may not be resolved easily (Berry, Kim, Minde, & Mok, 1987). In fact, empirical studies have found high levels of psychological difficulties during the transition among recent immigrant adults and youth (Smokowski, Chapman, & Bacallao, 2007). Although such stress is believed to be most intense for recently arrived immigrants (Martinez, McClure, Eddy, & Wilson, 2011), there is evidence that suggest this stress could be persistent even for several years after immigration (Vega, Sribney, Aguilar-Gaxiola, & Kolody, 2004).

These multisourced stressors have been linked with parents' psychological distress and mental health problems (Roer-Strier et al., 2005). For example, immigrant fathers' decline in self-esteem due to these stressors has been linked to higher rates of depression, acute feelings of loss, isolation, grief, and marginalization, and increased alcohol intake (Gilan, 1990; Grinberg & Grinberg, 1989; Robertson, 1992; Skolnick & Skolnick, 1992; Shimoni et al, 2003). These findings have important implications for immigrant father involvement because parents' mental health problems are associated with poorer parenting behaviors, such as more challenges in parenting (e.g., Arnold, O'Leary, & Edwards, 1997), difficult parent-child relationships (Seagull, 1987), negative and inadequate responses to their children's efforts to engage their attention

(Conger et al., 1992, 1993; Downey & Coyne, 1990; Whitbeck et al., 1991), hostility, and coercive control (Conger, Patterson, & Ge, 1995; Ge, Conger, Lorenz, & Simons, 1994; Kaslow, Deering, & Racusin, 1994; McLoyd, Jayaratne, Ceballo, & Borquez, 1994). These findings suggest that immigrant fathers may experience unfavorable changes in their own well-being as well as in their parenting behavior during the transition. If they do not receive proper support, the unfavorable changes may persist, and may lead to an intergenerational cycle of poorer outcomes.

Thus, public and social supports are particularly critical both for the young children and parents in immigrant families. This is a pressing issue for the United States as it is projected that immigrant population will continue to increase by millions each year and that the total minority population will reach more than double the size of the current minority population over the next half century (U.S. Census Bureau, 2012).

The Role of Acculturation on Immigrant Father Involvement

In order to adjust well in their new society, immigrants need to cope well with the various stressors and cultural conflicts, somehow overcome them, and reduce the possibility of having negative consequences, such as psychological distress, mental health problems, and poorer parenting practices. Although there are many possible ways of coping, acculturation can be one of the important ways of coping for immigrants. Many of the challenges for immigrants can be at least partly attributed to the gaps between the society of origin and the host society in culture, language, social norms and beliefs, social connections, and so on. Thus, bridging those gaps can help immigrants overcome those challenges and stressors and adjust well in the new society. For example, if immigrants learn the new language in the host society, it could open opportunities to obtain a job, acquire new friends, and/or have better access to public services and resources all of which can help them reduce the stress and better adjust in the new society. In fact, high English

proficiency has been found to be associated with lower stress among Latino immigrants in the United States (Lueck & Wilson, 2011).

Based on these premises, acculturation is treated in the present study as a positive coping strategy that immigrants may employ during the transition which could help them reduce their stress, and consequently reduce the risk for engaging in poorer parenting practices.

There are few critical gaps in the literature on the associations between acculturation and parenting. First, much of the existing research on immigrant parents in the United States has focused on mothers (Cote & Bornstein, 2005; Rumbaut, 1994). Second, studies that include both parents have revealed that fathers and mothers were significantly different in how they acculturate and how quickly they acculturate (Costigan & Dokis, 2006). This suggests that it is possible that acculturation may have differential impacts on mothers and fathers. Thus, it is important to study how acculturation may affect immigrant father involvement independently from the impact of acculturation on immigrant mother involvement. Third, only very few studies have examined if the associations between acculturation and immigrant father involvement differ between various immigrant groups. However, this is also an important area to examine as the few studies that have explored this question have shown that dimensions of acculturation are associated with distinct dimensions of father involvement for different ethnic groups (Capps, Bronte-Tinkew, & Horowitz, 2010; Jain & Belsky, 1997), and acculturation to the host country is related to different types of parenting belief for different ethnic groups (Tajima & Hirachi, 2010), suggesting that acculturation may have differential impact on father involvement for different immigrant groups. Finally, a long-term impact of acculturation on immigrant fathers' involvement with their children is virtually unknown. These findings (or the lack thereof) make the case for an examination of immigrant fathers' experiences of the impact of acculturation on

their involvement with their children and the differences between different ethnic groups in such experiences.

The Purpose of the Study

To bridge the gap in the literature, the current study utilizes nationally representative data on US children to examine the influence of acculturation and mental health problems on immigrant father involvement. Further, given the lack of research investigating longitudinal impact of immigration and acculturation on immigrant fathers' involvement, this study employs longitudinal structural equation modeling technique to investigate how immigrant fathers' involvement may develop as the child ages. In addition, this study examines how the associations between these variables differ across ethnic groups using a sample of Latino and Chinese immigrant fathers. In short, this study seeks to understand how acculturation and mental health problems predict immigrant father involvement, and how the associations between these variables differ between Latino and Chinese immigrant fathers.

Although both Latino and Chinese immigrants represent some of the fastest growing populations in the United States (Capps et al., 2005), a dearth of research is evident particularly on fathers in these groups (Cabrera & Coll, 2004). Therefore, better understanding of father involvement and its predictors for these groups is much needed. This study will provide a better understanding on important factors that may uniquely affect immigrant fathers' involvement with their children over time. The new understanding will help policy makers and service providers identify how they can better help immigrant fathers who have been ignored and much less understood. In particular, they can use the information to help immigrant fathers minimize the stressors and obstacles during the process of acculturation so that these fathers can be involved with their children more and fulfill their responsibility in their family. In addition,

understanding the differences and similarities between Latino and Chinese immigrant fathers could help us meet the needs of each of these groups of fathers. Moreover, because of the greater disadvantages, the role of father involvement may even be more essential for a healthy development of immigrant children. Furthermore, because immigrant families have lost many of their social networks and significant support from their extended families and friends that were available in their home country, fathers' support may be more critical for their spouse and children to foster positive parent-child relationships and healthy development of their children (Leyendecker & Lamb, 1999).

Theoretical Background

Acculturation

Consciously or not, we all have a developing sense of self as a member of one or more cultural groups, called *cultural identity* (Raman, 2006). Cultural identity is one of the most important aspects of life in general for immigrants (Phinney, 2003; Portes & Rumbaut, 2001). It is thought of as a multidimensional construct that captures the interplay between culture, religion, ethnicity, and national identities (Berry, Phinney, Sam, & Vedder, 2006; Leibkind, 1992), and these dimensions of identity may develop at differential paces and vary independently (Bourhis, Moïse, Perreault, & Senécal, 1997).

When individuals migrate to a new country, they do not simply adapt a new cultural identity, leaving their cultural identity with their culture of origin behind (Bhugra, 2004). They also may not completely reject the new culture because it is important for them to learn the language, culture, and ways of life in the new country in order for them to make the new life comfortable and successful.

The process of cultural adaptation and/or changes in cultural identity that may occur following migration is called *acculturation*. Acculturation refers to the process of cultural adaptations or changes that arise following continuous first-hand contact between individuals of different cultures (Redfield, Linton, & Herskovits, 1936). The nature, purpose, duration, and permanence of contact all contribute to how acculturation takes place (Berry, 1980). For example, acculturation may take place at a lower level if there is no purpose in contact (contact is accidental) and/or if contact is short-lived. In contrast, acculturation may take place at a greater level if there is a deliberate purpose in contact and/or if contact is persistent.

In addition, there are a number of other factors that may affect the process of acculturation. Berry (1997) proposed two distinct groups of factors that may affect the process of acculturation: (a) the factors that exist prior to cultural contact, and (b) the factors that may arise during the process of acculturation. The factors that exist prior to cultural contact include demographic characteristics (e.g., age, gender, education, pre-acculturation status), motivation, expectations, cultural distance (i.e., distance between the culture of origin and the host culture, such as language and religion), and personality (e.g., flexibility, locus of control). Although the present study does not examine the impact of these factors, this is an important theoretical underpinning for the current study because some of these factors imply that the process of acculturation and its impact may be unique and/or different for immigrants from different cultures.

The factors that may arise primarily during acculturation include, length of time experiencing the acculturation process, attitudes and behaviors towards acculturation, coping strategies and resources, social support, and experiences with prejudice and discrimination.

Initially, researchers conceptualized acculturation mainly as a linear, unidimensional process which occurs on a continuum (Suinn, 2009) as still suggested in the definition provided in *APA Dictionary of Psychology* (VandenBos, 2007) as “an individual’s attitudinal and behavioral adjustment to another culture, which typically varies with regard to degree and type” (p.8). This linear, unidimensional model assumes that the original culture and the new culture are at opposite ends on the continuum, and that increased connection with the new culture necessarily involves corresponding decreased connection with the original culture (Suinn, 2009).

However, in recent decades, many researchers have been moving toward the more unified view of acculturation as a bilateral, multidimensional, multifaceted, multilinear, and multilevel process (Berry, 2003; Cuellar, 2000). According to this revised view of acculturation, an

increased connection with one culture does not necessitate a decreased connection with another, making it possible to draw a more comprehensive picture of individuals' position relative both to their original culture and to the new culture (Suinn, 2009). It also suggests that true assimilation may never occur, and that many different acculturative options are possible for individuals interacting with a new culture (Trimble, 2003). In fact, recent findings indicate that many immigrants and their children do maintain a strong orientation toward the culture of origin while also developing a strong orientation toward the host culture (e.g., Martinez et al., 2011; Schwartz & Zamboanga, 2008). In addition, changes can involve changes in multiple dimensions of human functioning such as physical, biological, cultural, social, and psychological changes according to this revised view (Berry et al., 1987). Acculturation may also lead to changes in language, cognitive style, personality, identity, attitude, and behavior (Berry, 1980). This means that immigrants' parenting behavior could also be affected by acculturation, and could become one of the possible outcomes of acculturation.

Adaptation. During the acculturation process, individuals may achieve some adaptations (Berry, 2006). Adaptation refers to the relatively stable changes that individuals or groups experience as a result of them responding to environmental demands that arise after the intercultural contact. These adaptations include both short-term and long-term changes, and can take many different forms. Generally, most acculturating individuals eventually experience some long-term positive adaptation to the new cultural context even though they may experience some short-term negative or disruptive changes during acculturation (Beiser et al., 1988).

Researchers have proposed that there are two distinct adaptive outcomes (Searle & Ward, 1990). First, *psychological adaptation* refers to a set of internal psychological outcomes, such as good mental health, a clear sense of personal and cultural identity, and personal satisfaction in

the new cultural context. In contrast, *socio-cultural adaptation* refers to a set of external psychological and behavioral outcomes that serve as the link between individuals and their new context. Mainly, it represents individuals' ability to "fit in" and acquire culturally appropriate knowledge and skills to deal competently with the new environment. Specifically, Ward and colleagues conceptualized that sociocultural adaptations include knowledge of host culture, amount of interaction and identification with host nationals, language fluency, and length of residence in the new culture (Searle & Ward, 1990; Ward & Kennedy, 1993, 1994; Ward & Searle, 1991). Although these two adaptation outcomes have been found to be empirically related to each other, researchers have suggested that they should still be considered conceptually distinct because: (a) factors that are predictive of these two types of adaptations tend to be different (Ward, 1996), (b) theoretically, psychological adaptation is more closely linked to the stress and psychopathology frameworks while socio-cultural adaptation is more closely linked to social learning framework (Ward & Kennedy, 1992), and (c) these two adaptive outcomes have been found to display different patterns of fluctuation over time (Ward & Kennedy, 1996a, 1996b).

The current study examines the impact of these two types of adaptive outcomes on immigrant father involvement. Specifically, mental health problems will be used as a measure of psychological adaptation, and U.S. citizenship status, English proficiency, and primary language will be used as measures of sociocultural adaptation. However, all of these three measures have also been considered as proxy measures of acculturation itself, and are one of the most frequently used measures of acculturation. Therefore, the terms "sociocultural adaptation" and "acculturation" will be used interchangeably in the present study.

The Associations between Acculturation and Immigrant Father Involvement

As briefly explained previously, acculturation may function as a protective factor which contributes to more positive form of father involvement. This section provides some explanations about why each form of acculturation may influence father involvement positively.

U.S. citizenship status. Some evidence suggests that acquiring citizenship may be a proxy for acculturation, as citizenship has been found to be associated with factors related to acculturation, including home ownership, knowledge of language, and positive perceptions of the host society (Portes & Curtis, 1987). These factors suggest that immigrants who become naturalized may have stronger “roots” or connections to the host society (Portes & Curtis, 1987). Acquiring citizenship in the host country may also indicate an immigrant’s acceptance of the cultural and other norms in the host society as it changes an immigrant’s public identity (Evans, 1988; Yang, 1994).

Little research has examined the relationship between U.S. citizenship status and parenting among immigrants and, to our knowledge, only one study has examined the association between citizenship and father involvement. Capps et al. (2010) found that U.S. citizenship was negatively associated with parental warmth for Chinese immigrant fathers and with parental warmth and nurturing for Mexican immigrant fathers. However, this finding was in contrast to their hypothesis, and it was not clear why U.S. citizenship was negatively associated with father involvement. Therefore, it is important to test if this finding will replicate, and to investigate the underlying mechanisms of the association between U.S. citizenship and father involvement.

Although one previous study found a negative association between U.S. citizenship and father involvement, we still anticipate that acquiring citizenship may have some positive impacts

on immigrant father involvement. Previous studies have suggested that the lack of employment, underemployment, language barriers, barriers to services, and the stresses associated with these undesirable conditions are some of the biggest barriers to effective father involvement for immigrants (Shimoni et al., 2003). Acquiring citizenship is one of the ways to effectively overcome many of these barriers. Upon acquiring citizenship, employment opportunities will increase as immigrants will be eligible for certain jobs that are restricted for non-citizens or jobs that preference is often given to citizens (Bratsberg, Ragan, & Nasir, 2002; Yang, 1994). In addition, immigrants can gain full access to public benefits (Cox, 2004), and have better access to public programs, health insurances, and health care services (Carrasquillo, Carrasquillo, & Shea, 2000; Echeverria, & Carrasquillo, 2006; Jang, Lee, & Woo, 1998; Yu, Huang, Schwalberg, Overpeck & Kogan, 2003), which, in turn, may help them ameliorate their physical and mental health risks (Yu et al.). In addition, immigrant parents' acquisition of citizenship is associated with higher health insurance coverage and better access to health care services for their children (Brown, Wyn, Yu, Valenzuela, & Dong, 1999; Ojeda & Brown, 2005). Therefore, acquiring citizenship may ease some of their stresses and challenges associated with parenting. All of these will likely to help immigrant fathers better overcome some of major barriers to effective father involvement. Therefore, it is anticipated that acquiring citizenship will be associated with greater father involvement.

Language proficiency and primary language. Language proficiency and/or use is an important dimension of acculturation (Driedger, 1975; Hazuda, Stern, & Haffner, 1988; Sadowsky & Plake, 1991). Language proficiency and use may be both a proxy and a outcome of acculturation as those who learn and primarily use the language of the host society are more attached to the host culture than those who primarily speak their native language (Feliciano,

2001). Language proficiency is associated with increased interaction with members of the host society (Gullahorn & Gullahorn, 1966; Sewell & Davidsen, 1961) and less sociocultural adjustment problems (Sano, 1990; Ward & Kennedy, 1993).

According to previous studies, language barrier appears to be one of the greatest barriers for immigrants. Studies have found that immigrant families with limited English proficiency, (a) experience greater levels of economic distress and higher unemployment rate (Gonzalez, 2005), (b) earn a much lower wage (Mora, 2003 as cited in Martinez, Wang, & Petsod, 2006), (c) are three times more likely to live in poverty (Capps et al., 2002), and (d) are twice more likely to experience food insecurity and hunger (Capps et al., 2002), compared to their English-fluent counterparts. In addition, previous studies have generally reported the risk for immigrants with limited English proficiency with regard to physical and mental health. Those immigrants with limited English proficiency are much less likely to report good physical and mental health (Cheng, Chen, & Cunningham, 2007; Derose, Escarce, & Lurie, 2007; DuBard & Gizlice, 2008; Ponce, Hays, & Cunningham, 2006), tend to have fewer physician visits (Derose & Baker, 2000), receive less preventative care such as cancer screening (Jacobs, Karavolos, Rathouz, Ferris, & Powell, 2005), and are less likely to use mental health services (Folsom et al., 2007; Kang et al., 2010; Sentell, Shumway, & Snowden, 2007) than those who are proficient in English. Individuals with limited English proficiency are also much more likely to have problems understanding medical situation and labels and instructions on medication, and consequently, to experience adverse reactions to medications than those who are proficient in English (Wilson, Chen, Grumbach, Wang, & Fernandez, 2005). Immigrant fathers who have difficulty communicating in English also face barriers to accessing services because they tend not to have information about services, tend to think that help is unavailable or that professionals will not be

able to help them, and tend to avoid using those services in fear of stigmatization and deportation. Finally, immigrant parents' limited English proficiency is also associated with the risk for their children's health and health care (Flores, Abreu, & Tomany-Korman, 2005).

To put these findings the other way around, those immigrants who are more proficient in English or use English as their primary language is more likely to overcome these barriers (e.g., Lueck & Wilson, 2011). This is imperative for immigrant father involvement as these barriers are likely to hinder immigrant fathers' ability to be an involved father. In fact, studies have suggested that English proficiency and/or use are generally associated with parenting practices. English proficiency and/or use have been found to be associated with less hostile control and inconsistent discipline among Mexican mothers (Dumka, Roosa, & Jackson, 1997; Hill, Bush, & Roosa, 2003), higher levels of warmth and involvement among Puerto Rican mothers (Caldaza & Eyberg, 2002), and cognitively stimulating activities (i.e., reading, telling stories, and singing songs) with young children among Chinese fathers (Capps et al., 2010). Based on these premises and research findings, it is anticipated that English proficiency and the use of English as a primary language will be associated with greater father involvement.

The Associations between Mental Health Problems and Father Involvement

As briefly demonstrated previously, immigrant parents may have to face various stressors and challenges, and consequently, may develop mental health problems during the acculturation process. Their mental health problems may then disrupt the quality of immigrants' parenting behavior. The disrupted parenting behavior could be viewed as one of the long-term outcomes or adaptations in the acculturation process.

Numerous studies have examined the relationship between mental health problems and parenting behavior, and these studies have generally found the links between mental health

problems and parenting behavior (e.g., Briggs-Gowan et al., 2001; Brockington, 2004; Hindley, Ramchandani, & Jones, 2006; Pinderhughes et al., 2000; Quittner et al., 1990; Rodgers, 1998; Scannapieco & Connell-Carrick, 2005). Parents who suffer from mental health problems often have difficulty parenting (e.g., Arnold et al., 1997; Jain, Belsky, & Crnic, 1996; Kaslow et al., 1994). Depression is the most commonly studied mental health problem. For example, parental depression has long been known to increase the risk for difficult parent-child relationships (Patterson, 1982; Seagull, 1987). In addition, depressed parents often respond negatively and inadequately to their children's efforts to engage their attention (Conger et al., 1992, 1993; Downey & Coyne, 1990; Whitbeck et al., 1991). Moreover, maternal depression has been found to be associated with greater stress, negativity, hostility, physical abuse, and coercion in the mother-child relationship (e.g., Conger et al., 1995; Daniel, Hampton, & Newberger, 1983; Ge et al., 1994; Kaslow et al., 1994; McLoyd et al., 1994; Webster-Stratton & Hammond, 1988), diminished maternal sensitivity (Crnic, & Greenberg, 1987), decreased responsiveness (Longfellow, Zelkowitz, & Saunders, 1982), and more negative perceptions of child disturbance (Forehand & Brody, 1985). Furthermore, stress-related maternal depression and anxiety have been found to be associated with inconsistent discipline, lack of appropriate structure and guidance, and unrealistic expectations for their children (Crawford & Manassis, 2001; Rodgers, 1998).

Unfortunately, however, most of these studies focused only on mothers (Krumm, Becker, & Wiegand-Grefe, 2013; Simons, Whitbeck, Conger, & Melby, 1990; Wilson & Durbin, 2010), and little is known about the relationship between fathers' mental health and their parenting behavior. Nonetheless, the available evidence suggest that fathers' mental health does play a significant role in determining their parenting behavior. For example, paternal depression has

been associated with less optimal father-infant relationship (Field, Hossain, & Malphurs, 1999; Field, 2010; for a review, see Wilson & Durbin, 2010), less involvement with their children (Roggman, Boyce, Cook, & Cook, 2002), greater paternal unresponsiveness (Parfitt, Pike, & Ayers, 2013), more spanking and less reading (Davis, Davis, Freed, & Clark, 2011), more destructive parenting style (Simons et al., 1990), and less nurturing (McLoyd, 1989). In addition, studies comparing the relative effects of maternal and paternal depression on parent-child relationship and child outcomes have generally found meaningful effects for both mothers and fathers (Connell & Goodman, 2002; Kane & Garber, 2004; Klein, Lewinsohn, Rohde, Seeley, & Olino, 2005; Lewinsohn, Olino, & Klein, 2005; Ramchandani, Stein, Evans, & O'Connor, 2005; Ramchandani et al., 2008; Rohde, Lewinsohn, Klein, & Seeley, 2005).

In short, these findings support the notion that fathers' mental health problems are generally associated with their parenting behavior. Therefore, one can assume that mental health problems may also have some meaningful effects on immigrant fathers' parenting behavior. However, virtually no studies have examined the associations between acculturation, mental health problems, and parenting behavior for immigrant fathers. It is therefore important to study immigrant fathers and how acculturation and mental health problems may be associated with the quality of their parenting behavior.

The Role of Parenting Stress as a Mediator

In addition to examining the direct associations between acculturation and immigrant father involvement as well as between mental health problems and immigrant father involvement, the current study examines the mediating role of parenting stress in these associations. Although the link between acculturation and immigrant father involvement has been reported in previous studies, the research is still scarce and the mechanisms that explain the link between these

variables are not well understood. Some researchers have argued that, although acculturation has been used to identify immigrant groups that might be at higher risk, acculturation itself, may not be inherently problematic or advantageous. Rather, those of varying levels of acculturation are likely to be differentially exposed to risk or protective factors that are more proximally related and accountable to increase or decrease vulnerability to problem development (Escobar, 1998; Escobar & Vega, 2000; Hwang, Chun, Takeuchi, Myers, & Siddarth, 2005; Hwang & Myers, 2007). Therefore, the current study examines the role of parenting stress as a mediating factor that is more proximal to immigrant father involvement.

There are a few reasons why the current study examines parenting stress as a mediating factor between acculturation/mental health problems and immigrant father involvement. According to previous research, both acculturation and mental health problems are expected to be associated with parenting stress. On the one hand, acculturation may reduce parenting stress because learning cultural knowledge and skills and fit in the host society may help them overcome some of the challenges and barriers they experience during the transition into the new society (Berry, 1988, 1997). For example, as they learn the language of the host society and become more fluent, they will more likely to be able to get a better job and help themselves get out of the situation of undesirable situations, such as having multiple low-paying jobs to make ends meet, which in turn will allow them to have more time and mental space to take care of their responsibility as fathers and husbands. In addition, learning the language will also likely to help them become more aware of the public services and resources that are available to parents and actually utilize them. Moreover, as they fit into the new society better, they will more likely to be able to find neighbors and/or acquaintances with whom they can share ideas, resources, and experiences on parenting and can ask for help when needed. On the other hand, there is ample

evidence that those parents who suffer from mental health problems are more likely to experience parenting stress (Briggs-Gowan, et al., 2001; Pinderhughes et al., 2000; Quittner et al., 1990; Rodgers, 1998). Based on these premises, it is expected that acculturation will serve as a protective factor that reduces parenting stress while mental health problems will serve as a risk factor that increases parenting stress.

In addition to these possible associations with acculturation and mental health problems, parenting stress will also likely to be associated with immigrant father involvement. Previous work has proposed links between parenting stress and parenting behaviors (Abidin, 1997; Deater-Deckard and Scarr, 1996), and studies have shown that parenting stress is associated with a lack of warmth and responsiveness, inconsistent and harsh discipline, less nurturant behaviors, and developmentally inappropriate expectations for their child's behaviors (Crawford & Manassis, 2001; Creasey & Reese, 1996; Crnic & Greenberg, 1987; Karrass et al., 2003; Pinderhughes et al., 2000; Rodriguez & Green, 1996; Rubin, Stewart, & Chen, 1995). In addition, fathers have been found to withdraw from parenting under conditions of stress (Lindahl & Malik, 1999)

Based on these premises, parenting stress is expected to function as a mediating factor through which acculturation and mental health problems influence immigrant father involvement. Specifically, acculturation will be associated with less parenting stress, which in turn will be associated with better immigrant father involvement whereas mental health problems will be associated with more parenting stress, which in turn will be associated with poorer immigrant father involvement.

Impact of Immigration on Latino and Chinese Immigrant Fathers

When investigating the factors that may influence immigrant father involvement, it is crucial to examine how the impact of the factors on father involvement may differ or similar among immigrant fathers from different cultural backgrounds because previous studies have shown that parenting practices for various groups of immigrants may differ (Inman, Howard, Beaumont, & Walker, 2007; Julian et al., 1994) possibly because different cultures place different values, expectations, and norms on fathers' roles (Shimoni et al., 2003). In addition, the impact of acculturation on father involvement may also differ among immigrants depending on their sociocultural characteristics (e.g., Garcia & Lega, 1979; Olmedo & Padilla, 1978; Padilla, Wagatsuma, & Lindholm, 1985). In fact, studies have found that levels of acculturation (e.g., Sadowsky & Plake, 1992; Wong-Rieger & Quintana, 1987), processes of acculturation (e.g., Safdar, Calvez, & Lewis, 2012), and impact of acculturation (e.g., Rogler, Cortes, & Malgady, 1991) may all differ among immigrant groups. Therefore, it is possible that some immigrant groups are more likely to struggle adjusting to the host society, feel stressed, and consequently, withdraw from their parenting responsibility than other groups of immigrants. We cannot simply assume that all the immigrants are the same, and adopt a one-size-fits-all approach when helping immigrant families. It is imperative to figure out how immigrant groups may differ and what factors may be responsible for the differences in order to effectively help immigrant families.

In order to examine whether or not acculturation, mental health problems, and parenting stress exert a differential impact on parenting for fathers from different cultural groups, this study uses a sample of Latino and Chinese immigrant fathers. Although some may view fatherhood as universal, fatherhood is a complex, dynamic, and multi-faceted phenomenon which may change as a function of cultural, social, and economic changes (Lamb & Tamis-

LeMonda, 2004; LaRossa, 1997; Roopnarine, 2004). Therefore, it is imperative to review the literature on how Latino and Chinese fathers' cultural beliefs, values, attitudes, and behavior pertains to their involvement with their children and to understand the differences and similarities between these groups.

Latino fathers. Research on Latino immigrant fathers is very scarce (Cabrera & Coll, 2004) as most empirical research on Latino parents has focused on mothers (Dumka, Roosa, & Jackson, 1997). Research on Latino fatherhood has often portrayed Latino fathers as dominant, authoritarian, avoiding intimacy, distant, patriarchal, harsh disciplinarian, aggressive, or tyrannical ruler (Cabrera, Shannon, West, & Brooks-Gunn, 2006; Mayo, 1997; Mirande, 1991). In addition, Latino mother-father relationships has been described as having strong division of labor within their family in which mothers are considered as subordinate and are responsible for domestic work and caregiving while fathers are considered as the dominant breadwinners and are responsible for the matters that link the family to the outside world, such as work and participation in school activities (Cabrera & Coll, 2004). However, recent works suggest that Latino fathers are involved with their children in different dimensions including caretaking and physical play activities (Cabrera & Coll, 2004; Leavell, Tamis-LeMonda, Ruble, Zosuls, & Cabrera, 2012), and that the amount of caretaking responsibility they share with their partners is comparable to what fathers of other ethnic groups share with their partners (Roopnarine, Metindogan, & Evans, 2006). Cabrera and Coll (2004) argued that these recent findings imply that Latino fathers' parenting behavior has evolved from the traditional one into the one that is more egalitarian, and that they are now more flexible in the division of labor and more willing to be involved with their children than the previous generation fathers were.

However, it has also been suggested that there is tremendous within-group variation in this group (Cabrera & Coll, 2004). For example, D'Angelo, Palacios, and Chase-Lansdale (2012) found that there are significant differences between immigrant and non-immigrant Latino fathers on three dimensions of their involvement with their infant children. In particular, immigrant Latino fathers showed higher level of accessibility to their infants while they showed lower levels of engagement with and caretaking of their infants compared to their non-immigrant counterparts. Another study (Cabrera et al., 2006) found that Latino immigrant fathers' levels of acculturation (as measured by English proficiency) was associated with their caretaking and play but not with literacy involvement with their children. In addition, Capps et al. (2010) found that, for Mexican-origin immigrant fathers, the use of English in the household was negatively associated with nurturing and caretaking activities while the attainment of US citizenship was negatively associated with paternal warmth and nurturing. Although the underlying mechanisms of these variations have not been well explained, these findings do suggest that immigrant status and acculturation are both important predictors of variations in Latino immigrant fathers' involvement with their children, and that these factors may have a differential impact on different dimensions of father involvement (Cabrera et al., 2006).

Chinese fathers. Research on Chinese immigrant fathers is also limited, as most research on Chinese parenting has focused on mothers until recently (Capps et al., 2010). Chinese families have been described to have socially defined strong gender roles commonly characterized by the traditional "strict father, kind mother" image (Shwalb, Nakazawa, Yamamoto, & Hyun, 2004) which is emphasized in Confucian principles (Li & Lamb, 2013). Congruent with that image, Chinese fathers have been depicted as emotionally distant, controlling, authoritarian, and strict disciplinarian (Wolf, 1978; Li & Lamb, 2013).

However, the findings in a few studies suggest that Chinese fathers are more involved in child care than the previous generations. For example, Ho and Kang (1984) found that fathers in Hong Kong were more involved in child care than their fathers had been. Another study (Liu, 1995, as cited in Li & Lamb, 2013) found that Chinese fathers in Shanghai were more likely to consider that men should help take care of baby and to actually help with child-care tasks compared to their fathers' generation. Although it has not been confirmed by empirical research, Li and Lamb (2013) argued that social forces including China's family planning policy (i.e., one child policy) and policies that encourage gender equality, female education and employment, and paternal leave may all have contributed to the increased father involvement.

On the other hand, despite the increased paternal involvement compared to the previous generations, Chinese fathers' involvement still tends to be occasional, intermittent (Wang & Yu, 1997) and emotionally distant (Jankowiak, 2010; Xu & Zhang, 2008, as cited in Li & Lamb, 2013), and there is discrepancy between their motivation and actual involvement (Huang & Wang, 2007, as cited in Li & Lamb, 2013). Similar to the case of Latino fathers, Chinese fathers also have been found to undergo acculturation changes and adjustments when they migrate which create within-group variations in Chinese fathers' involvement with their children depending on how they acculturate. For example, Chuang and Su (2009) found that Chinese immigrant fathers in Canada were more involved in decision making about child care than mainland Chinese fathers. Capps et al. (2010) found that different measures of acculturation were uniquely associated with different types of father involvement for Chinese fathers. Specifically, the attainment of US citizenship was negatively associated with paternal warmth while English language proficiency was positively associated with literacy activities with their young children.

Differences and Similarities between Latino and Chinese Immigrant Fathers.

Although research on Latino and Chinese fatherhood is still very scarce, the findings in the previous research discussed above suggest a few similarities and differences between Latino and Chinese immigrant fathers. First, both Latino and Chinese immigrant fathers seem to be more willing to be involved with their children than their previous generations. Second, immigration is likely to bring about some changes in their parenting behavior. However, cultural and social expectations, values, and norms on fatherhood as well as their actual behaviors in their native culture are not identical; therefore, they may experience changes in their parenting behaviors in different degrees, dimensions, and trajectories as a result of immigration and acculturation. In fact, although acculturation has been found to be associated with psychological functioning of immigrants, the directions of the association have been found to vary due in part to the immigrants' ethnic background and host country of immigration (Escobar, Hoyos Nervi, & Gara, 2000). It underscores the importance of evaluating the impact of acculturation for each immigrant groups in each host country independently.

However, only one of these studies (Capps et al., 2010) compared Latino (i.e., Mexican-origin fathers only in their study) and Chinese immigrant fathers directly. Capps et al. (2010) found that the use of English in the household was negatively associated with nurturing and caretaking activities for Latino immigrant fathers while English language proficiency was positively associated with literacy activities with their young children for Chinese immigrant fathers. These results suggest that acculturation may have differential effects on Latino and Chinese immigrant fathers and on different types of involvement, and that Latino and Chinese immigrant fathers may employ different types of acculturation strategies. However, the lack of cross-cultural comparisons on immigrant fathers makes it difficult to ascertain how similar or

different they really are in how they change or preserve their cultural values and practices on fatherhood during the transition and what factors are contributing to their differences. Therefore, the lack of examinations on immigrant fathers challenges the theoretical relevance of research on American fathers (Cabrera & Coll, 2004) and questions its applicability to design interventions for immigrant fathers. Studying immigrant fathers as a group without concerning within-group variations may result in overlooking the important variations in father involvement and failing to gain important insights about what can be done to improve the lives of immigrant fathers and their children.

The Lack of Longitudinal Examinations on Immigrant Father Involvement

As mentioned before, the amount of research on immigrant fathers is still scarce, and the lack of longitudinal examinations on immigrant father involvement is even more evident. In particular, only a few studies have examined the longitudinal associations between acculturation and immigrant father involvement.

Nonetheless, findings in the following few studies underscore the importance of such longitudinal examinations. For example, Qin (2009) conducted a qualitative study on 72 Chinese immigrant families with children aged between 9 and 14 and concluded that parental adaptation difficulty, particularly among fathers, has led to decreased physical and psychological presence in their children's lives, and it may have contributed to the estranged parent-child relationships. In addition, two recent studies have examined the association between acculturation discrepancy between fathers and children and its effect on father involvement. Ying and Han (2007) conducted a longitudinal study of 490 Southeast Asian adolescents and confirmed that acculturation discrepancy between immigrant fathers and their adolescent children predicted father-child conflict three years later. In addition, this father-child conflict was predictive of the

adolescents' depressive symptoms. Similarly, Kim, Chen, Wang, Shen, and Orozco-Lapray (2013) found that acculturation discrepancy between Chinese immigrant fathers and their adolescent children was associated with the fathers' use of unsupportive parenting practices, and the fathers' use of unsupportive parenting was associated with an increased sense of estrangement between fathers and adolescents.

These findings suggest that immigration and acculturation is a long-term process, and the impact of immigration and acculturation may contribute to the long-term changes in the nature of father involvement and parent-child relationships. However, due to the lack of longitudinal examinations of the impact of immigration and acculturation on father involvement, only a few particular aspects of acculturation and its impact on a few specific groups of immigrant fathers with relatively older children have been explored. Therefore, even though the results of some cross-sectional studies suggest that immigration and acculturation exert certain influences on father involvement and such influence may be different between spouses, parent and child, and cultural groups, they are largely unexplored in a longitudinal study, and thus, the longitudinal impact of immigration and acculturation on father involvement is largely unclear. In addition, no longitudinal studies to date have examined immigrant father involvement with young children. In order to better understand the nature of the process of acculturation and its impact for various groups of immigrant fathers, it is imperative to utilize longitudinal research methods in studying this important population. The present study contributes to the literature by exploring the cross-cultural similarities and differences between Latino and Chinese immigrant fathers in the longitudinal impact of acculturation on their involvement with their young children.

Conceptual Model

Given that parenting stress and mental health problems have been theorized to negatively affect parenting behavior, and that it has been supported in previous studies, the conceptual model for this study posits that parenting stress and mental health problems are risk factors for parenting behavior. On the other hand, acculturation is expected to serve as a protective factor that may also have a buffering effect on the negative relationship between stress or mental health problems and parenting behavior since they are likely to be positively associated with their parenting behavior. For example, even if the immigrants initially experience unemployment and loss of social networks after migration, they may be able to find a better chance of finding an employment and/or a new network of friends if they decide to learn the new language and culture and it could contribute to reduce the negative impact of unemployment and loss of social networks. On the other hand, if stress and mental health problems are high, and acculturation is too low, meaning that they do not attempt to integrate any aspects of the new culture, a positive direct effect and a buffering effect of acculturation may not be present. Based on these empirically and conceptually derived associations, we present our conceptual model in Figure 1. Acculturation in this model represents more positive forms of acculturation which assumes some degree of integration of the new culture with the culture of origin. Essentially, this model assumes that acculturation, mental health problems, and parenting stress all have a direct influence on subsequent immigrant father involvement. Acculturation and mental health problems also have a direct influence on parenting stress. In addition, it is proposed that parenting stress mediates the relationship between acculturation and father involvement and between mental health problems and father involvement.

Control variables. Previous studies have identified a number of other factors that are often associated with acculturation and immigrant father involvement. These variables are included as control variables to control the effect of these variables and better isolate the association between the target variables. It is important to note that we used the list of control variables in Capps et al.'s (2010) study as a guide for selecting these control variables because their study also used the ECLS-B dataset, and the sample groups are very similar. As a result, most of the control variables used in the current study are what Capps et al. used for their study. Doing this would make the two studies more comparable, and it may allow us to make better and clearer conclusions.

Socioeconomic status (SES). The current study includes SES as a control variable because of the strong association between SES and parenting and the confounding of SES and culture found in previous studies of minority families (McKenry, Everett, Ramseur, & Carter, 1989; Staples & Mirande, 1980).

Father's characteristics. Fathers' age is controlled since findings in previous studies have suggested that fathers' age is predictive of father involvement (Cooksey & Craig, 1998). In addition, father's working hours is controlled as prior research has found that fathers who work longer hours are less involved with their children (Pleck & Masciadrelli, 2004). Furthermore, fathers' general health condition is also controlled since there is some evidence that fathers' general health is associated with father involvement (Eggebeen, Knoester, & McDaniel, 2013). The impact of fathers' antisocial behavior is also controlled since it has been found to be associated with children's antisocial behavior mediated by poorer parenting behavior (e.g., Thornberry, Freeman-Gallant, & Lovegrove, 2009). Lastly, length of US residence and age first entered the US are controlled in the analyses. Although these two variables have often been used

as the proxy measures of acculturation and could contribute to the degree of acculturation, they are not direct indicators of the degree of some forms of acculturation. In addition, according to the acculturation framework (Berry, 1997), these factors should rather be considered as moderating/mediating factors that may affect acculturation. Therefore, these two variables are used to control the impact of the passing of time on the degree of acculturation.

Child characteristics. Characteristics of children have also been found to be important predictors of parenting (Belsky, 1984). Child's gender is included as a control since fathers have been reported to treat boys and girls differently (e.g., Keller & Zach, 2002). Child's age is also included because studies have found that different factors are associated with father involvement at different developmental stages of their children (Flouri & Buchanan, 2003).

In addition, children's disability status is included as a control since some studies have suggested that children's disabilities are associated with higher stress levels and more caregiving challenges for both fathers and mothers (Baxter, Cummins, & Polak, 1995; Dyson 1997; Esdaile & Greenwood 2003; Roach, Orsmond, & Barratt, 1999; Sanders & Morgan 1997), and some studies have found that fathers of children with disabilities are less involved than fathers of typically developing children (e.g., Hodapp, 2002; Konstantareas & Homatidis, 1992). In addition, higher rate of disability has been found among immigrant children than among native-born children (Waldman, 2008).

Quality of father-mother relationship. As it has been conceptualized (e.g., Belsky, 1984), strong linkages between the quality of father-mother relationships and father involvement have been found in the literature (e.g., Berger, Carlson, Bzostek, & Osborne, 2008). Therefore, both *relationship satisfaction* and *relationship conflict* are controlled in the model.

Family of origin characteristics. Acculturation framework and the framework on the determinants of father involvement (Belsky, 1984) suggest that fathers' own experiences in their family of origin affect how they interact with their children, and findings in previous studies have supported this notion. For example, Beaton and colleagues (Beaton & Doherty, 2007; Beaton, Doherty, & Rueter, 2003) have found that parent-child relationships in fathers' family of origin is associated with their attitudes toward father involvement. Based on these, *father presence* and *mother presence* in the family of origin are used as control variables.

Other controls. Both Berry's (1997) acculturation framework and major framework on the determinants on father involvement (e.g., Belsky, 1984) suggest that supportive relationships and social support have positive impact on father involvement, and research findings support this premise. Support from family and friends generally have been found to be associated with reduced parenting stress (Degarmo, Patras, & Eap, 2008; Melson, Windecker-Nelson, & Schwarz, 1998), better psychological, emotional, and economic well-being of parents (Henly, Danziger, & Offer, 2005), and better quality of parenting (Hashima & Amato, 1994). In addition, social contact also have been found to help immigrant fathers reduce their stress and confusion that result from immigration and acculturation (Contreras, 2004; Finch & Vega, 2003; Lindahl & Malik, 1999) by providing them with resources (Griffith & Villavicencio, 1985; Sanders & Nee, 1996). In addition, adequate child care arrangement has been found to be associated with child maltreatment (Seagull, 1987). Based on these premises, frequency of social contact and regular child care are included as controls.

Research Hypotheses

The following hypotheses are formulated based on the acculturation framework, stress and coping framework, and empirical findings in previous studies.

1. The more acculturated immigrant fathers with Latino and Chinese origins are, the more likely they will be involved with their young children at later time.
2. The more mental health problems and parenting stress they experience, the less likely they will be involved with their children at later time.
3. Parenting stress will mediate the longitudinal association between acculturation and immigrant father involvement in that the more acculturated immigrant fathers are, the less parenting stress they experience at later time. The less parenting stress they experience, the more likely they will be involved with their children at later time. In addition, parenting stress will mediate the longitudinal association between mental health problems and immigrant father involvement in that the more mental health problems immigrant fathers experience, the more parenting stress they experience at later time, and the more parenting stress they experience, the less likely they will be involved with their children at later time.
4. The different aspects of acculturation will have differential influence on father involvement for Latino vs. Chinese immigrant fathers. However, there is not enough evidence to help formulate specific hypotheses in terms of how these groups may be different. Even the only available study (Capps et al., 2010) that has compared the nearly identical groups had a competing finding. Although their findings suggest that these groups are likely to be different, it is not possible for us to make clear inferences in terms of how and why these groups may differ based on available findings. Thus, this hypothesis is only exploratory in nature and a hypothesis that specifies how these groups will be different is not made.

Chapter 3: Methods

Sample

This study utilizes a sample of 300¹ foreign-born Latino and 200¹ foreign-born Chinese resident fathers who had participated in the Early Childhood Longitudinal Study Birth Cohort (ECLS-B: Nord et al., 2004) study. This is a subsample of the larger ECLS-B data collection. The data includes a total of approximately 1600 foreign-born fathers who have migrated to the United States. For this study, we focus on Latino and Chinese immigrant fathers because they are both one of the largest groups of recent immigrants (Capps et al., 2005), and yet, they still have rarely been studied (Cabrera & Coll, 2004). In addition, we limit our sample to biological resident fathers because nonresident fathers were administered a different questionnaire in ECLS-B, and biological status was not the focus of our study though biological status of fathers has been found to affect fathering practice (Berger, Carlson, Bzostek, & Osborne, 2008). ECLS-B is the first longitudinal study of nationally representative sample of U.S. children that follow children in the early developmental period from infancy through the start of kindergarten (Mollborn, Fomby, & Dennis, 2011). The study collected the data in four waves at approximately 9 months after birth, 2 years, and 4 years, and entrance to kindergarten. However, we used the data from the first three waves because fathers were asked to complete the self-report questionnaire only for the first three waves.

It is important to note that the study sample is limited to those fathers who completed the questionnaire in all three waves because the weights are given only to those who completed the questionnaire. The ECLS-B dataset is a stratified cluster sample with the United States divided into 90 strata, thus sample weights were used with the dataset so that it would be representative of the national population of infants born in the United States in 2001. Therefore, it is necessary

¹ As per NCES data security requirements when using ECLS-B data, all *n* values are rounded to the nearest 50.

to apply the appropriate weights when analyzing the data in order for the results to reflect the nationally representative sample. In addition, the nonresponse bias found for fathers in the ECLS-B sample is corrected by adjustment to the sampling weights (Bethel, Green, Kalton, & Nord, 2005).

Table 1 reports the weighted means, percentages, and standard deviations of the variables for foreign-born Latino and Chinese fathers. One notable pattern of the differences between foreign-born Latino and Chinese fathers is that, overall, foreign-born Latino fathers are more disadvantaged compared to foreign-born Chinese fathers. Specifically, foreign-born Latino fathers are significantly less educated, more likely to live below the poverty line and have lower socioeconomic status, more likely to have engaged in antisocial behavior, less likely to have had their biological father living with them when they were young, and less likely to have regular child care for their children. On the other hand, foreign-born Chinese fathers are significantly more likely to have relationship conflict with their spouse/partner and less likely to have social contact with their friends and neighbors.

Measures

Dependent variables. The ECLS-B asked resident fathers about their behaviors in various aspects of their children's lives. For the current study, we examined two types of father involvement; *care-taking* and *literacy or language*.

Care-taking involvement. The measure consisted of 6 items assessing how often they did the following tasks in the past month: (a) changing diapers, (b) preparing meals or bottles, (c) feeding their child or giving their child a bottle, (d) putting their child to sleep, (e) washing or bathing their child, and (f) dressing their child. First, the original response categories were reverse-coded so that higher scores indicate more involvement which resulted in the following

categories: 1 (*not at all*), 2 (*rarely*), 3 (*a few times a month*), 4 (*a few times a week*), 5 (*about once a day*), and 6 (*more than once a day*).

Then, confirmatory factor analysis (CFA) was employed to create the model of care-taking involvement at each time point. The models fit the data very well, $\chi^2(2) = 3.06, p > .05$, comparative fit index (CFI) = 1.00, root-mean-square error of approximation (RMSEA) = 0.03, for the involvement at 9 months, $\chi^2(2) = 2.50, p > .05$, CFI = 1.00, RMSEA = 0.02, for the involvement at 2 years, $\chi^2(2) = 0.27, p > .05$, CFI = 1.00, RMSEA = 0.00, for the involvement at 4 years. The standardized coefficients for the measurement indicators of the latent constructs ranged from 0.60 to 0.80 for Time 1, from 0.50 to 0.85 for Time 2, and from 0.65 to 0.78 for Time 3. From these models, factor scores were saved and used in the following analyses. One advantage of the use of CFA compared to the use of simple sum or average scores is that measurement error is accounted for.

Literacy or language involvement. The measure consisted of three items assessing how often fathers did the following activities for their children in a typical week: (a) read books to their child, (b) tell stories to their child, and (c) sing songs to their child. The responses were based on the following 4-point Likert scale; 1 (*not at all*), 2 (*once or twice*), 3 (*three to six times*), and 4 (*every day*). As with care-taking involvement, literacy or language involvement measures for each wave were constructed via CFA. The models were saturated, and thus, fit statistics could not be evaluated. From this model, factor scores were saved and used in the following analyses. The standardized coefficients for the measurement indicators of the latent constructs ranged from 0.48 to 0.82 for Time 1, from 0.30 to 0.77 for Time 2, and from 0.49 to 0.91 for Time 3.

Predictors.

Acculturation. Three measures of acculturation were used as the primary predictors: U.S. citizenship status, English proficiency, and primary language. U.S. citizenship status was assessed by asking foreign-born fathers and mothers if they were a citizen of the United States. Those who responded “yes” were coded as 1, and those who responded “no” were coded as 0.

English proficiency was measured based on a series of questions assessing how well foreign-born fathers and mothers : (a) spoke English, (b) read English, (c) wrote English, and (d) understood English. The responses to these questions were recorded on a 4-point Likert scale: “not well at all,” “not very well,” “pretty well,” or “very well.” The responses were coded so that higher scores indicate more proficiency. CFA was also employed to construct the father’s and mother’s English proficiency measures. A single model was created for father’s and mother’s English proficiency separately. The models fit the data very well, $\chi^2(1) = 1.98, p > .05, CFI = 1.00, RMSEA = 0.04$ for father’s English proficiency, and $\chi^2(1) = 2.05, p > .05, CFI = 1.00, RMSEA = 0.05$ for mother’s English proficiency. The standardized coefficients for the measurement indicators of the latent constructs ranged from 0.77 to 0.98 for father’s English proficiency and from 0.89 to 0.97 for mother’s English proficiency. From these models, factor scores were saved and used in the analyses.

Regarding their primary language, fathers were asked if their primary language was English, both English and other language, or other language. Those who indicated other language was the primary language were coded as 1, those who indicated both English and other language were the primary language were coded as 2, and those who indicated English was the primary language were coded as 3. For mothers, they were given only two options: other language, or

English. Those who indicated other language was the primary language were coded as 1, and those who indicated that English was the primary language was coded as 2.

These measures have been identified and used as the proxy measures of acculturation in previous studies (e.g., Capps et al., 2010; Cabrera et al., 2006). Both fathers' and mothers' data were used for all of these measures as previous studies have shown that one spouse's acculturation may be associated with the other spouse's involvement with their children (e.g., Cabrera et al., 2006) and acculturation is not only an individual process, but also a family process. Because fathers answered these questions only once at the first wave of the study, acculturation is used as a time-invariant predictor.

Fathers' depressive symptoms. Immigrant fathers may develop depressive symptoms during the process of acculturation (Berry, 1976) as a result of facing unique challenges, stressors, and difficulties adjusting in the host society (Shimoni et al., 2003). In addition, fathers' depressive symptoms have been found to be negatively associated with levels of father involvement (e.g., Bronte-Tinkew, Moore, Matthews, & Carrano, 2007).

ECLS-B used a modified version of the Center for Epidemiological Studies-Depression Scale (CES-D) (Radloff, 1977) to measure depressive symptoms. This scale consists of 12 items assessing how often in the past week fathers felt: (a) bothered by things that usually don't bother them, (b) did not feel like eating; their appetite was poor, (c) could not shake off the blues, even with help from their family and friends, (d) had trouble keeping their mind on what they were doing, (e) depressed, (f) that everything they did was an effort, (g) fearful, (h) sleep was restless, (i) talked less than usual, (j) lonely, (k) sad, and (l) could not get going. The original response categories were 1 (*rarely or never [less than 1 day]*), 2 (*some or a little [1-2 days]*), 3 (*occasionally or moderate [3-4 days]*), and 4 (*most or all [5-7 days]*). As with father involvement

measures, CFA was employed to construct the mental health problem measure. A single model was created with all of the 12 indicators. The model fit the data very well, $\chi^2(40) = 15.29, p > .05$, CFI = 1.00, RMSEA = 0.00. The standardized coefficients for the measurement indicators of the latent constructs ranged from 0.40 to 0.84. Factor scores were then generated and saved as the variable to be used in the subsequent analyses.

Parenting stress. Parenting stress has been found to be associated with poorer parenting practices, such as being less responsive and affectionate with their children and being more likely to use power-assertive techniques (McLoyd, 1990).

Fathers were asked at 2 years after the child birth if they: (a) find themselves giving up more of their life to meet their child's needs than they ever expected, (b) have been unable to do new and different things since their child was born, (c) expected to have closer and warmer feelings for their child than they do and this bothers them, (d) think their child is able to do less than they expected, and (e) feel trapped by their responsibilities as a father. The response to these questions were recorded on a 4-point Likert scale: strongly disagree, disagree, agree, or strongly agree. CFA was employed to construct the parenting stress measure. A single model was created with the 4 indicators. The model fit the data very well, $\chi^2(3) = 0.35, p > .05$, CFI = 1.00, RMSEA = 0.00. The standardized coefficients for the measurement indicators of the latent constructs ranged from 0.30 to 0.77. Factor scores were then generated and saved as the variable to be used in the subsequent analyses.

Control variables. The following variables were used to control the effect of these variables on the associations between acculturation, depressive symptoms, parenting stress, and father involvement as these variables have been thought and found to be associated with father involvement.

Socioeconomic status (SES). The SES variable used in this study was generated by National Center for Education Statistics (NCES) as a composite variable that takes into account the following factors: (a) mothers' education, (b) mothers' labor force status, (c) mothers' occupation, (d) fathers' education, (e) fathers' labor force status, (f) fathers' occupation, and (g) family income. All of these variables were first standardized and then averaged to create the SES variable. The scores ranged from -2.10 to 2.25.

Fathers' characteristics. Fathers' age originally had much larger variance value than the other variables because the range of the values for this variable was much wider than those for the other variables. Because this large variance value seemed to be causing an error when running the SEM model, we decided to rescale the variable by dividing the values by its interquartile range (IQR). IQR was used following the recommendation by Babyak (2009).

As with fathers' age variable, father's working hours was also rescaled by dividing it by IQR. Father's general health was a one-item measure asking if they would say their health in general is: (a) excellent, (b) very good, (c) good, (d) fair, or (e) poor.

In terms of fathers' antisocial behavior, fathers were asked if they have ever been: (a) suspended or expelled from school; (b) fired or laid off from a job because of behavior, attitude, or work performance; (c) in a facility overnight for a psychological or mental health problem; (d) had a drinking or drug problem or have other people thought you had one; (e) convicted of driving while intoxicated or drunk driving; or (f) put in jail, arrested or convicted of a crime, other than drunk driving. They answered either yes or no to these questions. Originally yes was coded as 1 and no was coded as 2, but they were recoded as 1 = 1 and 2 = 0, and the scores on the 6 questions were added together to create a composite score on antisocial behavior. As a

result, those who answered “yes” to all the six questions had a score of 6 while those who answered no to all the questions had a score of 0.

As with fathers’ age, length of US residence and age first entered the US were also rescaled using their IQR.

Child characteristics. Child gender and child’s age were included as controls. Child’s age was also rescaled using its IQR.

Child’s disability status variable indicates whether or not child has a disability. Children are considered to have a disability if they have been diagnosed to have a disability or are receiving any services for children with disability.

Quality of father-mother relationships. In terms of relationship satisfaction, fathers were asked whether they feel very happy, fairly happy, or not too happy about their relationship with their partner. The item was reverse-coded so that higher scores indicate a higher relationship satisfaction. In addition, a 10-item measure of relationship conflict was created. These items assessed how often fathers argue with their spouse/partner about: (a) chores and responsibilities, (b) their children, (c) money, (d) not showing love and affection, (e) sex, (f) religion, (g) leisure time, (h) drinking, (i) other women or men, and (j) in-laws, with response categories ranging from 1 (*often*), 2 (*sometimes*), 3 (*hardly ever*), to 4 (*never*). Responses were reverse-coded so that higher scores indicate a higher level of relationship conflict. CFA was used to construct the measure. The model fit the data very well, $\chi^2(26) = 17.515, p > .05$, CFI = 1.00, RMSEA = 0.00. The standardized coefficients for the measurement indicators of the latent constructs ranged from 0.25 to 0.75. Factor scores were then generated and saved as the variable to be used in the analyses.

Family of origin characteristics. Father presence and mother presence were measured as years fathers lived with their biological father and mother until age 16 (range = 0 – 16). These two variables were rescaled by dividing by 16. IQR was not used to divide the original values because 25 percentile and 75 percentile of the values were the same for these two variables, and thus, dividing by IQR did not work. In addition, a continuous variable that measures how close fathers feel to their biological father and mother were also used. The original items were reverse coded creating an index of closeness to father and mother ranging from 1 (*not very close*) to 4 (*extremely close*).

Frequency of social contact. Frequency of social contact was measured by asking fathers how often they and their spouse/partner get together socially with their friends and neighbors since their child was born, with response categories ranging from 1 (*never*), 2 (*less than once a month*), 3 (*about once or twice a month*), 4 (*about once a week*), to 5 (*several times a week*).

Table 2 reports the correlations, means, and standard deviations for the variables used in the analyses with the entire sample of the study.

Analytic Strategies

In order to test the hypotheses, multiple group structural equation modeling (SEM) was employed for this study.

Model specification. Figure 1 shows a model representing the relationships between immigrant father involvement and its predictors and moderators. Two separate models for care-taking and literacy or language involvement will be evaluated with the same model specification except for the use of different father involvement variables as the dependent variables.

Analysis plan. As an initial step in examining the hypotheses, separate SEM models for care-taking and literacy or language involvement were estimated in order to test the fit of the

model using the full sample (i.e., both foreign-born Latino and Chinese fathers). However, there was an estimation problem that appeared to be caused by some of the control variables. As a remedy, the residuals of the effects of these control variables on father involvement variables and parenting stress were produced by regressing these variables onto the control variables. The residuals of these regressions were then saved and used in place of the original variables. This is functionally equivalent to controlling for these variables in the model. “Residualizing” father involvement and parenting stress variables were optimal given the estimation problem when adding the control variables in the model (Dyer & Day, 2015).

After residualizing father involvement and parenting stress variables, multiple group structural equation modeling analysis were then conducted to examine how the relationships among the variables are similar or dissimilar across foreign-born Latino and Chinese fathers. Initially, models were estimated with all the parameters being allowed to vary freely across groups. Then, after a model is specified with parameters estimated separately for each group, equality constraints across groups were placed on all of the associations. Then, a test of significant differences between the model fits were examined to determine whether there is a difference by groups in the model parameters. The Satorra-Bentler scaled chi-square was used to do all of the chi-square difference tests because it is necessary to adjust the chi-square when using the MLR estimator (Satorra, 2000).

The analyses were conducted using Mplus 7.11 (Muthén & Muthén, 2012) incorporating the weights included for each case into the analyses in order to make appropriate adjustments for differential selection probabilities and reduce bias associated with nonresponse. The selection of appropriate weights for the analyses was done by following the NCES guideline (Nord et al., 2006).

Model fit. The model fit was assessed using both absolute and incremental fit indices as it has been suggested for SEM analyses (e.g., Hoyle & Panter, 1995). For the current study, the Chi-square statistic (χ^2), root mean square error of approximation (RMSEA; Steiger & Lind, 1980) were used as absolute fit indices, and comparative fit index (CFI) was used as an incremental fit index. RMSEA values of .06 or less, and CFI values of .95 or greater are recognized as indicative of good fit (Hu & Bentler, 1999).

The Chi-square statistic is a traditional measure of evaluating overall model fit and it still retains its popularity; however, alternative fit indices have been developed and used due to the severe limitations in the Chi-square statistic, such as the restrictions associated with the assumption for multivariate normality and sensitivity to sample size (Nevitt & Hancock, 2000). Specifically, the Chi-square statistic may reject the model when the data severely deviates from normality (Mcintosh, 2006) and may even nearly always reject the model when the sample size is large (Bentler & Bonnet, 1980). On the other hand, when the sample size is small, the Chi-square statistic lacks power and may not discriminate good fitting models between poor fitting models (Kenny & McCoach, 2003).

The RMSEA (Steiger & Lind, 1980) represents the population discrepancy per degree of freedom for the model (Duncan, Duncan, & Strycker, 2006), and has become popular as one of the most informative fit indices (Diamantopoulos & Sigaw, 2000). RMSEA favors parsimony in that, if there are two models with the same degree of fit in the population, the model with fewer parameters (with greater degrees of freedom) will be identified as the preferred model because it will yield a smaller RMSEA value (Browne & Cudeck, 1992; Nevitt, & Hancock, 2000). Another advantage of the RMSEA is that it is possible to calculate a confidence interval around its value (MacCallum, Browne, & Sugawara, 1996) which allows a more precise test for

the null hypothesis (McQuitty, 2004). Hu and Bentler (1998, 1999) found that RMSEA is more sensitive to misspecified factor loadings.

The CFI (Bentler, 1990) is a revised form of the normed-fit index (NFI) which compares the χ^2 value of the model to the χ^2 value of the null model. Because NFI tended to underestimate fit especially in smaller sample sizes, Bentler (1990) developed CFI taking into account sample size so that it would reflect model fit well at various sample sizes. The CFI assumes that all latent variables are uncorrelated or independent. Similar to RMSEA, CFI has been found to be more sensitive to misspecified factor loadings.

Chapter 4: Results

Care-Taking Involvement

The model fit the data very well, $\chi^2(4) = 2.51, p > .05$, CFI = 1.00, RMSEA = 0.00. Thus, the multiple group SEM analysis was conducted to evaluate whether the model is equal for Latino and Chinese immigrant fathers. The chi-square difference was not significant $\Delta\chi^2(23) = 17.54, p > .05$, indicating that the models for the two groups were not significantly different. The path coefficients for the overall model as well as for the model for Latino and Chinese groups are shown in Table 3.

In the multiple-group model, there were a few significant associations among the studied variables. First, the positive associations between care-taking involvement at 9 months and 2 years as well as between care-taking involvement at 2 years and 4 years were both significant, indicating that the level of care-taking involvement at earlier time predicts the level of care-taking involvement at later time. Second, fathers' English proficiency at 9 months was negatively and significantly associated with parenting stress at 2 years for both Latino and Chinese fathers, indicating that the more proficient in English immigrant fathers were at 9 months, the less parenting stress they experienced at 2 years. Interestingly, mothers' English proficiency had marginally significant associations with care-taking involvement at 2 years for both Latino and Chinese fathers, indicating that the more proficient in English immigrant mothers are, the more involved fathers tend to be with their children.

In addition to these significant associations in the multiple-group model, there were a few significant associations found in the overall model. First, the associations between care-taking involvement at 9 months and 2 years as well as between care-taking involvement at 2 years and 4 years were both significant, indicating that the level of care-taking involvement as they were in

the multiple-group model. In addition, there were a few paths that were significant in the overall model while not significant in the multiple-group model. Fathers' English proficiency was negatively and significantly associated with care-taking involvement at 2 years, indicating that the more proficient fathers were in English at 9 months, the less involved they were with their children at 2 years. Interestingly, fathers' English proficiency had positive and marginally significant association with care-taking involvement at 4 years indicating that the more proficient fathers were in English at 9 months, the more involved they tended to be with their children at 4 years. On the other hand, fathers' US citizenship was positively and significantly associated with care-taking involvement at 2 years, indicating that those who had obtained US citizenship by 9 months were more involved with their children at 2 years.

Literacy or Language Involvement

The model fit the data very well, $\chi^2(4) = 1.42, p > .05$, CFI = 1.00, RMSEA = 0.00. Thus, the multiple group SEM analysis was conducted to evaluate whether the model is equal for Latino and Chinese immigrant fathers. The chi-square difference was not significant $\Delta\chi^2(23) = 16.39, p > .05$, indicating that the models for the two groups were not significantly different. The path coefficients for the overall model as well as for the model for Latino and Chinese groups are shown in Table 4.

In the multiple group model, there were a few significant associations among the studied variables. First, as with care-taking involvement, the positive associations between literacy or language involvement at 9 months and 2 years as well as between literacy or language involvement at 2 years and 4 years were both significant, indicating that the level of literacy or language involvement at earlier time predicts the level of literacy or language involvement at later time. In addition, as with the case of care-taking involvement, fathers' English proficiency

at 9 months was negatively and significantly associated with parenting stress at 2 years, indicating that the more proficient in English fathers were at 9 months, the less parenting stress they experienced at 2 years. Interestingly, mothers' US citizenship had a negative and marginally significant associations with fathers' literacy or language involvement at 2 years, indicating that those fathers whose wives had obtained US citizenship by 9 months tended to be less involved at 2 years.

On the other hand, in the overall model, the association between fathers' English proficiency at 9 months and parenting stress at 2 years was only marginally significant, and the association between mothers' US citizenship and fathers' literacy or language involvement at 2 years was not significant in the overall model.

Chapter 5: Discussion

Using a nationally representative longitudinal sample of young children and their resident immigrant fathers with Latino and Chinese origin, the current study sought to investigate whether or not acculturation has long-term associations with immigrant father involvement, if immigrant fathers' mental health and parenting stress play a role in such associations, and if such association is different between different groups of immigrant fathers.

Care-Taking Involvement

In contrast with the first hypothesis, fathers' English proficiency significantly and negatively predicted care-taking involvement at 2 years in the overall model. However, it was marginally and positively significant in predicting care-taking involvement at 4 years even after controlling for the previous levels of care-taking involvement at 9 months and 2 years. This competing finding is little confusing, and it is not clear how this may have happened. One possible factor that might be contributing to this competing finding is children's ability to speak English. When children are 2 years old, they are still too young to communicate well verbally. Therefore, father's ability to speak English may not be essential when they interact with their 2 year old child, and some unmeasured underlying variables may be more influential and may be functioning as a mediating variable for the negative associations between fathers' English proficiency and father involvement. In contrast, children are likely to have learned to speak English by the time they reach the age 4, and it makes easier for fathers to communicate with their child if fathers themselves are more fluent in English, which may in turn make them more comfortable and willing to take care of their child's everyday needs. This is in congruent with the previous research which suggests that language barrier affects immigrant father involvement (Cabrera & Call, 2004).

Interestingly, mothers' English proficiency also significantly and positively predicted care-taking involvement at 2 years for both Latino and Chinese immigrant fathers in the multiple-group analysis even after controlling for the previous level of care-taking involvement at 9 months. Though only marginally significant, this result suggests that spouse's/partner's acculturation may also be a part of the process of acculturation for immigrants, and that their spouse's/partner's acculturation may also affect their involvement. There is evidence that suggests that the process of acculturation is a gendered process in that there are differences in how fathers and mothers experience acculturation and how it affects their involvement with their children (Qin, 2009). However, how the influence of immigrants' spouse's/partner's acculturation may spill over and affect their own involvement with their children has been virtually unknown. Thus, this suggests new directions for future research.

The significant and positive association between fathers' attainment of US citizenship and care-taking involvement at 2 years in the overall model also support the first hypothesis. As discussed in the introduction, acculturation may serve as a protective factor against the negative effect of disadvantages associated with immigration, such as unemployment, underemployment, hassles with having multiple low-paying jobs, loss of social networks, and the like, which may all impair immigrant fathers' ability to be involved with their children. Obtaining US citizenship is likely to have helped immigrant fathers overcome these disadvantages and challenges associated with immigration, and consequently it may have helped them to pay more attention to fulfill their important care-taking responsibilities at home.

The results did not support the second hypothesis since neither depressive symptoms nor parenting stress significantly predicted care-taking involvement at later time. These results are not congruent with the previous research that has generally found that parents' depressive

symptoms and stress are negatively associated with their involvement with their children regardless of whether parents are immigrants or not (e.g., Briggs-Gowan et al., 2001; Brockington, 2004; Hindley et al., 2006; Pawlby, Hay, Sharp, Waters, & Pariante, 2011). The reason why these associations were not significant remain unclear, but there are a few possible reasons that may have contributed to this finding. First, depressive symptoms were virtually nonexistent and parenting stress was weak among Latino and Chinese fathers in the sample according to their own self-reports. This makes it difficult for these two variables to exert significant influences on the other variables. However, this virtual absence of depressive symptoms and parenting stress may not be representing the actual conditions of their mental health. Perhaps, the virtual absence of depressive symptoms and parenting stress may reflect that symptoms of depression and parenting stress may be different for immigrant fathers from different cultural background, and the measures of depression and parenting stress used in ECLS-B may not be effectively capturing immigrant fathers' depressive symptoms and parenting stress.

The results did not support the third hypothesis. Although fathers' English proficiency was negatively and significantly associated with parenting stress at 2 years, parenting stress at 2 years was not significantly associated with care-taking involvement at 4 years as discussed above. It is important to note though that the negative and significant association between fathers' English proficiency and parenting stress at 2 years for both Latino and Chinese immigrant fathers does suggest that some aspects of acculturation may reduce parenting stress for these two groups of immigrant fathers.

Besides the possible reasons discussed above, there is another factor that may contribute to the lack of significant associations between depressive symptoms, parenting stress, and father

involvement in the current study. That is, the majority of the Latino and Chinese immigrant fathers reported not having depressive symptoms and/or not feeling parenting stress at all or having only minimal problems concerning these aspects of their lives. Thus, the variances were very or extremely small for these variables which made it very difficult to find significant associations with any variables especially after controlling for the effect of a number of variables. It has been suggested that depressed men may be less likely than depressed women to report symptoms of depression (Brody & Hall, 2000), and that men tend to “mask” their depressive symptoms by using alcohol and substance, engaging in high-risk behaviors, and being over-involved in work (Cochran & Rabinowitz, 2000). It is possible that Latino and Chinese immigrant fathers in the study also underreported their symptoms of their own depressive symptoms and parenting stress which might have jeopardized the usefulness of these variables. On the other hand, there is also a possibility, though unlikely, that the majority of the Latino and Chinese immigrant fathers in the sample simply were not experiencing considerable depressive symptoms and/or parenting stress.

The results did not support the fourth hypothesis as the models for Latino and Chinese immigrant fathers were not significantly different, and there was no individual path that was significantly different between Latino and Chinese immigrant fathers. The result is slightly different compared to the previous cross-sectional study with the Mexican and Chinese immigrant fathers in ECLS-B (Capps et al., 2010) which found that there are slight differences between Mexican and Chinese fathers in what aspects of acculturation significantly predict their father involvement. The lack of significant differences between Latino and Chinese immigrant fathers in this longitudinal analysis may indicate that, as they acculturate more and spend more time and raise their children in the similar environment in the United States, these groups of

fathers with the two different cultural backgrounds may have become more similar than they used to be in terms of their values, expectations, and actual behaviors pertaining to fatherhood.

Literacy or Language Involvement

The results partially and only weakly support the first hypothesis. Although the negative associations between mother's US citizenship and literacy or language involvement at 2 years approached significance, it was only marginally significant. It is unclear why acculturation does not predict literacy or language involvement in these groups as much as it predicts care-taking involvement. However, it suggests that acculturation influences different types of father involvement in different manners. It is possible that literacy or language involvement is not a type of involvement these cultural groups of fathers typically do in the first place. In fact, the mean comparisons of the original variables suggest that the fathers in the current study are much less involved in literacy or language involvement than in care-taking involvement. This further suggests that immigrant fathers are likely to be engaged in different types of involvement in different degrees. Thus, it is crucial for future studies to include various types of father involvement when examining immigrant father involvement in order to draw a more complete picture of immigrant father involvement.

The results also did not support the second and third hypothesis because depressive symptoms and parenting stress both did not significantly predict literacy or language involvement at later time. Again, these results are not congruent with the previous research that has generally found that parents' depressive symptoms and stress are associated with poorer involvement with their children (e.g., Briggs-Gowan et al., 2001; Brockington, 2004; Hindley et al., 2006; Pawlby, Hay, Sharp, Waters, & Pariante, 2011). As with the case for care-taking involvement, the virtual absence of depressive symptoms and parenting stress in the sample is

likely to contribute to the lack of significant associations between depressive symptoms, parenting stress and literacy or language involvement. It is also possible that depressive symptoms and parenting stress simply are not strong predictors of parenting behavior in these two groups of immigrant fathers. However, the bivariate correlation results show that, originally, depressive symptoms were significantly and negatively correlated with literacy or language involvement at time 1 and 3 (see Table 2). Thus, it is also possible that, after controlling for the effects of all the control variables which include the effects of various disadvantages for immigrants, the effect of depressive symptoms became minimal.

Finally, the results did not support the fourth hypothesis as the models for literacy or language involvement for the Latino and Chinese immigrant fathers were not significantly different, and there was no individual path that was significantly different between Latino and Chinese immigrant fathers. Acculturation simply did not appear to have much longitudinal influence on literacy or language involvement in these groups of fathers, and it makes it difficult to find any differences between the model for the two groups. However, it would still be important for future studies to include this type of father involvement as it is possible that other groups of fathers' experience may be different than the experiences of the two groups of fathers that are examined in the current study.

Limitations

A few limitations of the study should be noted. First, in terms of the measures of acculturation, only the proxy measures of acculturation were available in ECLS-B. It would have been better if more direct measures of acculturation could also be used in the study. In addition, the measures of acculturation were used only at the first wave of the ECLS-B study, and thus, the measures of acculturation were used as time-invariant predictors of father involvement. However,

the degree of acculturation is something that is supposed to change over time as immigrants spend more time in the host society and experience changes in their status, values, expectations, and so on. Therefore, the use of only the proxy measures of acculturation from the first wave is not ideal in investigating the longitudinal influence of acculturation, and it would have been helpful to draw a more accurate picture of how acculturation influences father involvement over time if we could have used more direct measures of acculturation collected in each wave of the study.

Similarly, the measures of depressive symptoms and parenting stress were available only at one of the study waves because they simply were not used in other waves of the ECLS-B study. It would have been ideal if the measures of depressive symptoms and parenting stress were available in all three waves.

Conclusions

Despite these limitations, the current study contributes to the literature on immigrant father involvement particularly by shedding new light on the longitudinal impact of acculturation on different dimensions of immigrant father involvement. In particular, the current study demonstrated that the influence of acculturation on immigrant father involvement may remain significant for some types of father involvement even four years after the birth of their children, and that acculturation may influence different dimensions of father involvement in a different manner longitudinally. This is noteworthy considering the fact that the acculturation really is a time-variant phenomenon that changes over time as explained above. Although the associations between acculturation and father involvement appeared weaker than expected in this study, this weaker associations may be partly due to the fact that these variables were measured four years apart. Cole and Maxwell (2003) suggested that, if the assessment interval is longer than optimal,

the calculation of the effect will misrepresent the true effect. This might be applicable to the current study in that the effect of acculturation might have largely vanished after four years. Because the level of acculturation generally tends to increase as immigrants spend more time in the host society, the association between acculturation at the second wave may have stronger influence on father involvement at the third wave had the acculturation data been collected at the second wave in the ECLS-B study. Considering these possibilities, finding significant associations after four years was noteworthy even though the associations were not strong.

In addition, the current study was able to use multiple measures of acculturation and father involvement which made it possible to reveal that different dimensions of acculturation may have different degrees of influence on different dimensions of immigrant father involvement. For example, it is possible to find that other types of acculturation have stronger associations with care-taking and/or literacy and language involvement. Similarly, it is also possible to find that language proficiency has a stronger association with other dimensions of father involvement. Therefore, it is important to examine the impact of other types of acculturation on various dimensions of father involvement in future studies. In addition, although there was not significant differences between Latino and Chinese immigrant fathers in the present study, it does not mean that immigrant father involvement and its predictors are universal. There are many different groups of immigrant fathers in the United States, and it is important to examine the other groups of immigrant fathers in future studies as previous studies have reported that acculturation is associated with distinct dimensions of father involvement and different types of parenting beliefs for different ethnic groups (e.g., Capps et al., 2010; Jain & Belsky, 1997; Tajima & Hirachi, 2010).

Finally, the fact that the current study found a few significant associations between acculturation and father involvement while finding no significant differences between Latino and Chinese fathers may be suggesting that how immigrants are acculturating in the host society is more influential than where their cultures of origin are in determining how they may be involved with their children. This is not surprising considering the fact that immigrant fathers are more likely to be able to overcome the various barriers and stressors they face in the host society by learning the language and acquiring citizenship (e.g., Bratsberg et al., 2002; Cox, 2004; Lueck & Wilson, 2011; Yang, 1994; Yu et al., 2003) regardless of their cultural background. The fact that both language proficiency and US citizenship were negatively associated with parenting stress may indicate that acculturation has actually helped them overcome some of the stressors, and consequently, it has led to a decreased level of parenting stress. Even though the current study provides these new understandings on the longitudinal impact of acculturation on immigrant father involvement, this area of the study is still largely unexplored. Additional research using the other groups of immigrant fathers is worth investigating in future research. It is recommended for future research to use both direct and proxy measures of acculturation in all waves of study in order to draw a more accurate picture of the longitudinal influence of acculturation on immigrant father involvement.

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Table 1

Descriptive Statistics for the Variables Used in the Analyses, ECLS-B 9-month, 2 year, and 4 year Resident Father Surveys (weighted)

	Foreign-born Latinos (<i>N</i> = 300)	Foreign-born Chinese (<i>N</i> = 200)	<i>F</i> / χ^2
	<i>M</i> (<i>SD</i>) / %	<i>M</i> (<i>SD</i>) / %	
Father Involvement (<i>M</i>)			
Care-taking T1, fs	0.00 (0.94)	-0.10 (0.85)	1.07
Care-taking T2, fs, residualized	-0.00 (0.69)	0.03 (0.92)	0.08
Care-taking T3, fs, residualized	0.01 (0.82)	-0.17 (0.93)	3.49 [†]
Literacy or Language T1, fs	0.00 (0.58)	-0.04 (0.66)	0.42
Literacy or Language T2, fs, residualized	-0.01 (0.44)	0.24 (0.61)	17.61***
Literacy or Language T3, fs, residualized	-0.00 (0.39)	0.04 (0.45)	0.97
Acculturation			
Father's primary language T1 (%)			16.31***
<i>Other language</i>	85.75	84.59	
<i>Both English and other language</i>	12.64	0.00	
<i>English</i>	1.61	15.41	
Mother's primary language T1 (%)			0.71
<i>Other language</i>	83.66	89.99	
<i>English</i>	16.34	10.01	
Father's English proficiency T1 (<i>M</i>), fs	-0.04	0.76	82.25***
Mother's English proficiency T1 (<i>M</i>), fs	-0.03	0.59	31.76***
Father's US citizenship T1 (%)			29.02***
<i>Non-US citizen</i>	80.21	53.3	
<i>US citizen</i>	19.79	46.7	
Mother's US citizenship T1 (%)			0.98
<i>Non-US citizen</i>	72.24	67.17	
<i>US citizen</i>	27.76	32.83	
Depressive symptoms T1 (<i>M</i>), fs	-0.00 (0.32)	0.03 (0.28)	0.69
Parenting Stress T2 (<i>M</i>), fs, residualized	-0.01 (0.26)	0.15 (0.25)	26.21***
Fathers' Characteristics			
Age T1, divided by IQR (<i>M</i>)	3.46 (0.68)	4.08 (0.56)	122.82***
Education level T1 (%)			69.88***
<i>Less than high school</i>	62.48	5.014	
<i>High school or equivalent</i>	14.77	5.98	
<i>Greater than high school</i>	22.75	89.01	

Employment status T1 (%)			3.25 [†]
<i>Employed</i>	82.72	90.39	
Working hours per week T1, divided by IQR (<i>M</i>)	3.67 (1.86)	4.12 (1.74)	3.89 [†]
Number of children T1 (<i>M</i>)	2.30 (1.31)	1.67 (0.71)	24.67***
Marital status T1 (%)			24.94***
<i>Married to child's mother</i>	72.47	100.00	24.94***
Poverty status T1 (%)			29.74***
<i>Below 100% of poverty line</i>	39.57	8.07	29.74***
SES T1 (<i>M</i>)	-0.66 (0.59)	0.97 (0.82)	257.85***
General health T1 (<i>M</i>)	3.56 (0.97)	3.79 (0.76)	6.08*
Antisocial behavior T1 (<i>M</i>)	0.28 (0.67)	0.08 (0.46)	21.68***
Length of US residency T1, divided by IQR (<i>M</i>)	1.11 (0.69)	1.12 (0.77)	0.01
Age when moved to US, divided by IQR (<i>M</i>)	1.89 (0.69)	2.45 (0.78)	44.49***
Child Characteristics			
Child's gender (%)			2.77 [†]
<i>Male</i>	54.17	46.47	
Child's age (month) T1, divided by IQR (<i>M</i>)	5.70 (1.08)	5.83 (1.02)	1.47
Child's disability T1 (%)			0.03
<i>Child has a disability</i>	1.71	2.04	
Quality of father-mother relationships (<i>M</i>)			
Relationship satisfaction T1	2.65 (0.53)	2.72 (0.47)	1.59
Relationship conflict T1, fs	-0.00 (0.49)	0.10 (0.41)	6.74*
Family of origin characteristics (<i>M</i>)			
Years living with father until age 16, divided by 16	0.80 (0.37)	0.92 (0.24)	19.57***
Years living with mother until age 16, divided by 16	0.92 (0.25)	0.93 (0.23)	0.71
Closeness to father	2.59 (1.08)	2.74 (0.99)	2.26
Closeness to mother	2.96 (0.89)	3.08 (0.85)	2.23
Frequency of social contact T1 (<i>M</i>)	2.08 (1.05)	1.80 (0.86)	10.72**
Regular child care T1 (%)			17.09***
<i>Child has regular child care</i>	25.83	48.01	

Note. [†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

T1 = 9 month; T2 = 2 years; T3 = 4 years; fs = factor score.

Table 2

Summary of Correlations, Means, and Standard Deviations for the Variables Used in the Analyses (weighted)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
01																																	
02	0.45*																																
03	0.36*	0.42*																															
04	0.18*	0.09	0.05																														
05	0.09	0.27*	0.13*	0.31*																													
06	0.15*	0.25*	0.31*	0.24*	0.40*																												
07	0.00	-0.09	-0.03	0.00	0.00	0.04																											
08	0.07	0.00	0.05	0.00	-0.02	0.07	0.36*																										
09	-0.01	-0.12*	-0.04	0.02	0.12*	0.09	0.37*	0.20*																									
10	0.09	0.04	0.05	0.01	0.06	0.02	0.22*	0.48*	0.46*																								
11	-0.03	-0.04	-0.01	0.04	0.07	0.10	0.36*	0.20*	0.36*	0.20*																							
12	0.13*	0.04	0.09	0.04	0.00	0.06	0.23*	0.32*	0.19*	0.46*	0.39*																						
13	-0.09	-0.02	-0.10	-0.15*	-0.05	-0.12*	-0.05	0.03	-0.07	-0.04	-0.01	0.00																					
14	0.02	0.00	0.00	-0.04	-0.01	-0.06	-0.17*	-0.13*	-0.15*	-0.09	-0.06	-0.10	0.07																				
15	0.00	-0.07	-0.03	-0.07	0.12*	0.02	0.13*	0.05	0.66*	0.49*	0.15*	0.15*	-0.04	0.06																			
16	-0.06	-0.10*	-0.09	0.03	-0.09	-0.03	0.01	0.02	0.04	-0.01	0.01	-0.09	-0.20*	-0.09	-0.02																		
17	-0.04	-0.02	-0.06	-0.01	0.00	-0.03	0.00	0.00	0.01	0.06	0.00	0.00	0.21*	0.13*	0.04	-0.26*																	
18	0.02	0.06	0.03	0.06	0.12*	0.06	0.01	-0.08	-0.09	-0.07	-0.14*	-0.05	-0.05	-0.09	-0.12*	0.04	-0.01																
19	-0.03	-0.14*	-0.04	0.01	0.09	0.07	0.12*	-0.11*	0.29*	0.01	0.31*	0.05	-0.02	0.11*	0.32*	-0.02	0.07	-0.18*															
20	-0.10	-0.13*	-0.09	0.04	0.02	-0.02	0.07	0.08	0.18*	0.16*	0.17*	0.10*	-0.01	-0.05	0.12*	-0.05	0.03	-0.14*	0.10														
21	0.09	0.03	0.01	0.15*	0.11*	0.10	0.04	0.10	0.23*	0.25*	0.06	0.05	-0.28*	-0.01	0.20*	0.20*	-0.14*	0.06	0.15*	0.09													
22	-0.01	0.04	-0.05	-0.07	-0.07	-0.04	0.03	0.09	-0.08	-0.03	-0.10*	-0.08	0.14	-0.07	-0.15*	-0.06	0.07	0.07	-0.18*	0.04	-0.04												
23	-0.10*	-0.11*	-0.05	-0.02	-0.02	0.04	0.48*	0.24*	0.28	0.10	0.58*	0.30*	-0.03	-0.09	-0.03	-0.01	0.06	-0.08	0.41*	0.07	0.02	-0.01											
24	0.08	0.00	0.02	0.03	0.09	0.01	-0.40*	-0.32*	-0.06	-0.10	-0.35*	-0.27*	0.02	0.18*	0.28*	0.00	-0.01	-0.06	0.36*	0.00	0.09	-0.13*	-0.70*										
25	-0.07	-0.06	-0.15*	0.05	-0.02	0.02	0.09	0.02	0.06	0.05	0.06	0.04	-0.09	-0.05	0.00	0.16*	-0.08	0.00	0.00	-0.01	0.05	0.00	0.09	-0.09									
26	0.01	0.04	-0.02	0.01	0.00	-0.04	-0.04	-0.03	-0.05	-0.09	-0.06	0.01	0.00	0.00	-0.05	0.08	-0.02	0.07	-0.08	-0.06	0.06	0.01	-0.09	0.03	-0.07								
27	-0.07	-0.02	-0.02	-0.05	-0.01	0.10*	0.02	0.03	-0.01	-0.07	0.07	-0.05	0.04	-0.06	-0.05	0.06	-0.04	0.01	-0.03	-0.04	-0.09	0.03	-0.02	0.00	-0.08	0.08							
28	-0.04	-0.02	-0.02	0.06	0.09	0.12*	-0.02	-0.05	0.05	0.03	-0.07	0.06	-0.02	-0.02	0.14*	0.00	-0.02	0.09	0.11*	0.03	-0.01	-0.07	-0.06	0.15*	0.00	0.09	0.07*						
29	-0.01	0.00	0.01	-0.01	0.01	0.13*	0.07*	0.14*	0.02	0.07	-0.01	0.05	-0.03	-0.04	0.06	0.03	-0.07	0.02	0.01	0.06	0.02	0.03	-0.01	0.02	0.01	0.06	0.05*	0.47*					
30	-0.01	-0.02	0.01	0.05	0.05	0.13*	-0.10	-0.09	0.00	0.01	-0.04	0.04	0.03	-0.04	0.03	0.16*	-0.08	-0.01	0.05	-0.01	0.01	-0.01	-0.09	0.13*	0.01	0.09	0.11*	0.41*	0.12				
31	-0.03	0.01	0.00	-0.01	-0.02	0.12	-0.05	-0.06	0.02	0.05	-0.08	0.00	-0.03	-0.04	0.04	0.10	-0.08	-0.04	-0.02	0.00	0.10	0.01	-0.08	0.07	-0.01	0.08	0.05	0.08	0.25*	0.46*			
32	0.17*	0.07	0.11*	-0.02	0.10	0.07	0.04	0.13*	0.17*	0.30*	0.06	0.25*	0.09	0.03	0.30*	-0.14*	0.05	-0.10*	0.01	-0.01	0.08	0.00	-0.01	0.02	0.03	0.02	0.03	0.01	0.03	0.02	-0.01		
M	0.00	0.00	-0.00	-0.00	-0.00	-0.00	1.17	1.16	-0.00	-0.00	1.21	1.28	0.00	-0.00	-0.57	2.66	0.00	2.07	3.49	3.69	3.57	0.27	1.11	1.92	1.46	5.70	0.02	0.92	0.81	2.96	2.60	1.27	
SD	0.94	0.81	0.89	0.58	0.49	0.42	0.43	0.37	0.80	1.17	0.41	0.45	0.31	0.28	0.69	0.52	0.48	1.04	0.69	1.85	0.96	0.66	0.69	0.70	0.50	1.08	0.13	0.25	0.37	0.89	1.08	0.44	

Note. 01 = Care-taking T1, 02 = Care-taking T2, 03 = Care-taking T3, 04 = Literacy or Language T1, 05 = Literacy or Language T2, 06 = Literacy or Language T3, 07 = Father’s primary language, 08 = Mother’s primary language, 09 = Father’s English proficiency, 10 = Mother’s English proficiency, 11 = Father’s US citizenship, 12 = Mother’s US citizenship, 13 = Depressive symptoms, 14 = Parenting Stress, 15 = SES, 16 = Relationship satisfaction, 17 = Relationship conflict, 18 = Frequency of social contact, 19 = Fathers’ age, 20 = Working hours per week, 21 = General health, 22 = Antisocial behavior, 23 = Length of US residency, 24 = Age when moved to US, 25 = Child’s gender, 26 = Child’s age (month), 27 = Child’s disability, 28 = Years living with father until age 16, 29 = Years living with mother until age 16, 30 = Closeness to father, 31 = Closeness to mother, 32 = Regular child care

* $p < .05$

Table 3 Parameter Estimates for Structural Equation Model Predicting Care-Taking Involvement for Latino and Chinese Fathers

Parameter Estimates	Unstandardized Overall (S.E.)	Standardized Overall	Standardized Latino (N = 300)	Standardized Chinese (N = 200)
Care-taking T1 → Care-taking T2	0.38 (0.05)***	0.44***	0.43***	0.36***
Mental Health Problem T1 → Care-taking T2	-0.13 (0.22)	-0.05	-0.03	-0.03
Primary language (F) → Care-taking T2	0.01 (0.11)	0.01	0.05	0.05
Primary language (M) → Care-taking T2	-0.09 (0.15)	-0.04	-0.05	-0.05
English proficiency (F) → Care-taking T2	-0.15 (0.07)*	-0.15*	-0.08	-0.06
English proficiency (M) → Care-taking T2	0.07 (0.05)	0.10	0.13 [†]	0.09 [†]
US citizenship (F) → Care-taking T2	0.25 (0.12)*	0.13*	0.01	0.01
US citizenship (M) → Care-taking T2	0.06 (0.14)	0.03	0.02	0.02
Mental health problem T1 → Parenting stress T2	-0.07 (0.07)	-0.08	-0.03	-0.02
Primary language (F) → Parenting stress T2	-0.01 (0.04)	-0.02	0.00	0.00
Primary language (M) → Parenting stress T2	-0.07 (0.06)	-0.10	-0.10	-0.10
English proficiency (F) → Parenting stress T2	-0.05 (0.03) [†]	-0.15 [†]	-0.18*	-0.15*
English proficiency (M) → Parenting stress T2	0.02 (0.02)	0.07	0.05	0.04
US citizenship (F) → Parenting stress T2	-0.04 (0.06)	-0.06	-0.07	-0.07
US citizenship (M) → Parenting stress T2	-0.04 (0.05)	-0.07	-0.09	-0.09
Care-taking T2 → Care-taking T3	0.41 (0.07)***	0.40***	0.38***	0.36***
Parenting stress T2 → Care-taking T3	-0.00 (0.20)	0.00	-0.01	-0.01
Primary language (F) → Care-taking T3	-0.03 (0.09)	-0.01	-0.02	-0.02
Primary language (M) → Care-taking T3	0.10 (0.19)	0.04	0.05	0.05
English proficiency (F) → Care-taking T3	0.15 (0.09) [†]	0.15	0.10	0.08
English proficiency (M) → Care-taking T3	-0.06 (0.07)	-0.09	-0.09	-0.06
US citizenship (F) → Care-taking T3	-0.14 (0.14)	-0.07	-0.07	-0.07
US citizenship (M) → Care-taking T3	-0.05 (0.13)	-0.03	-0.02	-0.02

Note. [†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

T1 = 9 month; T2 = 2 years; T3 = 4 years.

Table 4 Parameter Estimates for Structural Equation Model Predicting Literacy or Language Involvement for Latino and Chinese Fathers

Parameter Estimates	Unstandardized Overall (S.E.)	Standardized Overall	Standardized Latino (N = 300)	Standardized Chinese (N = 200)
Literacy T1 → Literacy T2	0.24 (0.04)***	0.31***	0.30***	0.25***
Mental Health Problem T1 → Literacy T2	0.08 (0.10)	0.05	0.02	0.02
Primary language (F) → Literacy T2	0.05 (0.06)	0.05	0.01	0.01
Primary language (M) → Literacy T2	-0.03 (0.09)	-0.03	-0.04	-0.04
English proficiency (F) → Literacy T2	0.02 (0.03)	0.02	0.08	0.05
English proficiency (M) → Literacy T2	-0.02 (0.04)	-0.04	0.01	0.00
US citizenship (F) → Literacy T2	0.08 (0.07)	0.07	-0.01	-0.01
US citizenship (M) → Literacy T2	-0.08 (0.05)	-0.08	-0.10 [†]	-0.10 [†]
Mental health problem T1 → Parenting stress T2	-0.06 (0.07)	-0.08	-0.02	-0.02
Primary language (F) → Parenting stress T2	-0.01 (0.04)	-0.02	0.00	-0.00
Primary language (M) → Parenting stress T2	-0.07 (0.06)	-0.10	-0.10	-0.10
English proficiency (F) → Parenting stress T2	-0.05 (0.03) [†]	-0.15 [†]	-0.17*	-0.15*
English proficiency (M) → Parenting stress T2	0.02 (0.02)	0.07	0.05	0.04
US citizenship (F) → Parenting stress T2	-0.04 (0.06)	-0.06	-0.07	-0.07
US citizenship (M) → Parenting stress T2	-0.04 (0.05)	-0.07	-0.09	-0.09
Literacy T2 → Literacy T3	0.29 (0.06)***	0.33***	0.32***	0.38***
Parenting stress T2 → Literacy T3	0.07 (0.11)	0.04	0.05	0.04
Primary language (F) → Literacy T3	0.06 (0.08)	0.07	0.05	0.07
Primary language (M) → Literacy T3	0.01 (0.09)	0.01	-0.02	-0.02
English proficiency (F) → Literacy T3	0.01 (0.04)	0.03	0.07	0.05
English proficiency (M) → Literacy T3	-0.03 (0.03)	-0.10	-0.09	-0.06
US citizenship (F) → Literacy T3	0.03 (0.07)	0.03	0.03	0.03
US citizenship (M) → Literacy T3	-0.04 (0.06)	-0.04	-0.02	-0.02

Note. [†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

T1 = 9 month; T2 = 2 years; T3 = 4 years.

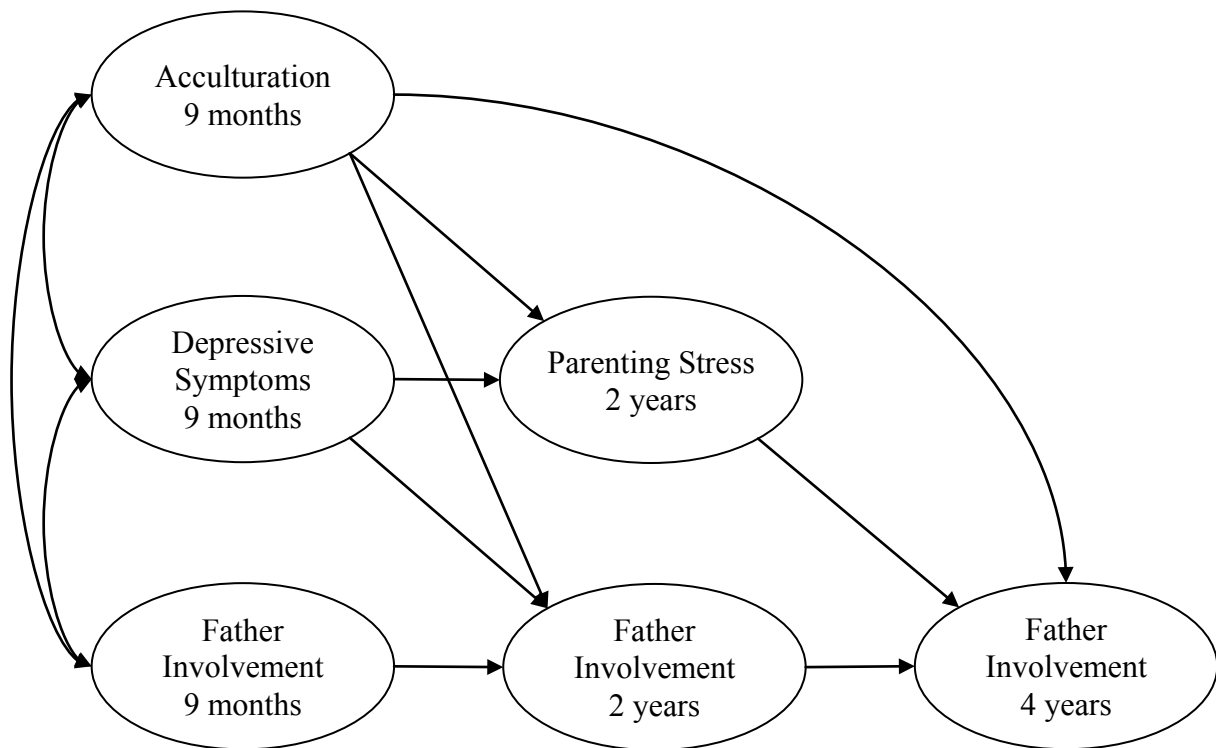


Figure 1. Conceptual model of the longitudinal impact of acculturation and mental health on immigrant father involvement.