THE INFLUENCE OF CULTURAL ADAPTATION ON DEPRESSIVE SYMPTOMS

AMONG YOUNG HISPANIC IMMIGRANTS

by

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ABSTRACT

This study examines how cultural adaptation and family cohesion impact depressive symptoms in Hispanic immigrants that migrated to the U.S. by the age of 17. Using the National Latino and Asian American Study, a recursive regression was conducted on a hypothesized model demonstrating the relationship among the study variables: acculturation, acculturative stress, subjective social status, discrimination, ethnic social identity, dissonant acculturation, family cohesion and depressive symptoms. Psychosocial contextual variables are also included in the analysis and include gender, age, years in the U.S., education, income, and ethnicity. Results revealed two important themes in the data. The first is the importance of family in the adaptation process. As hypothesized, dissonant acculturation leads to the development of depressive symptoms. Additional findings concluded that family cohesion moderated the effect of dissonant acculturation. The second theme revealed in the data was the risk posed by acculturative stress in the adaptation process. Acculturative stress contributes directly to dissonant acculturation and to depressive symptoms.

LIST OF ABBREVIATIONS & SYMBOLS

NLAAS   National Latino & Asian American Study

CPES   Collaborative Psychiatry Epidemiology Study

NIMH   National Institutes of Mental Health

IRB   Institutional Review Board

MSA   Metropolitan Statistical Area

CIDI   Composite International Diagnostic Interview

ICD   International Classification of Disease

DSM   Diagnostic & Statistical Manual of Mental Disorders

SCID   Structured Clinical Interview for DSM Disorders

MDE   Major Depressive Episode

PASW   Predictive Analytics SoftWare

Sig.   Significant/significance

r   Pearson's r (correlational value)

p   probability associated with the occurrence of the null hypothesis

r^2 variance explained

β   standardized regression coefficient

N   number

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Chapter 1 – Research Problem

Background

Recent reports by the Pew Hispanic Center and by the U.S. Census Bureau reveal the increasing relevance of young Hispanic families to the United States mainstream (Ennis, Rios-Vargas, & Albert, 2011; Pew Hispanic Center, 2009). The experiences of young immigrants, those entering the U.S. before their eighteenth birthday, shape the paths of the later generations, which compose an enormous piece of the U.S. population. Furthermore, the second-generation immigrants have, for the first time, become the predominant figure in accounting for Hispanic population growth in the U.S., outpacing migration into the U.S. These second-generation immigrants, born to at least one immigrant parent (Jensen, 1990 as cited in Portes & Zhou, 1993), will be U.S. citizens, but will have their identity, their values and beliefs, and their reality shaped by one or more immigrant parents. The shifting demographic landscape in the U.S. will be driven by the experiences of young immigrants as they begin to integrate into U.S. society; the experiences of young immigrants after settling will inevitably mold the path of future generations of U.S.-born Hispanics. Together, increased Latino births inside the U.S. and emigration across the U.S.-Mexico border have contributed to a booming Hispanic minority population.

The 2010 U.S. Census reports a 43% increase in the Hispanic population between 2000 and 2010; accounting for more than half of the growth in the U.S. population during this time period (Ennis, Rios-Vargas, & Albert, 2011). Among this group are immigrant children, with estimates indicating that approximately one in ten of all Hispanic children in the U.S. are

themselves immigrants (Fry & Passel, 2009). Furthermore, while some change is projected among second and third-generation children as a percentage of the population, the percentage of immigrant children is expected to remain relatively stable through 2025 (Ennis, Rios-Vargas, & Albert, 2011). The Pew Hispanic Center (2009) examined young immigrant Latinos between the ages of 16 and 25 and found that these young immigrants were more likely than any other ethnic group in the U.S. to live in poverty, experience pregnancy before their twenties, and have no high school education. They were also less likely to go to college or be unable to speak English. However, the study also highlighted some important factors about the long-term integration of Latinos. The second and latter generations were far less likely to become young parents, or drop out of high school. Ethnic identity, the way in which individuals classify themselves based upon a shared heritage, is also important. Ethnic identity scales indicated that as families integrate, the later generations were more likely to identify with a majority identity.

Widening income gaps on a global scale has driven unemployment rates up and wages down in the most disparate regions of the world fueling increased migration to the most prosperous countries like the United States (Hatton & Williamson, 2011). As a result, immigrant groups migrating to the United States are more likely to arrive from Mexico, the Caribbean, or Asia (Massey, 1995). Of particular concern to the native-born has been the illegal emigration of Mexicans across a shared border with the United States. Like European immigrants in the past, Mexican immigrants have been leaving their homes in search of economic prosperity in the United States (Durand, Massey, & Zeneto, 2001). The financial burden of legal immigration to the United States combined with the wealth of opportunities across an often poorly guarded border has dramatically increased the number of individuals undertaking illegal immigration into the United States (Hanson & Spilimbergo, 1999). Similar to native sentiments of the nineteenth

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century, modern political figures use this movement of poor migrants as scapegoats for white unemployment (Alvarez & Butterfield, 2000), and as a means to institute restrictive border policies (Cornelius, 2001). While economic opportunity pulls immigrants across the border for a chance at greater financial and personal security, they are often blamed for a variety of social problems and as a result must endure negative, stereotyped beliefs about their culture.

Like earlier immigrants to the U.S., those from Mexico, the Caribbean, and Asia have been exposed to various forms of discrimination and racism. Unlike earlier immigrants, their ability to assimilate into mainstream, middle class society has been called into question (Portes & Zhou, 1993). The greater degree of ethnic and cultural difference between white natives and non-European immigrants has led some to believe that typical assimilation patterns are not always possible and that co-ethnic communities provide the greatest source of support for the current wave of immigrants (Portes & Rumbaut, 2001). Traditional ideas about assimilation were derived from European immigrants assimilating into white, middle-class America during the nineteenth and early twentieth century. Current immigrants to America are ethnically and culturally different from earlier European immigrants leading to questions about the likelihood of their assimilation into white, middle-class America.

Immigrants face employment discrimination (De Jong & Madamba, 2002; Waters & Eschbach, 1995) and increased scrutiny by law enforcement (Waters & Kasinitz, 2010). These issues have led scholars to challenge traditional theories of adaptation, suggesting new immigrants cannot simply assimilate into mainstream, middle-class America. The racial and ethnic disparities between the middle class and new immigrants have led theorists to describe downward assimilation; a phenomenon that occurs when society rejects the adapting group resulting in a permanent underclass (Portes & Zhou, 1993). Many studies underscore this

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theoretical proposition including the aforementioned Pew study (2009), and Portes, Fernandez-Kelly, & Haller's, (2009) examination of poverty in early adult immigrants. Others have suggested modern working-class immigrants are more comparable to Polish and Italian immigrants of the late nineteenth and early twentieth century (Perlmann & Waldinger, 1997). While working-class immigrants will likely take longer to adapt due to cultural differences with majority natives than do immigrants of other socio-economic classes, labeling them as a permanent underclass is an overstating the severity of the concern about future of immigrants (Waldinger & Feliciano, 2004). The Polish and Italian immigrants came to a predominantly English-speaking, Protestant, and Anglo America. The Poles and Italians brought new languages, ethnicities, and religions to a heavily homogenized America. Despite these obstacles, they were eventually able to assimilate.

The increased pressure placed on restricting emigration from Mexico and other countries of Hispanic ancestry, native attitudes and perceptions about Hispanic immigrants, and the increased difficulty with assimilation pose unique challenges to Hispanic immigrants and their family members. These challenges exacerbate the existing difficulties faced by young immigrants in the midst of the transformation from child to adult. Furthermore, immigration is psychologically taxing and contributes to the development of behavioral adjustment problems, as well as mental illness in young immigrants (Aronowitz, 1984; Bagley, 1972; Portes & Rumbaut, 200; Williams & Berry, 1991). As young immigrants are developing into adults, they must contend with a psychologically difficult transition into a hostile environment with new customs and practices.

The challenges for young immigrants.

The relationship between mental illness and the immigration process is a complex not well understood process. Depression and anxiety have been thoroughly studied and the results provide a detailed picture of the risks associated with developing one of these conditions. However, adaptation is an individualized process (Berry, 1992) and stress-coping as an individual response varies (Thoits, 1995). Since undesirable stress has been linked with mental distress and mental illness (Rahe, 1968; Vinokur & Selzer, 1975), the research on the negative effects of adaptation has flourished. While early theorists postulated that there were positive acculturation strategies and negative acculturation strategies, only recently has empirical evidence been brought to bear on the validity of a stress-process model of acculturation and its influence on the mental health of immigrants.

The risk of an immigrant developing mental illness varies depending on multiple factors. Studies have demonstrated that low socioeconomic status, linguistic barriers (Morales et al., 2002), limited social networks (Finch & Vega, 2003), discrimination and acculturation (Hovey & Magana, 2002) and gender (Portes & Rumbaut, 2001) are all risk factors for depression and anxiety among Hispanic immigrants. Sociocultural characteristics that are specific to an immigrant population may also contribute to the development of mental illness (Berry et al., 1987; Yearwood et al., 2007). Acculturative stress was also found to be predictive of depression and anxiety in Hispanic immigrants to America (Revollo et al., 2011). More completely, risk is attributable to "factors relating to the society of origin, factors relating to the migration itself, and factors operating in the society of resettlement" (Murphy, 1977, p.678). Immigrants must contend with differences in expectations, beliefs, attitudes, and values between their society of origin, and the host society. These differences may often manifest themselves as discrimination

(Portes & Rumbaut, 2006), stress, and the transformation of one's identity (Berry et al., 2006; Oppedal, Roysamb, & Heyerdahl, 2005).

Voluntary migrants have been shown to have much lower levels of psychological symptoms than forced migrants who are exposed to greater levels of trauma (Escobar, Hoyos-Nervi, & Gara, 2000). While the term 'voluntary migrant' may often be used interchangeably with the term 'immigrant' it is sometimes difficult to remember that migrating children have little or no input into the decision to leave their home country. While studies have indicated that children often adapt much easier and much more quickly than do their parents, the initial shock of moving may be difficult to overcome. Furthermore, children who must adapt to a new environment punctuated by a stressful family life where parents are also having difficulty in adapting can contribute to an overwhelming stress response (Guarnaccia & Lopez, 1998), thus providing additional risk not generally seen in adult immigrants. In addition, studies have demonstrated the importance of age at immigration on the effects of educational attainment (Cahan, Davis, & Staub, 2001; van Ours & Veenman, 2006), earnings (Shaafsma & Sweetman, 2001), language proficiency (Stevens, 1999), and risk of mood disorder (Breslau et al., 2009). While some variation exists across gender and country of origin, findings indicate that younger immigrants have an increased protective factor as compared to older immigrant children. A life-course perspective suggests this difference exists due to the younger children's decreased exposure to the norms and values of the native society and the increased ability to flourish in the host society.

While much of the literature paints a poor picture for immigrants coming into the U.S. at a young age, this is not always the case. Immigrant Latinos with strong family ties have been shown to experience fewer problems with behavioral adjustment, engage in less risk-taking

behavior, and have higher self-efficacy than other young Latinos (Leidy, Guerra, & Torro, 2010; Marsiglia et al., 2009). The presence of cohesive family ties represents an in-tact social network that may be the only social support system for many immigrants in the host society. This system serves to support and develop young immigrants as they mature, and to combat negative stressors like discrimination (Thomas, 1995; Zhou, 1997).

Purpose of the Study

The purpose of this study is to address concerns of cultural adaptation and mental illness among Hispanic immigrants, with special attention given to those immigrating at a young age. The goals of this study are to: (1) increase the knowledge about the combined effect of acculturative phenomena and ethnic social identity on the mental health of Hispanic immigrants who migrated at a young age; (2) test a model of combined acculturative phenomena (see Figure 1) in order to examine the effects of cultural adaptation on depressive symptoms among Hispanic immigrants who migrated at a young age and; (3) examine the effect of family cohesion and psychosocial context variables on the combined effect of acculturative phenomena and ethnic social identity on depressive symptoms among Hispanic immigrants who migrated at a young age.

Figure 1. Inclusive Model

Psychosocial Context

Family Cohesion
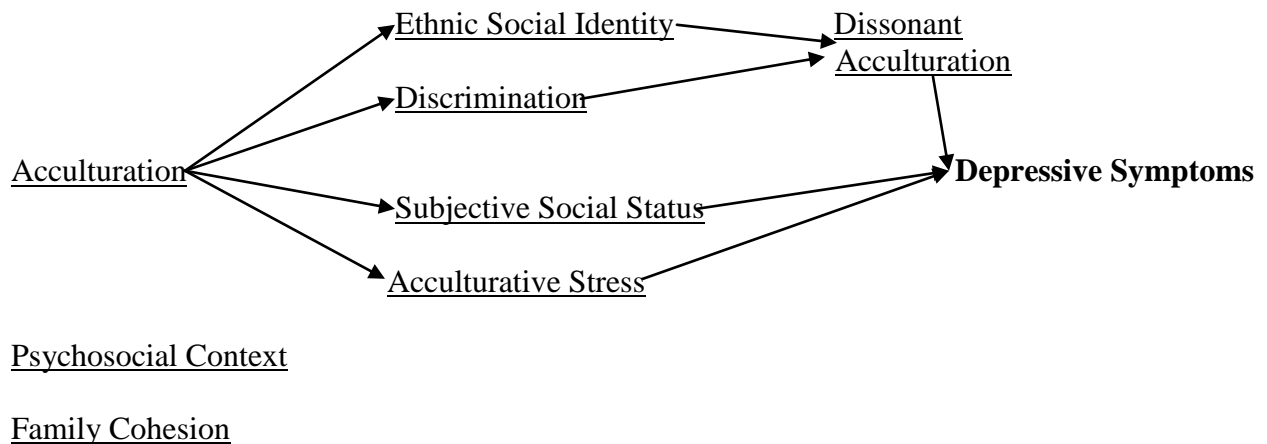
Study Aims

The primary aims of this study are to describe the effect on depressive symptoms among Hispanic immigrants who migrated at a young age that are associated with acculturative phenomena and ethnic social identity; to examine the effect of family cohesion on differences in depressive symptoms, acculturative phenomena, and ethnic social identity among Hispanic immigrants who migrated at a young age; and to what extent the proposed model has utility as a research construct. The aims will be addressed through a secondary analysis of the National Latino and Asian American Study (NLAAS). The NLAAS is particularly well-suited to use for this study, as it is really the only large, nationally representative data set on Hispanic immigrants that contains data on psychosocial and environmental factors in its study of psychiatric symptoms.

Significance of Study to Research Area

This study contributes to the substantive knowledge on immigrant's cultural adaptation in two ways. First, much of the scholarly research on cultural adaptation among immigrant groups has focused on the process of acculturation, while largely ignoring the consequential effects of acculturation. This study examines both acculturation and its effects as it impacts the mental health of Hispanic immigrants who migrated by age 18. Secondly, research on immigrants has emphasized the acculturation of immigrants broadly, while paying little attention to specific developmental aspects of immigration in young immigrants. Consequently, little is known about the impact of cultural adaptation, identity development, and discrimination on the human and social developmental processes in young immigrants. This study is based on the idea that young immigrants must adapt culturally to their new environment in order to function well in that environment, and the experience of immigration can influence their developmental trajectories into adulthood. The conceptual model tested (see Figure 1) reflects this conceptualization by

including key psychosocial constructs such as the number of years the immigrant has lived in the U.S., ethnic social identity, and perceived social status.

Significance of Study to Social Work

As the immigrant population in the U.S. continues to increase, the need for qualified social workers capable of working with immigrant families will also rise. The U.S. Census Bureau reported that the last decade's population increase was most heavily contributed to by the Hispanic minority (Ennis, Rios-Vargas, & Albert, 2011). In order for social workers to work effectively with this population they will need to understand the unique and often conflicting cultural dynamics at play inside the immigrant household. Social workers in practice settings will be able to use findings from this study to: (1) improve their knowledge of cultural adaptation and depression among Hispanic immigrants who migrated before age 18; (2) better assess Hispanic immigrants who migrated before age 18; (3) develop culturally appropriate family-based approaches for treatment Hispanic immigrants who migrated before age 18 based upon demographic characteristics and; (4) advocate for the needs of Hispanic immigrants.

Chapter 2 – Literature Review

There is an extensive body of work in the social sciences considering the theory and science of immigrant cultural adaptation. This chapter provides an overview of the science and theory relevant to the current study and it presents a conceptual understanding of the phenomena under investigation. The chapter begins with an examination of the scientific literature relevant to cultural adaptation among Hispanic immigrants. Emphasis is placed on studies that focus on the mental health of those undertaking migration before adulthood. Following this, an overview of the science of culture relevant to acculturation and ethnicity is provided. Within this section the case is made for utilizing a cognitive approach to culture. Next a discussion of the three theoretical approaches proposed for this study is presented along with a section discussing constructs relevant to the proposed study. Acculturation, the acculturation gap distress hypothesis, and social identity theory, are used to explain cultural adaptation among immigrant groups; constructs used include subjective social status, discrimination, and family cohesion. Each theoretical approach and construct is discussed with a specific focus on the cultural adaptation of Hispanic immigrants. Once again, particular attention is given to the mental health aspect of these theories. Following the discussion on each theoretical approach, relevant concepts proposed for use in this study are outlined.

Youthful Migration among Hispanic Immigrants, Cultural Adaptation, & Mental Illness

The mental health of immigrants has been studied in much depth using adaptive theories that hypothesize an important link between acculturation and stress. Since undesirable stress has been linked with mental distress and mental illness (Rahe, 1968; Vinokur & Selzer, 1975), early

theorists postulated that there were positive acculturation strategies and negative acculturation strategies. However, recent empirical evidence been brought to bear on the validity of a stress-process model of acculturation and its influence on the mental health of immigrants.

The development of mental illness as a result of immigration, with specific attention given to depression and anxiety, has been thoroughly studied. The results provide a detailed picture of the risks associated with developing mental illness as a result of immigration and adaptation. Nevertheless, adaptation is an individualized process (Berry, 1992) and stress-coping as an individual response varies (Thoits, 1995). Therefore, the risk of an immigrant developing mental illness varies depending on multiple factors including stress-coping and mediating and moderating events. Studies have demonstrated that poorer immigrants, with few connections and the inability to easily adapt due to linguistic and discriminatory barriers are those most likely to suffer from depression and anxiety (Finch & Vega, 2003; Hovey & Magana, 2002; Morales et al., 2002). Characteristics that are specific to an immigrant population may also contribute to the development of mental illness (Berry et al., 1987; Yearwood et al., 2007). One example is ataque de nervios, a culturally-bound condition usually found in Puerto Rican women. Puerto Rican women found to suffer an event of ataque de nervios are more likely to suffer from anxiety (Guarnaccia et al., 2009).

Acculturative stress has also been found to be predictive of depression and anxiety in Hispanic immigrants to America (Revollo et al., 2011). Folkman et al. (1986) conceptualized stress and coping as a cognitive process that individuals encounter when they experience events they believe to be detrimental to their own interests. Early research on acculturation assumed that acculturation itself and acculturative stress were simultaneous and highly correlated processes. However, later research suggested that the two were separate constructs that operated

independent of one another (Hovey & King, 1996). Initially stressors were conceived as neither positive nor negative (Lazarus & Folkman, 1984). However, acculturative stress came to mean negative cognitive experiences associated with adapting to a new cultural environment (Hovey, 2000a).

Early research revealed that acculturative stress was impacted by community factors (Berry & Annis, 1974) and that acculturative stress levels varied greatly by migrant type, gender, social contact, age, education, and social status (Berry et al., 1987) leading to a call for more research on acculturative stress. The greater the cultural discontinuity in a community, the greater the psychological response would be in the form of acculturative stress in the adapting population. The lack of others with a similar cultural background in the community contributes to the stress caused by adaptation. This finding is essential to understanding acculturation on a large, time-oriented scale. While mid-nineteenth century European immigrants had some difficulty in adapting, they were readily able to acculturate into American, middle-class communities due to a shared cultural background with American natives. Modern immigrants from Mexico and other Latin-origin countries do not share this advantage with earlier European immigrants, potentially increasing current immigrants stress and the related mental illnesses.

Much research has been focused on the psychological adjustment of immigrants as they experience acculturative stress. Family dysfunction and poor expectations for the future have been shown to be significant predictors of acculturative stress and depression in a study of immigrant Latino adolescents. Additively, one-quarter of the same adolescents with critical levels of depression reported suicidal ideation (Hovey & King, 1996). Furthermore, downward assimilation may provide some support to the finding that those with poor expectations have increased stress and depression. Theorists have suggested that the current wave of immigrants is

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less likely to be assimilated into the mainstream and more likely to suffer from discrimination, racism, and poverty.

Other factors such as social identity and discrimination also play a role in acculturative stress. One study indicated that those who ethnically self-identify are more likely to experience acculturative stress than those who use a mainstream identity, indicating mainstream acceptance was necessary to reduce acculturative stress (Sanchez & Fernandez, 1993). These results may indicate a poor perception of one's own in-group or an increase in perceived racism and discrimination when using an ethnic identity. Regardless, the resulting increase in acculturative stress incurred from choosing to use an ethnic-identity demonstrates the unique challenges immigrants must circumvent in order to gain acceptance by mainstream society and reduce their likelihood of mental illness.

Studies predicting acculturative stress levels have demonstrated that it can be mostly explained by lack of resources, family dysfunction, and poor expectations (Hovey 2000b; Miranda & Matheny, 2000). Given the context of immigration these results are not surprising. Hispanic immigrants are among the poorest groups in the United States (Capps et al., 2004; Van Hook, Brown, & Kwenda, 2004). With the advent of English-only education, Hispanic students are among the poorest performers on standardized tests (Ruiz de-Velasco, Fix, & Clewell, 2000) and have one of the highest high school dropout rates in the country (Public Policy Institute of California, 2008). The acculturation gap in many immigrant families creates disharmony among family members as each person seeks to find their own place in the host society.

The children of immigrants tend to acculturate at a faster rate than do their parents (Szapocznik & Truss 1978). The acculturation distance between parent and child often makes parenting tasks more difficult in recent immigrant families. One study suggests that the

acculturation gap relative to national identity and language preference has strong implications for family discord. Those second-generation migrants culturally identifying more often with the host nation who had parents still identifying with their native country were more likely to experience family disharmony (Birman, 2006a). It has been hypothesized (Birman, 2006a; Schofield et al., 2008) that the effects of dissonant acculturation impacts on the family, the immigrant child, and the parent-child relationship. Implicit in this hypothesis is a negative impact upon the actors due to stress, related to differences in acculturation rates. Others have tested the effects of this stress on substance use and misuse. Unger et al. (2007) found that parent-child discrepancies in U.S. orientation (cultural norms/values shaped by U.S.) contributed to recent and lifetime prevalence in adolescent alcohol and marijuana use. Children with U.S. orientations different than their parents were at greater risk of recent and lifetime prevalence of alcohol and marijuana use. Furthermore, middle-school aged Latinos were found to be more likely to use substances in the future when there was dissonant acculturation with the parents but this effect was mediated by low family stress (Martinez, 2006). These findings support the notion that second-generation immigrants must balance the demands of a culture at home and a culture away from home. Furthermore, these findings lend direct support for the idea that dissonant acculturation can be psychologically harmful to second-generation immigrants.

Ethnicity and Culture

Much of the early work on acculturation dealt with contact between the minority group and the majority. This was often taken to mean contact by immigrants with the greater society. In contrast to most early contributors to acculturation research, Spiro (1955) sought to examine ethnic group differences. Spiro was interested in ethnic groups rather than immigrants and he was able to point to how ethnic group status, not immigrant status, shapes acculturation

outcomes. Spiro (1955) suggested that the act of acculturation was inherently harmful for those undertaking the process. Some loss of cultural identity, usually across generations, inevitably took place. However, he also noted that "ethnic groups-and particularly those of European origin-possess cultures which are relatively similar to those of the "host" society (p. 1249)" suggesting that relatively similar cultures will suffer less in the acculturative process.

Since Spiro's (1955) initial suggestion that ethnicity was as important as immigration status in cultural transformation, research on the role of ethnicity in acculturation has increased. Unlike research that focuses on racial disparities, research focusing on ethnicity in acculturation seeks to answer fundamental questions about the role of ethnicity in acculturation, discrimination, and cultural differences that exist between majority and minority groups. While the results are often similar to those found in research on racial disparities, the focus is on culture and cultural difference not structural inequality.

The research indicates that ethnicity has a strong tie with culture and how individuals interact with their environment. One study found that Mexican-American youth ascribed certain racial terms to individuals based in large part to their level of cultural adaptation (Holleran, 2003). While the youths under study did not realize they were engaging in this practice, it was clear that they ascribed the least offensive terms to those most resembling their own level of acculturation. Ethnic similarity is a theme among studies reporting on ethnicity and acculturation. In a sample of Eastern European and Middle Eastern immigrants, researchers found those minority ethnic backgrounds to have worse self-health ratings than those with a majority ethnicity (Wiking, Johansson, & Sundquist, 2004). Ethnicity also has been demonstrated to have a culturally ascribed function. Mexican American adolescents that were less acculturated to the U.S. culture were more likely to hold traditional gender roles, while the

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more acculturated adolescents were more likely to vary in their gender role and identity (Kulis, Marsiglia, & Hurdle, 2003).

While it is unclear if ethnicity is more important than immigration status as Spiro suggested, it cannot be denied that ethnicity has contributed to the discourse on acculturation and cultural adaptation research. Ethnic differences are often representations of the differences of culture itself. However, when culture is not clearly conceptualized, researchers chance confounding ethnicity and culture. A systematic review of health research on Mexican immigrants identified this problem with acculturation. Rather than clearly conceptualizing culture and providing a concise definition of acculturation, researchers have long relied on ethnic stereotyping (Hunt, Schneider, & Comer, 2004). While ethnicity's importance to acculturation research is undeniable, the tendency for acculturation researchers to rely too heavily on ethnicity has had poor implications for research in this area.

Understanding culture.

Culture is a notoriously difficult thing to conceptualize; the ambiguity that accompanies culture has plagued research on culture (Guarnaccia & Rodriguez, 1996). The amorphous nature of culture makes it easy to understand but incredibly difficult to put into terms that can easily be defined for the purposes of conducting research. Researchers, in their effort to avoid cultural holisms, stereotyping, and mass attributions may avoid the subject of culture entirely (Lazarus, 1997). The importance of culture to acculturation is fundamental, yet the most predominant model of acculturation (Berry, 1997) completely ignores the topic of culture (Triandis, 1997).

While there are multiple ways culture can be conceptualized, and entire fields of study devoted to debating such topics, this study will approach culture from a cognitive perspective. Informed by the work of Ward Goodenough (1957), cognitive theorists define culture as a body

of knowledge that is shared among group members. This definition of culture suggests that culture is not a list of tangible objects or an abstract ideal, rather a cognitive construct that is measurable. Furthermore, a cognitive theory of culture assumes knowledge can be shared at differing levels therefore individuals in a group may differ in their understanding of a cultural phenomenon. A cognitive approach to culture allows research to avoid issues with cultural holism; attributing the behaviors of one to the many.

Acculturation

Acculturation is most concisely defined as continuous first hand contact between differing cultures, resulting in changes in the cultural patterns in one or both groups (Redfield, Linton, & Herskovits, 1936). Much of acculturation research has maintained a focus on changes in the immigrant-minority resulting from this contact. As acculturation research has evolved, so too have the definitions of what constitutes acculturation. Gordon's (1964) cultural assimilation theory proposed that acculturation was the first among many processes that an immigrant must undertake in order to adapt. Acculturation was a checklist of tasks including the adoption of language, dress, and customs of the native culture. While Gordon was able to incorporate both assimilation and acculturation into a single model, he has been criticized for a simplistic, stepwise approach (Alba & Nee, 1997; Glazer, 1993). Modern theorists have stated that acculturation is a process of psychological and social adaptation resulting from sustained interaction with a new culture (Berry, 2006; Bourhis et al., 1997). While this conceptualization varies little from that of Redfield and colleagues (1936), all focus primarily on the minority's adaptation to the majority.

Younger immigrants are unique in that their experiences differ dramatically from that of their parents. While the immigrant parent(s) come into the host country with an established

identity and a set of cultural values, young immigrants are challenged with establishing an identity and a set of values and beliefs, while being situated in-between two cultural systems. Successful cultural adaptation requires that the immigrant navigate the cultural system of the host country and that of the native country.

For adult immigrants, acculturation is a process of adapting to the host society's values and beliefs. However, acculturation takes on a slightly different meaning for younger immigrants. While younger immigrants bring a set of cultural beliefs from their native country, these beliefs have not yet solidified into a structured value system (Phinney et al., 2001). Since young immigrants are still learning their values, beliefs, and culture, the transition into a different country is about negotiating the two cultural systems that are constantly imposing themselves on the individual. Research has demonstrated that differing cultural systems can impress contradictory expectations upon second-generation immigrants (Foner, 1997). Therefore continuous firsthand contact is unique among younger immigrants as a process of contact with two cultures in addition to taking on a natural, developmental component. Normally, contact with the parent's culture would not be seen as alien. However, under these circumstances the parent's culture and the society's culture are not strictly identical and as the young immigrant begins integrating into the host culture values from the native country may be seen as contradictory. The adaptive process dictates how much each culture plays a role in their identity and in their own cultural beliefs.

Conceptualizing acculturation.

In staying with a cognitive conceptualization of culture, this study will use a cognitive conceptualization of acculturation. Early theorists in acculturation research introduced the idea of cognition in acculturation research, though it was short-lived. One of the first major works on

acculturation posited that immigrants shared a set of attitudes and beliefs called a schema (Thomas & Znaniecki, 1918). Bartlett's (1932) reconceptualization of the word schema has become synonymous with cognitive psychology, and schema has become something that organizes our knowledge and assumptions about the world, and is used for interpreting and processing information. Schemata are culturally specific ways of organizing knowledge (D'Andrade, 1995) and make-up the foundation of cognitive science.

The definition of culture used in this study specifies culture as a body of knowledge that is shared among group members (Goodenough, 1957). Therefore, in examining cultural adaptation, the fundamental question hinges on the transfer of knowledge or schemata. Rather than focusing on one specific domain of adaptation, this study focuses on the concept of acculturation broadly. Examining language as a cognitive process reveals the culturally specific means in which an individual views the world. The Sapir-Whorf hypothesis states language influences the cognitive processes by which one sees the world (Kay & Kempton, 1984). This hypothesis, also known as the principle of linguistic relativity, suggests that as one acquires a new language they adapt culturally to the values and norms that accompany that language (Sapir, 1929; Whorf, 1956).

Acculturative stress.

Acculturative stress has been conceptualized as the stress experienced by individuals during the acculturation process generally arising from difficulties during intercultural exchange (Berry, 2006; Berry, 1987). Researchers have shown that acculturative stress experienced by Mexican Americans and by Mexican immigrants is linked with difficulties with depression, anxiety, substance use, and social functioning (Finch, Kolody, & Vega, 2000; Hovey, 2000a, 2000b; Hovey & Magńa, 2002). While acculturative stress can span the individual's entire

lifetime varying in prevalence and intensity (Smart & Smart, 1995), few studies have incorporated acculturative stress in models to predict psychological and social functioning (Archuletta, 2010).

Studies have demonstrated that individuals who are less acculturated have higher levels of acculturative stress (Caetano et al., 2007; Miranda & Matheny, 2000). Results indicate that those having recently migrated or those choosing to cling to their native customs are more likely to experience higher levels of acculturative stress. Early studies indicated that immigrant college students experienced higher levels of acculturative stress than immigrant adults with longer stays in the host country (Mena, Padilla, & Maldonado, 1987; Padilla, Alvarez, & Lindholm, 1986). Additionally, Mena and colleagues (1987) found that those who migrated by age twelve displayed lower levels of acculturative stress than those migrating later in life. However, Hovey & King (1996) were able to demonstrate that acculturative stress was linked with severe levels of depression and suicidal ideation among immigrant children of Hispanic origin. This is particularly salient for young immigrants. Research shows that family supports often aid in buffering the negative effect of acculturative stress by allowing individuals to engage with existing cultural resources (Berry, 2003; Finch & Vega, 2003). However, those migrating at an early age must contend with two different cultural systems – that of their native country and that of the host country; the acculturation gap distress hypothesis suggests that the familial culture is not always comforting to the young immigrants. Without the buffering effects of family supports and congruent cultural resources, younger immigrants must deal with the challenges of unimpeded acculturative stress.

Acculturation Gap Distress Model

Szapocznik and Truss (1978) first recognized that the children tend to acculturate at a faster rate than do their parents. This phenomenon, known as dissonant acculturation means that children acquire English as their first language more often, adopt the values and norms of the host society more readily, and develop cross-cultural relationships more easily than their parents (Portes & Rumbaut, 1996). As parents and children begin to feel alienated from one-another, parents will restrict the child's acculturation inciting further rejection of the parental culture by the child (Santisteban et al., 1996; Szapocznik et al., 1984). This parent-child alienation caused by different acculturation rates is known as the acculturation gap distress model (Szapocznik & Kurtines, 1993). Simply stated, children of immigrants tend to adapt the values, norms, beliefs, and attitudes of the host culture much quicker than their parents. This leads to a difference in attitudes and beliefs between parent and child labeled the acculturation gap. Implicit in the acculturation gap distress model is the belief that the acculturation gap is inherently stressful. This stress impacts upon both the parent and the child because of differences in acculturation rates.

The acculturation distance often makes parenting difficult in recent immigrant families. Children of immigrants have difficulty seeking help from parents that are often overburdened by resettlement obligations such as housing and work. Simultaneously, parents must rely on children for translation assistance and to be a culture broker; leaving some to speculate parents feel their authority is undermined by placing such responsibilities on their children (Jones & Trickett, 2005).

Studies report conflicting information on the role of the parent-child relationship in influencing the acculturation gap. Schofield et al. (2008) suggest parent-child relationship

quality, especially among father and child, moderates the negative effects of the acculturation gap. The better the quality of the relationship between parent and child the lower the negative effects of the acculturation gap will be. A study by Lau et al. (2005) found no effect in acculturation gaps in influencing deviant behavior among children of immigrants. Alignment with the parent's native culture by the child was associated with greater deviant behavior contrary to the acculturation gap hypothesis which suggests cultural differences (dissonant acculturation) lead to negative outcomes in the parent-child relationship. In a similar fashion, Pasch et al. (2006) reported lower levels of parent-child conflict among those with the highest levels of dissonant acculturation. Those with the largest acculturation gaps also had the lowest levels of parent-child conflict. Furthermore, the acculturation strategy adopted by the parents has implications for the child. Parents that adopt a more positive acculturation approach tend to have a smaller acculturation gap and children with lower anxiety, less parent-child conflict and a higher self-esteem (Farver, Narang, & Bhadha, 2002). This suggests that a positive acculturation approach by parents may begin to close the acculturation gap. However, the relationship quality, and the level of conflict experienced between the parent and child do not present a coherent picture about dissonant acculturation in immigrant families warranting further research.

Conceptualizing dissonant acculturation.

Dissonant acculturation has been conceptualized as parent-youth mismatches in both acculturation and acculturation style leading to distress in minority families (Lau et al., 2005). Researchers often rely on a one-dimensional approach to operationalize this conceptualization in accordance with Berry's (1997) conceptualization of assimilation. Rather than a true acculturation gap measurement, much of the research has taken a bifurcated approach to measuring dissonant acculturation. This "on-off" approach has produced an extensive body of

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conflicting literature. Other approaches have used acculturation instruments delivered to both parent and child with the resulting difference scores providing a quantifiable number as to the size of the acculturation gap (Buki et al., 2003; Merali, 2002). The use of acculturation instruments is however, contradictory to this study's views of culture and acculturation. Additionally, measures of acculturation are often plagued by issues of psychometric accuracy (Rudmin, 2006; 2003; Rudmin & Ahmadzadeh, 2001) relying too heavily on ethnic stereotypes and broad cultural holisms.

A less-used approach for examining the acculturation gap is by examining acculturation and the family functioning. Birman (2006b) suggests that this can be done by looking at family conflict in addition to examining the acculturation of the parent or child. This approach is popular in comparative studies which infer that conflict or low cohesion is the result of an acculturation gap. However, as others have pointed out there may be cultural and familial reasons for these family functioning results (Rosenthal et al., 1989; Rosenthal & Bornhalt, 1988). In staying with a cognitive conceptualization of culture, this study will use a family functioning approach to dissonant acculturation.

Social Identity Theory & the Immigrant Paradigm

The adaptation of immigrants and their descendants to a new culture involves the uptake of norms, values, and belief systems that are alien. Confronted with these new ideas individuals are often forced to question their own identity. Mid-century social psychologists concerned with explaining intergroup conflict and identity advanced multiple theories in an effort to explain how conflict occurs. Prior to the advent of social identity theory, these early suppositions were concerned mainly with individual psychological processes (Abrams & Hogg, 2004). Later work began to develop in favor of a theory of identity derived from group membership (Tajfel,

Flament, Billig, & Bundy, 1971). The ideas advanced from this work would lead to social

identity theory; a means to identify one's self by in-group allegiance and out-group exclusion.

Put succinctly, a social identity is a person's knowledge that he or she belongs to a social

category or group (Hogg & Abrams, 1988). A social group is a set of individuals with a

common social identity or commitment to a common social group (Stets & Burke, 2000).

Initially described as a theory of intergroup conflict, social identity theory posited

individuals achieved and maintained group membership based on having similar characteristics

as other group members (Tajfel & Turner, 1979). In turn, this contributed to a process of

identification through membership with the group. A sense of personal identity is, in part,

achieved through membership with a group. In a similar fashion, enhancement to the social

identity is accomplished through comparing in-group membership to out-groups (Tajfel &

Turner, 1986).

Erikson (1968) theorized that identity formation is a major developmental milestone and

confusion about identity can be psychologically harmful. Ethnic and national identity

contributes to the personal identity that is generally formed in adolescence (Quintana et al.,

2006). Adolescents from lower socioeconomic backgrounds, as well as immigrants and ethnic

minorities must struggle to form this identity in an environment of poverty, prejudice and

discrimination (Quintana, 2007). Identity formation is a crucial part of adolescence that can be

made more difficult by socioeconomic status, migration, and prejudice.

Ethnic social identity and the immigrant.

Identity formation for the immigrant is a difficult task under the best circumstances

(Rumbaut, 1994a). While immigration may permit opportunities for selection of cultural and

personal traits that promote greater well-being (Fuligni, 2004), more often immigrants are

overcome by tasks of survival, learning a new language, and creating new social networks (Ward, Bochner, & Furnham, 2001). Furthermore, the identities associated with their native country, receiving country, and ethnic group must all be explored in concert (Phinny, 1992) making identity development more strenuous.

Cultural identity has been conceptualized as "the part of social identity that reflects the individual's self-perception and self-definition as a member of a cultural group (Tartakovsky, 2009, p. 655)." While this may appear straight forward, individuals who come from ethnically blended families or who have immigrated may associate with multiple cultures and nationalities (Phinney et al., 1990; Schwartz, Montgomery, & Briones, 2006). A longitudinal study of Jewish Ukrainian and Russian adolescents provides some evidence of cultural identity formation (Tartakovsky, 2009). Following a sample of adolescents migrating from Russia and the Ukraine to Israel from pre-migration over three years post-migration, the stages of cultural identity were described. During pre-migration, the participants devalued their home and idealized the receiving country. After spending one year in Israel, the participants were disillusioned with the receiving country and their national-home identity was strengthened. By the end of year two in Israel they had taken on a bicultural identity (Tartakovsky, 2009). These stages, devaluation, disillusionment, and biculturalism represent a process of cultural identity formation. Furthermore, they illustrate that immigrants must contend a broad range of emotions when dealing with the migration process.

A similar study compared the formation of identity among groups who had traditionally held unequal social power – Russian Jews and Ethiopian Jews. Adolescent Jews from Russia and Ethiopia, which had both immigrated to Israel, were examined in the context of changing Israeli policy that promoted tolerance of multiculturalism (Roniger & Feiga, 1993). The

resulting immigrant identity that developed among the two groups was similar despite ethnic differences, differences in country of origin, and ethnic similarities between Russian and Israeli individuals. The immigrant participants developed their immigrant identity with respect to their Israeli counterparts (Mana, Orr, & Mana, 2009). In developing their identity both Russian and Ethiopian Jews made comparisons to the Israeli Jews instead of to one another. Tajfel and Turner (1986) theorized that high-status group members can experience insecurity resulting from threats to their superior position due to activities of low-status groups. However, both groups formed similar identities making this assertion questionable.

A strong sense of ethnic identity has been found to be a positive predictor of adjustment in adolescent immigrants (Fuligni, Witkow, & Garcia, 2005). Moreover, Nesdale and colleagues (1997) demonstrated that a strong sense of ethnic identity was able to predict coping resources for recent migrants. However, the complexity of ethnicity and ethnic identity cannot be understated. Bicultural and multicultural models of identity utilized in acculturation frameworks often use ethnicity and national identity interchangeably (Cuellar, Nyberg, Maldando, & Roberts, 1997). Still, data indicates that ethnic identity and national identity may have differing effects on social identity. Immigrant identity is impacted by feelings of national allegiance and ethnic self, but the salience of each is unique (Birman, Persky, & Yi Chan, 2010). While one may contend their allegiance to a country, it is possible that ethnicity composes a greater portion of social identity. Furthermore, national identity and ethnic identity are not the same making the interchange of ethnic identity and national identity erroneous.

Group status is established in relation to other groups' position relative to social, political, and economic factors (Turner & Brown, 1978). Making comparisons of one's in-group to out-groups, the usual mechanism for bolstering one's social identity may not always result in a

positive self-image (Jetten, Branscombe, Schmitt, & Spears, 2001). The construction of identity

is an active process and is framed by interaction with others. Goffman (1959) noted that

individuals attempt to control how others perceive them through controlling setting and

appearance. For the recent immigrant it is much more difficult to control perceptions due to a

lack of understanding about basic social norms and mores. Immigrants must also overcome

discrediting due to their racial/ethnic background as well as their immigrant status (Marvasti,

2005). There is an inherent lack of trust bestowed upon those who are perceived as different.

Furthermore, the social and cultural references typically used in the construction of identity are

different as a result of immigration (Valenta, 2009). The change in references for the social

construction of identity combined with the inability to successfully manage interactions with

others in the host society contributes to loss of identity management and feelings of stigma

(Valenta, 2009).

     Conceptualizing ethnic social identity.

    Ethnic identity was first classified by Herodotus as kinship, language, and customs

common to all Greeks (Hall, 1998). Since that time, ethnicity has been constructed in

innumerable ways. Critics have pointed out the highly flexible nature of ethnicity and its utility

in political movements, ability to polarize individuals and groups, and its lack of capacity to

reflect real-world circumstances (Cohen, 1978; Vincent, 1974). Still, research has continued to

use ethnicity as a key variable to describe differences and similarities among people. Research

has indicated that first-generation immigrants' ethnic identity does not change very much, while

latter generations choose a bicultural identity (Liebkind, 2006). Furthermore, ethnic identity

formation is a continuous process and ethnic identity achievement may not always occur as

immigrants continually repeat stages and re-think their identity (Holcomb-McCoy, 2005).

Jackson and Smith (1999) propose a four-part framework for conceptualizing social identity that allows researchers to breakdown the theory into its fundamental components, while separating the potential concepts so that they may be measured. This four-part framework includes perceptions of the intergroup context, attraction to the in-group, common fate, and depersonalization. Attraction to the intergroup is the primary means by which this study will conceptualize social identity and is based upon the premise that in-group identification is defined in part by the intergroup relationship. This has also the primary means for researching ethnic groups and social identity (e.g. Berry, Trimble, & Olmedo, 1996). Ultimately, ethnic social identity will be conceptualized as a desire to affiliate with one's own ethnic group. This conceptualization will be reflected through examination of ethnic in-group preference.

Family Cohesion, Subjective Social Status, & Discrimination Among Hispanic Immigrants

      Family cohesion.

Family cohesion is defined as "shared affection, support, and helpfulness among family members (Barber & Buehler, 1996, 433)." Simply put, family cohesion is a feeling of closeness among the members of a family. The effects of this closeness, or the lack of it, can have far reaching effects for children, adolescents, and the family. Movement from a familiar cultural environment into a new, unfamiliar country impacts not only the individual but the family as well. Much has been written on the role of family cohesion and its impact on the immigrant child. Marsiglia et al. (2009) found high and low levels of family cohesion to be predictive of alcohol use in Latino adolescents when compared to medium levels of family cohesion in immigrant Latino families. These results indicated medium levels of cohesion are protective, but excess cohesion is harmful just as too little cohesiveness causes harm. In a similar study, Marsiglia, Parsai, and Kulis (2009) found family cohesion to be a protective factor in preventing

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rule-breaking behavior among Hispanic adolescents. Those Hispanic adolescents with higher levels of family cohesion, as compared to their peers with lower levels, were less likely to engage in rule-breaking behaviors. It is little surprise then that family cohesion is predictive of social skill and self-efficacy among Latino children (Leidy, Guerra, & Torro, 2010). The family provides growth opportunities whereby children develop social skills that can later be used outside the family context. Acculturation conflict has also been found to be inversely correlated with family cohesion (Smokowski, Rose, & Bacallo, 2008) suggesting stronger families have an easier time adjusting. Those families with higher levels of cohesion are less likely to suffer internal strife and conflict as a result of the adaptation process.

Prejudice is the persistent companion of the immigrant. Family cohesion has been found to buffer the effects of discrimination while family conflict exacerbates its effect (Juang & Alvarez, 2010). Family members assist one another in dealing with discrimination during adaptation. However, families lacking cohesion are less able to assist one another intensifying the effects of discrimination. Family cohesion has also been demonstrated to impact how adolescents perceive racism and in promoting a positive view of their own ethnic community (Rousseau et al., 2009). Families serve to filter the effects of racism when family cohesion is high resulting in a more positive view of one's ethnic community. Racism, especially in the children of immigrants, has also been shown to contribute to acculturative stress in immigrant families (Thomas, 1995; Zhou, 1997). Children of immigrants are considered highly susceptible to acculturative stress due to their lack of cultural ties to another country making them vulnerable to the evaluation of those in their host country (Gans, 1992). Acculturative stress is the stress resulting from the cultural adaptation process. Family cohesion can buffer the effects of racism thus reducing acculturative stress in immigrant children.

Subjective social status.

Early research on subjective social status conflated socioeconomic status and social status, implying that as income and education increased, so too did the social value of the individual (Adler et al., 2000). This early research often asked participants to self-identify as belonging to "low, middle, or upper class" and inferences were made within and between groups as to the nature of the individuals' health (Jackman & Jackman, 1973). Later studies differentiated between subjective measures of social status and objective measures of status like socioeconomic status.

There is very limited research on subjective social status and Hispanic immigrants in the U.S. One study indicates that subjective social status has no effect when objective measures are included on the health of low-income Mexicans (Franzini & Fernandez-Esquer, 2006). A study among Asian immigrants found that subjective social status impacted upon the mental health of those migrating after adulthood, while there was no effect for those migrating during their youth (Leu et al., 2008). There are a myriad of conflicting views on the importance and reliability of subjective social status. While objective measures of social status are generally agreed upon, subjective social status has no agreed upon measure (Demakaos et al., 2008). Regardless, the impact of subjective social status upon stress and mental health outcomes has been repeatedly demonstrated (Kessler, 1979). A paucity of findings on subjective social status suggests that Hispanic immigrants, due to their position relative to the native majority, may succumb to worsening mental health outcomes.

Discrimination.

Discrimination is part of the historical narrative of immigrants to the U.S. Hispanic immigrants have experienced discrimination from native groups in especially high rates as

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compared with previous European-origin immigrants (Portes & Rumbaut, 2001). This is due to the ethnic and cultural differences that exist between the predominantly white majority, and the Hispanic minority of those migrating into the U.S. from places like Mexico, El Salvador, and Guatemala.

The effects of discrimination, both in the broadest sense, and on the mental health of immigrants have been well studied. The crux of segmented-assimilation theory relies on findings that indicate discriminatory patterns vary by geographic location; immigrants moving into a receptive community are far more likely to experience upward mobility than those moving into a community that is highly racist and discriminatory towards immigrants (Portes & Rumbaut, 2006; Portes & Rumbaut, 2001).

Other studies have found that discrimination has a profound effect on the ethnic identity and mental health of immigrants. Studies have repeatedly shown that discrimination has a negative impact on the psychological well-being of immigrants (Liebkind & Jasinskaja-Lahti, 2000) as well as being associated with an increase in depressive symptoms (Noh, Kaspar, & Wickrama, 2007). Those choosing a "mainstream" identity, that is an identity reflective of the native majority, are more likely to suffer fewer effects of discrimination as compared to those using an ethnic identity (Rumbaut, 2005; Yip, Gee, & Takeuchi, 2008). However, what is not clear is if this "identity effect" is the result of self-labeling and the adaptation of customs that go along with the identity resulting in fewer acts of discrimination, or if this self-labeling works to help the individual cope with the discriminatory behavior of others.

Psychosocial Context

There are several contextual variables that have been demonstrated to have an effect on both cultural adaptation and depression. Females are more likely to suffer from depression than

males (Nolen-Hoeksema, 2001; Weissman & Klerman, 1977) and this holds true for Hispanic populations as well (Golding & Karno, 1988; Hiott et al., 2006; Portes & Rumbaut, 2001). Additionally, gender role expectations can differ greatly between the immigrant's country of origin and the host country. Gender role expectations differ the most between immigrant and native females (Dion & Dion, 2001). These differences in gender expectations may impact on the acculturation of both young female and male immigrants as they seek to adapt to two different cultural systems.

Education and income are key components of socioeconomic status. It has been hypothesized that greater education increases the likelihood of successful assimilation into the mainstream (Portes & Rumbaut, 2001). Consistent with this prediction, researchers have demonstrated that those with higher education are less likely to suffer from depression (Akhtar-Danesh & Landeen, 2007; Blazer et al., 1994) thus increasing their overall functioning. A fundamental premise of acculturation theory is that continued first hand contact between differing cultures brings about change (Redfield, Linton, & Herskovits, 1936). The amount of time young immigrants have been in the U.S. increases the possibility that they have begun to adopt native cultural values and norms. However, those from lower socioeconomic backgrounds have been shown consistently to be more likely to suffer from depression and other mental health problems (Kessler, 1982; Murphy et al., 1991; Zimmerman & Katon, 2005).

The psychosocial context, in which the immigrant adapts, influences not only cultural adaptation but the natural developmental processes as well. These influences, attributable to age, gender, education, ethnicity and poverty are not specific to immigrant families. Acculturative processes which are a greater burden for immigrant families may be influenced by these contextual processes (Rudmin, 2003). Portes and colleagues (2001) pointed to human and social

capital as key predictors in upward mobility among recently arrived immigrant families. Portes was able to demonstrate that those with a higher socioeconomic status upon entry, accepted education and training by U.S. employers, and an intact social network were more readily able to adapt native values and customs. In contrast, those who began life in the United States poor, were more likely to experience discrimination, long-term poverty, and the effects of what he labeled downward assimilation; this is a process of downward mobility combined with assimilation into the poorest parts of society instead of the middle class (Portes & Rumbaut, 2001; Portes & Zhou, 1993).

Previous studies (Lara et al., 2005; Negy & Woods, 1992a; Negy & Woods, 1992b) indicate that a significant correlation exists between socioeconomic status (SES) and acculturation potentially confounding the influence of acculturation in the proposed model. These studies suggest that as acculturation increases so to do standards of living. In order to address this potential discrepancy, socioeconomic status will be defined using poverty level and educational level and an analysis will be conducted to assess for associations among these variables. Given that language proficiency will be used to measure acculturation, this is particularly important as linguistic skills have been shown to improve in recently arrived Hispanic immigrants along with education and occupational skill, albeit marginally when compared with long term exposure to an English speaking environment (Espenshade & Fu, 1997). However, all of the aforementioned studies suffer from issues of causality making the direction of the proposition uncertain. Does one's socioeconomic status increase as acculturation levels increase, or do acculturation rates increase as socioeconomic status increases?

Depressive Symptoms

The main outcome of the current study is depressive symptoms as measured by depressive symptom count. The NLAAS offers multiple variables for examining mental health outcomes in the selected population. The use of depressive symptoms as a primary outcome reflects the current state of the literature, where there is a heavy emphasis on describing the immigrant's functionality in society. The psychosocial and environmental conditions many immigrant families must endure also bear importance with respect to depression. Stressful life events such as emigration (Hammen, 2005; Golding & Burnam, 1990), the lack of an intact support system (Kim & McKenry, 1998; Vega et al., 1991) as a result of immigration, and poor living conditions (Aroian & Norris, 2002; Pachter et al, 2006) have all been linked to higher odds of depression.

Depressive symptoms have long been used to screen for clinical depression in various populations. Tools like the Center for Epidemiologic Studies Depression Scale (CES-D) are designed to assess for depressive symptoms in the general population (Radloff, 1977). Follow up studies concluded that the CES-D and similar instruments, while helpful for screening, cannot not be used for diagnostic purposes (Weissman et al., 1977). However, one long-term study indicated that depressive symptoms have utility in both diagnosis and screening. After a twelve year examination of treatment-seeking patients with major depression, Judd and colleagues (1998) found considerable week-to-week variation in symptoms. While symptoms were prolonged over the course of treatment, patients more often showed symptom levels congruent with dysthymic disorder or subsyndromal depression than with major depression. Finally, studying symptoms in lieu of diagnoses allows for a closer look at the psychological phenomena

itself. While diagnoses place the most and least severe cases in the same category, examination

of symptoms provides a more nuanced look at the psychological phenomenon (Persons, 1986)

Depression and the Hispanic culture.

The Diagnostic and Statistical Manual of Mental Disorders (DSM) provides guidelines

for the diagnosis of mental illness for mental health clinicians in the United States. Using the

medical model, the DSM allows clinicians to appraise individuals for the presence and severity

of symptoms and ultimately to provide a diagnosis (Rogler, 1997). However, the criteria to do

this are established by a committee of the American Psychiatric Association; who in turn decide

which mental illnesses and associated symptoms are acceptable for inclusion in the DSM. This

committee mechanism builds in a Western bias in the diagnosis and treatment of mental illness

(Widiger & Sankis, 2000) thus imposing a Euro-Western perspective on clinicians and potential

patients. This is evidenced in the diagnosis of "culturally-bound syndrome" which provides no

quantification or specification and as with other diagnosis assumes that Western culture is

universal, while culturally specific phenomena are rare (Kleinman, 1997). Furthermore, Vega

and Rumbaut (1991) argue that mental illness in ethnic minorities must be considered in the

context of economic and social disparities. Minorities often have less access to resources to

assist with their mental illness which in turn creates increasing severity and co-occurring

problems such as substance abuse and mood or anxiety disorders.

The combination of a Eurocentric approach and poor access to services creates the

illusion of similar mental health paradigms for immigrants and natives. However, many Latino

immigrants ascribe to different beliefs about mental illness and differing ideas about how to treat

the infirm (Lopez & Guarnaccia, 2000). Latinos diagnosed with mental illness have been found

to report significantly more symptoms than non-Latinos despite findings that suggest many of

the reported symptoms are not the result of illness but the result of difficulties in accurately applying a culturally specified mental illness to the member of a non-Western culture (Lopez et al., 1992; Minsky et al., 2003). Ultimately this leads to a mental health system that imposes diagnoses and treatment options onto culturally diverse clientele without their input into the formation of either. While clinicians may do their best to provide options, the development of medications, interventions, and treatment systems are done in the framework provided by the DSM and the American Psychiatric Association.

Gaps in the Literature

The effects of immigration on mental health have been examined in some detail. Researchers have focused primarily on conducting exploratory and descriptive studies which provide an overview of the phenomena. This research has led to a more thorough understanding of mental illness among immigrant groups, how illness develops as immigrant groups assimilate, and how immigrant groups access and utilize mental health services. Despite these advances, several important gaps exist in the literature: (1) Although acculturation has been used to develop further research concepts such as acculturative stress and dissonant acculturation, a concise account of the collective effects of these acculturative phenomena on mental illness is lacking (Hwang & Ting, 2008); (2) previous studies have demonstrated the effect of family cohesion in moderating the negative effects of immigration, however there is no indication it has been tested in a model of multiple acculturative phenomena; (3) acculturation research has ignored a fundamental principle – culture (Triandis, 1997), in favor of a stress-process model of acculturation. This study addresses the aforementioned gaps in the literature.

Research Questions

The study addresses the following questions:

1. What is the relationship among acculturation, acculturative stress, dissonant acculturation, social identity, subjective social status, and discrimination in a sample of Hispanic immigrants who migrated before age 18?

2. What effect does psychosocial context and cultural adaptation have on depressive symptoms in a sample of Hispanic immigrants who migrated before age 18?

3. What effect does family cohesion have on the relationship between cultural adaptation and depressive symptoms in a sample of Hispanic immigrants who migrated before age 18?

Conclusion

Evidence exists to show that acculturation – which arises from continuous first hand contact with a different cultural group, is a stressful process and has implications for the mental health of young immigrants. Acculturative stress and the acculturation gap are formative process shaping the immigrants perceptions. While they may be moderated by family cohesion, other factors such as subjective social status and discrimination play a key role in the development of mental illness among immigrants. In-group – out-group affiliations have been linked with stress and with the development of ethnic identity, a culturally-bound process (Berry, 1997; Phinney, 1992). Furthermore, social identity has been shown to have an effect on mental well-being (Mana, Orr, & Mana, 2009). Despite evidence to suggest a relationship, a coherent model testing the connection among these phenomena is lacking in the literature. This study proposes to fill this gap in knowledge by positing and testing a conceptual model about the relationships that exist among these phenomena.

Chapter 3 – Research Methods

Research Design

This study conducted a secondary analysis of the National Latino and Asian American Study (NLAAS), which is a cross-sectional study providing information on mental illness and service use among Latinos and Asian-Americans. The NLAAS is a component of the Collaborative Psychiatric Epidemiology Survey (CPES), which is funded by the National Institute of Mental Health (NIMH) and provides data on mental disorders among the general population, with special emphasis on minority groups (CPES, n.d.). The studies in the CPES provide data on the influence of culture and ethnicity on mental health. The NLAAS is a nationally representative sample of Latinos and Asian-Americans in the United States (Alegria & Takeuchi, 2001-2003).

The NLAAS had three specific aims with regard to the CPES: (1) to describe the prevalence of psychiatric disorders and mental health service use among Latinos and Asian-Americans living in the United States; (2) to evaluate associations of social position, environmental context, and psychosocial factors with prevalence and service utilization and; (3) to compare the prevalence and service utilization rates of Latinos and Asian-Americans with data on non-Latino whites collected in another CPES study. The NLAAS design and study aims are congruent with the purposes and aims of the current study.

Institutional Review Board approval.

The data proposed for use in this study come from a completed study and do not identify respondents. Use of the NLAAS public data has been approved by the University of Alabama

Institutional Review Board (IRB) (2011). The original NLAAS project obtained IRB approval from The University of Michigan.

NLAAS Sampling Strategy

The University of Michigan Survey Research Center collected the data for the CPES studies. In doing so, a strategic approach to sampling was employed so that a nationally representative sample that was comparable across all CPES studies could be achieved, while attaining the sampling goals of each study. Thus, each study shared a common sampling strategy with some modifications made to reach the specific demographics assigned to each study (Alegria & Takeuchi, 2001-2003).

The CPES conducted a multistage area probability sample of 252 geographic areas. A four-stage sampling process was used beginning with researchers sampling U.S. Metropolitan Statistical Areas (MSA). Researchers further refined the sampling frame by limiting the geographic range in three more steps; first they sampled area segments, followed by housing units and concluding with respondents. Area segments are contiguous geographic regions with 50-100 occupied housing units (Alegria & Takeuchi, 2001-2003).

For the NLAAS, researchers focused on non-institutionalized Latino and Asian-Americans over 18 in the coterminous United States, Alaska, and Hawaii. There were 27,026 housing units screened for eligible applicants and 4,649 completed interviews. Latinos were divided into four strata – Mexican, Puerto Rican, Cuban and Other Hispanic. Asian-Americans were also divided into ethnic strata including Chinese, Filipino, Vietnamese, and Other Asian. A high-density supplemental sample was also collected in order to ensure that ethnicities of interest would be included in the NLAAS. Areas with a greater than 5% density of selected ethnic group were over sampled in order to assure representation (Alegria & Takeuchi, 2001-2003).

NLAAS Data Collection

Data collection for the NLAAS study occurred during the 2001 calendar year. Most NLAAS interviews were conducted face-to-face using Computer Assisted Personal Interviewers with the average interview lasting 2 ½ hours. Some interviews were conducted over the telephone when the respondents were unable to complete the survey in one sitting or when the respondent and the interviewer did not speak the same language. Participants in the NLAAS were required to give written consent to their willingness to participate in the study. Of those eligible, 3,620 were identified as main respondents and 1,029 second adult interviews were completed (Alegria & Takeuchi, 2001-2003).

Characteristics of Total NLAAS Sample

The NLAAS is a nationally representative sample of non-institutionalized Latinos and Asian-Americans residing in the United States. The largest group sampled by far was those asserting Mexican ancestry (Alegria & Takeuchi, 2001-2003). This is similar to national estimates (Ennis, Rios-Vargas, & Albert, 2011; Pew Hispanic Center, 2011) suggesting that those of Mexican origin are the largest Hispanic group residing in the U.S. The age range for participants was consistent with the inclusion criteria for this study $(18 - 97)$ with a mean age of 40.88 years (SD=15.25) and a median age of 39 years. The reported sex by respondents was predominantly female (N=2524) and composed 54.29% of the sample (Alegria & Takeuchi, 2001-2003).

Table 1

NLAAS Sample Characteristics

Country of Origin		Sex		Age	
	N (%)		N (%)		
Vietnamese	520 (11.19)	Female	2524 (54.29)	Min.	18
Filipino	508 (10.93)	Male	2125 (45.71)	Max.	97
Chinese	600 (12.91)			Mean	40.88
Other Asian	467 (10.005)			Median	39
Cuban	577 (12.41)				
Puerto Rican	495 (10.65)				
Mexican	868 (18.67)				
Other Hispanic	614 (13.21)				

Current study sample.

The current study focuses specifically on Hispanic immigrants that migrated to the U.S.

by age 17. The current study includes Latinos born outside the U.S. who migrated into the

country by age 17. All study participants were adults over the age of 18 at the time of data

collection.

Variables

This study investigates the effect of a combination of phenomena on depressive

symptoms in Hispanics who immigrated as children. The specific constructs selected for

inclusion in this study come from an extensive overview provided by the literature and the

current theoretical understanding of the topic. However, the measures included in this study

were designed for the purposes of the NLAAS. As such, there is the possibility that what these

variables originally measured may differ somewhat from what I intend them to measure. That

said, I believe that the variables selected from the NLAAS study for inclusion in the current

project adequately capture the phenomena under investigation, successfully providing a

mechanism to achieve the proposed study's aims. In almost every instance the NLAAS provides

a variable to measure the construct under consideration. In cases where a variable is not

available, a proxy variable serves to measure the construct though these cases are rare. Table 2

lists the variables included in the current study.

Table 2
Study Variables

Psychosocial Context	Cultural Adaptation	Moderator	Outcome
Gender	Acculturation	Family Cohesion	Depressive Symptoms
Education	Acculturative Stress		
Years in the U.S.			
	Dissonant Acculturation		
Poverty Ratio			
Age	Ethnic Social Identity		
Ethnicity			
	Subjective Social Status		
	Discrimination		

Measures in Study

Psychosocial context.

Variables used to capture Psychosocial Context include the participants' gender,

educational level coded among three separate categories ($0 = 0$-11 years; $1 = 12$ years; $2 > 12$

years), the years spent in the U.S. coded among five categories ($0 =$ U.S. Born; $1 = < 5$ years; $2 =$

5-10 years; $3 = 11$-20 years; $4 = 20+$ years), poverty ratio, sex (male $= 0$; female $= 1$), age in

years, and ethnicity (Cuban, Puerto Rican, Mexican, and other Hispanic). The poverty ratio was

included which calculates the participants reported income to the 2001 Census Poverty

Threshold. The resulting responses can vary from 0 to 17 and indicate how far above or below

the poverty level participants live with those at or below 1 living in poverty. The Mexican ethnic group was used as the reference category.

Cultural adaptation.

This section provides an overview of the measures of cultural adaptation for the current study. Included is information on the measure's origin, measurement technique, and purpose. Table 3 provides the reported Chronbach's alpha level for each scale for the selected study sample and for the entire Latino sample of the NLAAS.

Acculturation.

This construct was assessed using two three-item sub-scales designed to measure language proficiency. These items were used to measure acculturation relying on cognitive constructs of culture as explicated by the Sapir-Whorf hypothesis (Kay & Kempton, 1984). The Spanish language version of the language proficiency scale used in the NLAAS was derived from the Cultural Identity Scale for Latino Adolescents (Felix-Ortiz, Newcomb, & Meyers, 1994). The English language version was developed specifically for the NLAAS. Higher scores represent higher linguistic proficiency and lower scores represent lower proficiency (Alegria & Takeuchi, 2001-2003). For this study, the English language proficiency and Spanish language proficiency measures were recoded and combined into a single measure of acculturation. Negative scores represent a greater proficiency in Spanish, while positive scores represent a greater proficiency in English. A zero score represents equal proficiency in both languages. Questions were used that asked respondents how well they speak, read, and write in English and in Spanish. Response categories include poor, fair, good, and excellent. Combining both linguistic proficiency scales into a single item allows the researcher to assess acculturation relative to both the broader Spanish and English context. Respondents' answers, when combined

into a single item, represent a global assessment of their acculturation with respect to both cultures. Therefore those with greater English proficiency (positive scores) are said to be more acculturated than those with greater Spanish proficiency (negative scores).

Acculturative stress.

This study used an eight-item scale to measure acculturative stress which was included in the NLAAS data collection. The scale was taken from The Mexican-American Prevalence and Services Survey (Vega et al., 1998) and measures the stress of cultural change. Questions ask respondents about the stresses of adapting and about difficulties with the English language. The scale is measured with yes (1) and no (0) responses, with lower scores indicating lower stress.

Dissonant acculturation.

A five-item scale originally designed to measure family-cultural conflict was used to measure dissonant acculturation. The scale addresses "cultural and intergenerational conflict that arises between respondents and their families" (Alegria, Vila et al., 2004, 278). As pointed out by Birman, (2006b) this type of conflict is often the result of dissonant acculturation. These items were drawn from the Hispanic Stress Inventory (Cervantes et al, 1991). Likert-style response categories include hardly ever or never (1), sometimes (2), and often (3). Higher scores indicate greater dissonant acculturation.

Ethnic social identity.

Three items were used to measure ethnic social identity. Participants are asked how closely they feel to those of the same ethnicity, how closely they are in their ideas and feelings to those of the same ethnicity, and how much time they like to spend with those of the same ethnicity. The first two questions have responses ranging from "very close" to "not at all." The

third question has responses ranging from "a lot" to "not at all." Responses are scored using a four-point Likert scale with higher numbers representing more favorable in-group comparisons.

Family cohesion, subjective social status, & discrimination.

This section provides an overview of the measures of family cohesion, subjective social status, and discrimination for the current study. Information is provided with detail on the measure's origin, measurement technique, and purpose. Table 3 presents the reported Chronbach's alpha level for each scale for the selected study sample and for the entire Latino sample of the NLAAS.

Family cohesion.

Measurement of family cohesion is obtained through summation of a 10-item scale developed by Olson and colleagues (1986). Respondents were asked to indicate how much they agree with a variety of statements about their family. Responses range from "strongly agree" to "strongly disagree" on a 4-point scale. Higher scores indicate a higher level of family cohesion.

Subjective social status.

Two items were used to measure subjective social status. Participants were asked to think of a ladder with 10 rungs. At the top of the ladder are those who are the best off, and at the bottom are those who are the worst off. For one item participants were asked on which rung they would be on compared to those in their community. For the second item participants were asked which rung they would be on compared to those in the United States. Responses range from 0 to 10 for each item. Higher numbers indicate a higher subjective social status.

Discrimination.

Nine items were used to measure discrimination. Taken from the Detroit Area Study (Williams et al., 1997), these items ask respondents to indicate how often they experience being

treated with less respect than other people, having people act scared of them, and/or being

insulted. The scale uses a 6-point Likert scale with scores ranging from "almost every day" to

"never." Higher scores indicate a higher incidence of discrimination.

Table 3

Internal Consistency (Cronbach's alpha) of Measures

Scale	Alpha	N	# Items
Acculturation	0.670	563	6
Acculturative Stress	0.706	580	9
Dissonant Acculturation	0.791	577	4
Ethnic Social Identity	0.770	576	5
Subjective Social Status	0.764	568	2
Discrimination	0.893	570	9
Family Cohesion	0.933	575	10

Outcome Variable.

Depressive symptoms.

A 34-item checklist of depressive symptoms was used during data collection to assess

participants for symptoms of depression. The checklist is part of a modified version of the

World Mental Health Initiative Composite International Diagnostic Interview (CIDI) developed

by Kessler and Üstün (2004). The CIDI is designed to assess participants for mental illnesses as

outlined by the World Health Organization's International Classification of Disease (ICD)

criteria and the American Psychiatric Association's Diagnostic and Statistical Manuals of Mental

Disorders (DSM). Participants were asked a series of questions each reflecting a specific

symptom or set of symptoms indicative of depression. Responses included yes (1) and no (0).

Responses are summed to provide a total symptom count with lower totals indicating fewer

depressive symptoms.

Analysis Plan

Descriptive analysis.

Data was analyzed using the Predictive Analytics SoftWare (PASW) version 18. The first stage of the analysis was an examination of the psychometric properties of the selected scales (see "Measures Used in Study") with the current study's sample. Although the psychometric properties of these scales have been presented elsewhere regarding the entire sample used in the original study (Alegria et al., 2004), my sample differs from the NLAAS sample in that it includes only participants who were Latino immigrants having migrated to the U.S. during their youth. A descriptive analysis was also conducted to determine the distributional properties of the data. Bivariate analyses were conducted to examine differences among the age at immigration of the sample. Within the data two groups had already been established with regard to age at immigration; the first were those who had migrated by age 12, the second were those who had migrated between the ages 13 and 17. An alpha level of .05 was used to determine statistical significance throughout the study.

Recursive regression.

To test the proposed model, a technique recommended by Alwin and Hauser (1975) for estimating effects in recursive causal models was used. Recursive regression allows for the decomposition of effects into direct and indirect components in lieu of computation of direct and indirect effects from the coefficients of a structural equation. The first step in calculating a recursive regression is examination of correlations among the study variables in order to assess multicollinearity. Next, the successive computation of equations employing ordinary least squares regression is calculated allowing the researcher to calculate direct and indirect effects,

while providing a path diagram that represents the statistical findings (Alwin & Hauser, 1975; Strang, 2009).

Correlation analysis between cultural adaptation variables & depressive symptoms.

In the first step, each cultural adaptation predictor was examined for a correlation with the outcome and with other adaptation variables. In regression, multicollinearity, or high correlations among independent variables are indicative of some phenomena being measured simultaneously by two or more constructs (Farrar & Glauber, 1967). The potential for high correlations exists since a model of cultural adaptation is being tested. Given this potential, each correlation was examined individually to assess its potential harm to the model (O'brien, 2007).

Recursive regression analysis.

Recursive regression was used to test the conceptual model (see Figure 1) on the effects of cultural adaptation on depressive symptoms among immigrants who migrated during their youth. Recursive regression as an analytic tool for conducting path analysis has several benefits. Recursive regression has the ability to incorporate the variables in the psychosocial context, allowing for greater control of extraneous demographic information. Recursive regression also is not hindered by the number of hypothesized paths as compared to the number of variables. That is, the model cannot be under-identified. Since recursive regression does not rely on a structural equation, but uses the decomposition effects from ordinary least squares regression, it does not suffer from this particular limitation. The end-product of a recursive regression analysis is a statistical model that does not "force" paths that aren't significant. Instead, paths that do not fit will "fall away" as a statistical model develops that can be compared with the conceptual model (Alwin & Hauser, 1975; Strang, 2009).

A recursive regression analysis was conducted to predict the effect of cultural adaptation and psychosocial context on depressive symptoms. A statistical model representing the results of the recursive regression was developed (see Results) displaying the paths from cultural adaptation variables to the outcome while controlling for psychosocial context and family cohesion.

Clinical significance of variables in model.

In order to assess the clinical significance of the variables in the proposed model on depression in immigrants, a binomial logistic regression was also conducted. The NLAAS data set provides computed prevalence rates for major DSM-IV-TR diagnoses. Specifically, this study focused on the twelve month prevalence rate of major depressive episode in assessing the clinical significance of the selected variables. While the CIDI is designed to reflect diagnostic criteria of the ICD-10, clinical calibration of the DSM-IV with the CIDI reveal symptomatic overlay (Kessler et al., 2004) suggesting that the CIDI is an appropriate measure to assess depression as defined in the DSM-IV. Additionally, measurement of DSM-IV-TR defined mental illness is complicated by use of the CIDI, due to the lack of specificity in operationalization provided in the DSM. This has led to questions about the concordance between a shorter, less specified list of symptoms provided in the DSM, and a longer, more precise list of symptoms in the CIDI (Kraemer et al., 2003; Cook, 1998). Kessler's examination of individual level concordance on major depression showed remarkable agreement between the CIDI and the Structured Clinical Interview for DSM Disorders (SCID), a diagnostic interview specifically designed for the DSM on major depression (Kessler et al., 2004), and it therefore can be concluded that the CIDI an acceptable tool for measuring DSM defined depression.

Binomial logistic regression analysis.

A binomial logistic regression was conducted to examine the clinical significance of the variables in the recursive model on diagnoses of depression. The symptom checklist was replaced by the diagnostic variable Major Depressive Episode – 12 Month Prevalence. Participants completing the CIDI either endorsed the diagnoses (1) or did not endorse the diagnoses (0). The binomial logistic regression did not have the advantage of testing the proposed model, but instead examined the variables simultaneously for their significance with regard to a diagnosis of major depressive episode.

Analysis Plan for Specific Research Questions

This study addresses the following research questions:

Research Question 1.

What is the relationship among acculturation, acculturative stress, dissonant acculturation, ethnic social identity, subjective social status, and discrimination in a sample of Hispanic immigrants that migrated by age 17?

. This relationship was examined through the use of a recursive regression analysis, with special attention paid to the relationship among cultural adaptation variables. An increase in the acculturation gap arising from discrimination and changes in one's ethnic identify are fundamental to the ideas behind dissonant acculturation. As questions about the suitability of an immigrant identity, and concerns about discrimination arise, young immigrants may begin to push their familial customs and beliefs away, leading to family conflict. Significant paths would indicate that the acculturation gap is associated with ethnic identity and discrimination

Research Question 2.

What effect does psychosocial context and cultural adaptation have on depressive symptoms in a sample of Hispanic immigrants that migrated by age 17?

This relationship was examined through the use of a recursive regression analysis, with special attention paid to the relationship between psychosocial context and cultural adaptation variables and depressive symptoms. On their own, some of these variables have already been shown to have correlations with anxiety, depression and substance use among immigrants (see Literature Review). However, the collective effects of cultural adaptation have not been examined. The combined effect of these phenomena will allow the model to demonstrate each variables impact upon depressive symptoms.

Research Question 3.

What effect does family cohesion have on the relationship between cultural adaptation and depressive symptoms in a sample of Hispanic immigrants that migrated by age 17?

I suspect that family cohesion, as demonstrated in previous studies, serves to buffer some of the risk attributable to cultural adaptation. I will examine family cohesion as a control variable and will be looking for its moderation effects in the model. Family cohesion was held constant throughout application of the recursive regression analysis in order to examine its potential as a moderator in this model.

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Chapter 4 – Results

Introduction

This chapter presents the results of the analyses conducted to answer the research questions and to test the hypotheses, followed by a brief discussion. First, descriptive, univariate and bivariate analyses are presented. These analyses include characteristics of the overall sample and characteristics of the sample by ethnic group. Variables used in the study are also compared among those arriving in the U.S. before the age of 12, and those arriving between the ages of 13 and 17. Next, analyses were conducted among the entire sample to examine correlations among the predictor and outcome variables in order to identify any problems regarding multicollinearity that might exist in the dataset. Finally, using the procedures described in the data analysis section, a recursive regression test was used to answer the following research questions:

1. What is the relationship among acculturation, acculturative stress, dissonant acculturation, social identity, perceived social status, and discrimination in a sample of Hispanic immigrants that migrated by age 17?

2. What effect does psychosocial context and cultural adaptation have on depressive symptoms in a sample of Hispanic immigrants that migrated by age 17?

3. What effect does family cohesion have on the relationship between cultural adaptation and depressive symptoms in a sample of Hispanic immigrants that migrated by age 17?

Following the recursive regression analysis a binomial logistic regression was conducted to examine the clinical significance of variables in the model, on a diagnostic outcome. Subsequent

to the binomial logistic regression, a bivariate analysis was conducted on statistically significant independent variables and the outcome, major depressive episode – 12 month prevalence.

Preliminary Analyses

Data analysis.

Descriptive analyses were conducted to profile the overall sample and to provide an examination of differences by ethnic grouping. Univriate and bivariate analyses were conducted using T-tests, Chi-square tests and one-way ANOVA in order to examine differences among ethnic groups and contextual variables. Bivariate analyses were also conducted to look for differences in predictor and outcome variables among those arriving to the U.S. by age 12 compared to those arriving in the U.S. between ages 13 and 17.

Profile of sample.

Table 4 presents the sample characteristics by ethnic group and presents the results for chi-square, t-test, and ANOVA tests. Where each test was used is discussed below. Characteristics of the entire sample may be found in Appendix A. Across all four ethnic groups, males and females are equally well represented. Although the Mexican group represented the largest portion of the sample (N= 203, 39%), they had the highest incidence of low education, with 60.1% (N=122) reporting fewer than 12 years of education. This is in contrast to the Cuban group (N=131, 22.5%), which reported the lowest rate (11.5%, N=15) of education below 12 years. Additionally, they also reported the highest rate of higher education with 65.6% (N=86) reporting more than 12 years of education.

Results from a one-way ANOVA revealed that Cubans and Puerto Ricans' time in the U.S. were more similar, while Mexicans and other Hispanics were similar. While those from Cuba and Puerto Rico were more likely to have been in the U.S. for more than 20 years (N=106,

80.9%; N=95, 81.9% respectively), the majority of Mexicans and other Hispanics had been here at least 11 years (N=169, 83.2%; N=110, 83.9% respectively).

One-way ANOVA revealed significant differences exist in the income level of Cubans and Mexicans. Only 15.3% (N=20) Cubans reported income placing them at or below the poverty level, while 51.2% (N= 104) of Mexicans in the sample were at or below the poverty level. In contrast, 75.6% (N=99) of Cubans in the current study reported income that exceeded 200% of the poverty level, while only 31.6% (N=64) of Mexicans reported incomes this high.

One-way ANOVA was used to examine age differences among the sample. The average age among the Cuban sample was 39; the average age among the Puerto Rican sample was 43. The Cuban and Puerto Rican samples were significantly older than the Mexican (mean=33) and other Hispanic samples (mean =30). Chi-square testing was used to examine differences among ethnic groups and age at immigration. The age of immigration was remarkably similar among three of the four categories, with the majority of respondents indicating they migrated by the age of twelve. However, Mexicans reported that they migrated at ages 13 to 17 (N=105, 51.7%) as often as they did by age 12 (N=98, 48.3%).

Table 4   * .05 Significance

Sample Characteristics by Ethnic Group   **.01 Significance

Ethnic Group	N (%)/Mean (SD) Cuban	N (%)/Mean (SD) Puerto Rican	N (%)/Mean (SD) Mexican	N (%)/Mean (SD) Other Hispanic
N	131 (22.5)	116 (20)	203 (39)	131 (22.5)
GENDER				
Male	65 (49.6)	51 (44)	97 (47.8)	57 (43.5)
Female	66 (50.4)	65 (56)	106 (52.2)	74 (56.5)
EDUCATION**				
Less than 12 years	15 (11.5)	46 (39.7)	122 (60.1)	27 (20.6)
12 years	30 (22.9)	28 (24.1)	44 (21.7)	36 (27.5)
Greater than 12 years	86 (65.6)	42 (36.2)	37 (18.2)	68 (51.9)
NUMBER OF YEARS IN THE U.S.*				
Less than 5	6 (4.6)	0	19 (9.4)	7 (5.3)
5-10	6 (4.6)	5 (4.3)	15 (7.4)	14 (10.7)
11-20	13 (9.9)	16 (13.8)	76 (37.4)	54 (41.2)
Greater than 20	106 (80.9)	95 (81.9)	93 (45.8)	56 (42.7)
INCOME TO NEEDS RATIO (2001)*				
At or below 100% poverty level	20 (15.3)	42 (36.2)	104 (51.2)	42 (32.1)
Greater than 100% but not exceeding 200%	12 (9.2)	13 (11.2)	35 (17.2)	18 (13.7)
Greater than 200%	99 (75.6)	61 (52.6)	64 (31.6)	71 (54.2)
AGE**	39.46 (12.01)	42.59 (14.11)	33.11 (12.03)	29.73 (8.83)
AGE AT IMMIGRATION**				
Less than 12 years	100 (76.3)	85 (73.3)	98 (48.3)	82 (62.6)
13 to 17 years	31 (23.7)	31 (26.7)	105 (51.7)	49 (37.4)

Predictor & outcome variables by age at immigration.

Table 5 shows the results of differences in predictor and outcome variables by age at immigration as calculated by chi square and t-test. Variables found to be significantly different between younger migrants (those migrating by age 12) and older migrants (those migrating between ages 13 and 17) include acculturation, acculturative stress, perceived social status, and discrimination. Older migrants reported lower levels of acculturation (mean= -3.59) compared to younger migrants (mean = .295). Similarly, older migrants reported higher mean levels of acculturative stress (2.54 versus 1.66). Older migrants also indicated an overall lower perceived social status; on a twenty point scale their mean average was about one point lower than that of younger migrants. Younger migrants reported a higher mean incidence of discrimination (15.32 versus 13.75).

Table 5

Descriptive Results of Predictor and Outcome Variables by Age at Immigration

Predictor	Mean (SD)	Range	Mean (SD)	Range
	Less than 12 years old		13 to 17 years old	
Acculturation*	.295 (3.43)	-9 to 9	-3.59 (2.92)	-9 to 8
Acc. Stress*	1.66 (1.31)	0 to 8	2.54 (1.71)	0 to 8
Subjective Social Status*	12.74 (3.22)	2 to 20	11.89 (3.87)	3 to 20
Discrimination*	15.32 (6.02)	4 to 39	13.75 (5.81)	5 to 32
Ethnic Social Identity	9.92 (1.87)	3 to 12	9.92 (2.03)	3 to 12
Dissonant Acculturation	6.59 (2.06)	5 to 15	6.27 (1.93)	5 to 15
Family Cohesion	35.65 (5.54)	10 to 40	36.42 (5.12)	10 to 40

Outcome	Mean (SD)/N(%)	Range	Mean (SD)/N(%)	Range
	Less than 12 years old		13 to 17 years old	
Depressive Symptoms	3.79 (2.06)	0 to 26	3.24 (7.06)	0 to 28
Endorsed for Major Depressive Episode (12 Months)	32 (8.8)		23 (10.6)	

* .05 Significance

Research Question 1

The following section presents the results of question one along with an overview of the procedures conducted to answer research question number one. A recursive regression analysis was conducted to answer the first research question.

Bivariate correlations.

The first step of the recursive regression analysis is conducting bivariate correlations to assess for multicollinearity. Table 6 presents the Pearson correlation values among the predictor and outcome variables needed to answer all research questions. The results of this correlational analysis are reported individually following the table.

Table 6

Pearson Correlations Among Predictor Variables & Between Predictor and Outcome Variables

	ACC	ACC STRS	SSS	DISC	ESI	DA	FC
Acculturation	1.00	-.367**	.168**	.198**	-.110**	.077	-.107*
Acculturative Stress		1.00	-.158**	.168**	.077	.089*	-.008
Subjective Social Status			1.00	-.044	.053	-.130**	.123**
Discrimination				1.00	-.037	.289**	-.209**
Ethnic Social Identity					1.00	-.126**	.188**
Dissonant Acculturation						1.00	-.575**
Family Cohesion							1.00
Depressive Symptoms	.018	.066	-.105*	-.092*	-.075	-.130	-.170**

** Correlation is significant at .01 level (2-tailed)

* Correlation is significant at .05 level (2-tailed)

Acculturation.

Acculturation was significantly correlated with acculturative stress (r = -.367, p<.01), subjective social status (r = .168, p<.01), discrimination (r = .198, p<.01), ethnic social identity (r = .110, p<.01) and family cohesion (r = -.107, p<.05). Those reporting higher levels of acculturation reported lower levels of acculturative stress, ethnic social identity, and family cohesion. Conversely, with higher levels of acculturation also reported a higher subjective social status and a higher incidence of discrimination. Acculturation was not significantly correlated with symptoms of depression.

Acculturative stress.

Acculturative stress was significantly related to acculturation (r = -.367, p<.01), subjective social status (r = -.158, p<.01), discrimination (r = .168, r <.01), and dissonant acculturation (r = .089, p<.05). Those reporting higher levels of acculturative stress reported lower levels of acculturation and a lower subjective social status. Conversely, those reporting higher acculturative stress also reported an increased incidence of discrimination and greater

dissonant acculturation. Acculturative stress was not significantly correlated with symptoms of depression.

Subjective social status.

Subjective social status was significantly related to acculturation (r = .168, p<.01), acculturative stress (r = .158, p<.01), dissonant acculturation (r = -.130, p<.01) and family cohesion (r = .123, p<.01). Those reporting a higher subjective social status also reported lower levels of acculturative stress, dissonant acculturation and family cohesion. Respondents who had higher acculturation and higher family cohesion also tended to have a higher subjective social status. Subjective social status was significantly correlated with symptoms of depression (r = -.105, p<.05) such that those reporting a higher subjective social status had fewer depressive symptoms.

Discrimination.

Discrimination was significantly related to acculturation (r = .198, p<.01), acculturative stress (r = .168, p<.01), dissonant acculturation (r = .289, p<.01) and family cohesion (r = -.209, p<.01). Those reporting a higher incidence of discrimination also reported higher acculturation, increased acculturative stress and greater dissonant acculturation. Respondents who had levels of family cohesion also tended to have a lower incidence of discrimination. Discrimination was significantly correlated with symptoms of depression (r = -.092, p<.05) such that those reporting higher incidence of discrimination had fewer depressive symptoms.

Ethnic social identity.

Ethnic social identity was significantly related to acculturation (r = -.110, p<.01), dissonant acculturation (r = -.126, p<.01) and family cohesion (r = .188, p<.01). Those respondents strongly identifying with their ethnic group also reported lower acculturation, and

less dissonant acculturation. Conversely, respondents who strongly identified with their ethnic group also reported higher levels of family cohesion. Ethnic social identity was not significantly correlated with symptoms of depression.

Dissonant acculturation.

Dissonant acculturation was significantly related to acculturative stress ($r = .089$, $p<.05$), subjective social status ($r = -.130$, $p<.01$), discrimination ($r = .289$, $p<.01$), ethnic social identity ($r = -.126$, $p<.01$) and family cohesion ($r = -.575$, $p<.01$). Greater dissonant acculturation is associated with increased acculturative stress, and a higher incidence of discrimination. It was also associated with a lower subjective social status, weaker ethnic social identity, and lower family cohesion. Dissonant acculturation was not significantly correlated with symptoms of depression.

Family cohesion.

Family cohesion was significantly related to acculturation ($r = -.107$, $p<.05$), subjective social status ($r = .123$, $p<.01$), discrimination ($r = -.209$, $p<.01$), ethnic social identity ($r = .188$, $p<.01$) and dissonant acculturation ($r = -.575$, $p<.01$). Greater family cohesion was associated with lower acculturation, a lower incidence of discrimination and less dissonant acculturation. It is also associated with a higher subjective social status and a stronger ethnic social identity. Dissonant acculturation was significantly correlated with symptoms of depression ($r = -.170$, $p<.01$) such that those reporting higher family cohesion had fewer depressive symptoms.

Recursive Regression Analysis.

The second step of recursive regression analysis is specifying the variables to be tested and proposing a relationship among those variables. Figure 2 displays the hypothesized relationships among the variables used in this study.

Figure 2
Hypothesized Relationships among Variables in Study
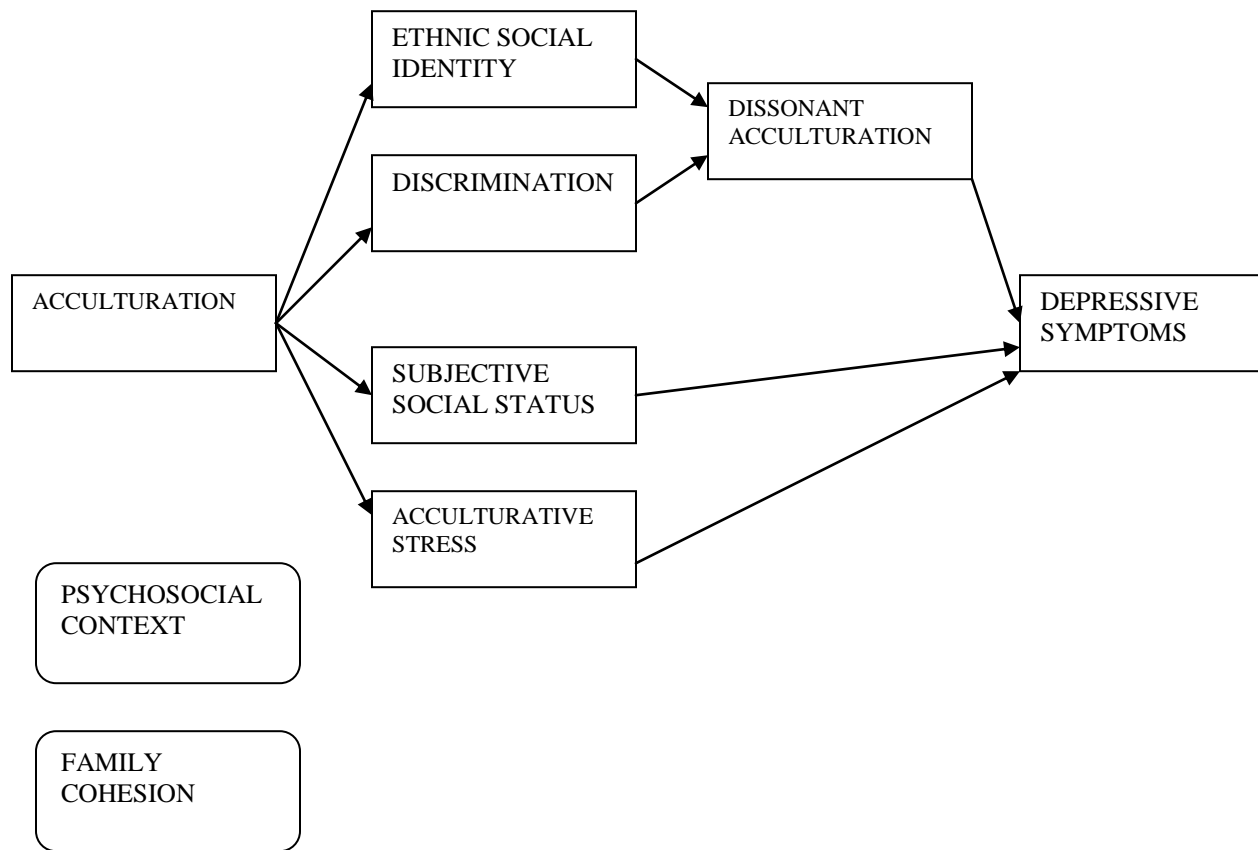
Beginning with the primary dependent variable (depressive symptoms), the affect of all

exogenous and endogenous variables in the model is calculated. This procedure is repeated in

turn for each endogenous variable in the model; those endogenous variables that are most closely

linked to the primary dependent variable undergo calculation first and those furthest away are

calculated last. In the hypothesized relationship for this study, changes in ethnic social identity,

discrimination, perceived social status, and acculturative stress were hypothesized to occur at the

same point in time. Calculation of direct and indirect effects required that these elements be put

into the model successively instead of simultaneously. Using the correlational coefficients to

direct decision making, each variable was put into the model as a dependent variable based upon

the strength of its correlation with the presumed cause – acculturation. The variable with the

weakest correlation (ethnic social identity) was entered into the model first, while acculturative

stress was entered last. Psychosocial context variables, family cohesion, and acculturation which

is an exogenous variable, contributed to model specificity at every level.

Results for Research Question 1.

Table 7 displays the results of the recursive regression analyses which will be used in

discussing all research questions. Figure 3 depicts the final path analysis including the

significant and non significant predicted paths as well as significant paths that were not

predicted. Appendix B provides a detailed path model with standardized coefficients for each

path.

Table 7

Recursive Regression Results

	Standardized Regression Coefficients					
	Acculturative Stress	Subjective Social Status	Discrimination	Ethnic Social Identity	Dissonant Acculturation	Symptoms of Depression
Acculturation	-.301***	.067	.258***	-.095'	0.021	0.044
Acculturative Stress		-.062	.280***	.060	.085*	.094*
Subjective Social Status			-.030	.053	-0.038	-0.082'
Discrimination				.025	.160***	-0.166
Ethnic Social Identity					-0.003	-0.028
Dissonant Acculturation						.180***
Family Cohesion	-.042	.098*	-.170***	.169***	-.528***	-0.035
Gender	-.075'	.031	-.075'	-0.007	.071*	.132**
Education	-.051	.150**	.115*	0.035	.083*	-0.004
Years in U.S.	-.077	-.071	-.018	-0.085	-0.017	-0.043
Income	-.049	.192***	.051	-0.036	-0.056	-0.002
Age	-.104'	.117*	-.021	0.059	0.053	0.102'
Cuban	-.035	.002	-.149**	0.065	0.031	0.06
Puerto Rican	-.066	-.056	.084'	0.118	-0.028	0.092'
Other Hispanic	-.034	-.052	-.023	-0.135	0.02	0.039
adjusted R2	.174***	.125***	.171***	.067***	.357***	.068***
error	0.826	0.875	0.829	0.933	0.643	0.932

'<.10

*<.05

**<.01

***<.001

Figure 3
Significance & Prediction: Results of Final Path Analysis
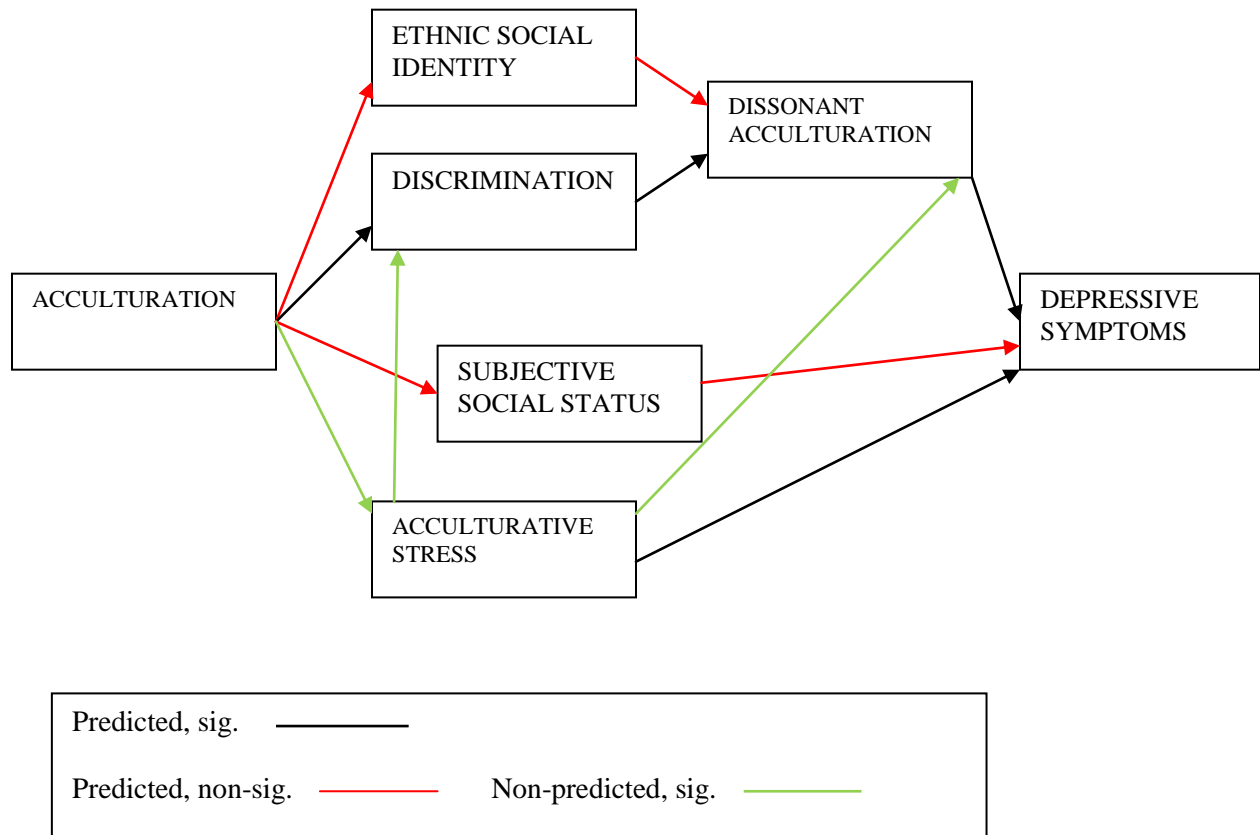
Legend:
- Predicted, sig. ———
- Predicted, non-sig. ——— (red)   Non-predicted, sig. ——— (green)

Boxes: ETHNIC SOCIAL IDENTITY, DISSONANT ACCULTURATION, DISCRIMINATION, ACCULTURATION, SUBJECTIVE SOCIAL STATUS, DEPRESSIVE SYMPTOMS, ACCULTURATIVE STRESS

Research Question 1.

What is the relationship among acculturation, acculturative stress, dissonant acculturation, social identity, subjective social status, and discrimination in a sample of Hispanic immigrants that migrated by age 17?

Dissonant acculturation.

A significant relationship was found between acculturative stress ($\beta = .085$, $p<.05$), discrimination ($\beta = .160$, $p<.001$), and dissonant acculturation. Higher levels of acculturative stress and discrimination are both associated with greater dissonant acculturation.

Ethnic social identity.

Ethnic social identity was found to be related to acculturation ($\beta = -.095$, $p<.10$). The results indicate that as acculturation increases, ethnic social identification decreases.

Discrimination.

A significant relationship was found between acculturation ($\beta = .258$, $p<.001$), acculturative stress ($\beta = .280$, $p<.001$), and discrimination. Reported levels of discrimination were higher among those with high acculturation and high acculturative stress

Subjective social status.

Subjective social status was not statistically significantly related to any other cultural adaptation variables.

Acculturative stress.

Acculturative stress was found to be related to acculturation ($\beta = -.301$), $P<.01$). Higher levels of acculturative stress were found among those with low acculturation.

Hypothesis 1a. As acculturation increases, acculturative stress will increase.

The results indicate that there is a statistically significant relationship between acculturation and acculturative stress ($\beta = -.301$, p<.001), however the directionality of the relationship between acculturation and acculturative stress was not expected. As acculturation increased, acculturative stress decreased.

Hypothesis 1b. As acculturation increases, subjective social status will decrease.

The results indicate that there is not a statistically significant relationship between acculturation and subjective social status.

Hypothesis 1c. As acculturation increases, the incidence of discrimination will

increase.

The results indicate that there is a statistically significant relationship between acculturation and discrimination ($\beta = .258$, p<.001) in the predicted direction. As acculturation increases, the incidence of discrimination also increases.

Hypothesis 1d. As acculturation increases, the in-group affiliations (ethnic social

identity) will decrease.

While the results approached significance, the relationship between acculturation and ethnic social identity ($\beta = -.095$, p<.10) was not statistically significant.

Hypothesis 1e. As in-group affiliations (ethnic social identity) will decrease,

dissonant acculturation will increase.

The results indicate that there is not a statistically significant relationship between ethnic social identity and dissonant acculturation.

Hypothesis 1f. As the frequency of discrimination increases, dissonant acculturation will increase.

The results indicate that there is a statistically significant relationship between discrimination and dissonant acculturation ($\beta = .160$, p<.001) in the predicted direction. As the frequency of discrimination increases, dissonant acculturation also increases.

Research Question 2

Like question one, research question two was answered using recursive regression. The previous section presents an overview of the procedures conducted to answer research question two. The following section presents the findings regarding question two.

Results for Research Question 2.

For a detailed overview of the variables or a graphic representation of the findings discussed below, please refer to Table 7 and Figure 3.

Symptoms of depression.

A significant relationship was found between acculturative stress ($\beta = .094$, p<.05), dissonant acculturation ($\beta = .180$, p<.001), gender ($\beta = .132$, p<.001), age ($\beta = .102$, p<.10) and among Puerto Ricans ($\beta = .092$, p<.10) and symptoms of depression. Higher levels of acculturative stress and greater dissonant acculturation are both associated with a higher number of depressive symptoms. Additionally, females are likely to have more symptoms than men, and Puerto Ricans are likely to have more symptoms when compared to Mexicans. Also, symptom levels increase with age.

Research Question 2.

What effects do psychosocial context and cultural adaptation have on depressive symptoms in a sample of Hispanic immigrants that migrated by age 17?

Hypothesis 2a. Poorer immigrants will experience more symptoms of depressions.

The results indicate that there is not a statistically significant relationship between income and symptoms of depression.

Hypothesis 2b. Immigrants with less education will experience more symptoms of depression.

The results indicate that there is not a statistically significant relationship between education and symptoms of depression.

Hypothesis 2c. Older immigrants will experience more symptoms of depression.

The results indicate that there is a statistically significant relationship between age and symptoms of depression ($\beta = .102$, $p<.10$) in the predicted direction. As age increases, so do symptoms of depression.

Hypothesis 2d. Females will suffer from more depressive symptoms than males.

The results indicate that there is a statistically significant relationship between gender and symptoms of depression ($\beta = .132$, $p<.01$), as predicted. Females have more symptoms of depression than males.

Hypothesis 2e. As dissonant acculturation increases, the number of depressive symptoms will increase.

The results indicate that there is a statistically significant relationship between dissonant acculturation and symptoms of depression ($\beta = .180$, $p<.001$) in the predicted direction. As dissonant acculturation increases, symptoms of depression also increase.

Hypothesis 2f. As subjective social status decreases, the number of depressive symptoms will increase.

While the results approached significance, the relationship between subjective social status and symptoms of depression (β = .082, p<.10) was not statistically significant.

Hypothesis 2g. As acculturative stress increases, the number of depressive symptoms will increase.

The results indicate that there is a statistically significant relationship between acculturative stress and symptoms of depression (β = .094, p<.05) in the predicted direction. As acculturative stress increases, so do symptoms of depression.

Research Question 3

Like questions one and two, research question three was answered using recursive regression. See the section on Research Question One for a presentation on the procedures conducted to answer research question three. The following section presents the findings regarding question three.

Results for Research Question 3.

For a detailed overview of the variables or a graphic representation of the findings discussed below, please refer to Table 7 and Figure 3.

Family cohesion and symptoms of depression.

A significant relationship was not found to exist between family cohesion and depressive symptoms (β = -.035, p>.05). However, other significant, non-hypothesized relationships were found and are discussed briefly below.

Family cohesion and other variables.

A significant relationship was found between dissonant acculturation (β = -.528, p<.001), ethnic social identity (β = .169, p<.001), discrimination (β = -.170, p<.001), and subjective social status (β = .098, p<.05).

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Research Question 3.

What effect does family cohesion have on the relationship between cultural adaptation and depressive symptoms in a sample of Hispanic immigrants that migrated by age 17?

Hypothesis 3. As family cohesion increases, depressive symptoms will decrease.

The results indicate that there is not a statistically significant relationship between family cohesion and symptoms of depression ($\beta = -.035$), thus indicating a family cohesion is not a potential moderator of depressive symptoms in the model.

Binomial Logistic Regression Analysis

In order to examine the clinical significance of the variables in the model, a binomial logistic regression was conducted. This test does not answer a specific research question; rather it provides support for or against the variables in assessing depression. For this analysis, all psychosocial variables, cultural adaptation variables, and family cohesion (previously a moderator) were entered simultaneously as independent variables. The outcome for this analysis was the diagnostic variable major depressive episode – 12 month prevalence. Respondents either endorsed the diagnosis or did not endorse the diagnosis.

Results.

Table 9 below provides an overview of the findings. Subjective social status ($\beta = -.123$, $p<.01$) and gender ($\beta = 1.085$, $p<.01$) were significantly related to a diagnosis of major depressive episode in the past 12 months.

Table 8	+ Less than 12 years = reference category
Binomial Logistic Regression Results	** <.01 Significance

Model Summary	
Cox & Snell R Squared	.084
Nagelkerke R Squared	.185
Hosmer & Lemeshow Goodness of Fit Test	.387

	B
Acculturation	-.043
Acc. Stress	.164
Subjective Social Status	-.123**
Discrimination	.033
Ethnic Social Identity	-.065
Dissonant Acculturation	.104
Family Cohesion	-.043
Gender	1.085**
Education (12 yrs)+	-.035
Education (>12 yrs)+	.368
Years in U.S.	-.249
Income	-.078
Age	.023
Cuban	.801
Puerto Rican	.256
Other Hispanic	-.117

Chi-square testing was conducted on the two significant variables in order to confirm within-group differences. The median value of subjective social status (M = 13) was used to divide the variable into two groups for testing. Tables 10 and 11 display the results for the Chi-square tests. Results confirm that those with a lower subjective social status endorse a diagnosis of major depressive episode more frequently than those with a higher subjective social status. Similarly, females report a higher frequency of major depressive episode than males.

Table 9

Low & High Subjective Social Status by Major Depressive Episode (12 month prevalence)

		Not Endorsed	Endorsed	TOTAL
Subjective Social Status	Low	280	42	322
	High	234	12	246
	TOTAL	514	54	568

	Value
Pearson Chi-Square	10.81***
Cramer's V	.138***

*** .001 Significance

Table 10

Gender by Major Depressive Episode (12 month prevalence)

		Not Endorsed	Endorsed	TOTAL
Gender	Male	254	16	270
	Female	272	39	311
	TOTAL	526	55	581

	Value
Pearson Chi-Square	7.38**
Cramer's V	.113**

** .01 Significance

Bivariate Symptom Prediction Analysis

Building upon the results of the recursive regression analysis, bivariate analyses were conducted to detect patterns between the specific symptoms and the significant cultural adaptation predictors in the model. Each of the thirty-one symptoms was individually predicted by one of four cultural adaptation variables (acculturation, discrimination, acculturative stress, and dissonant acculturation) in a series of 124 separate binomial logistic regressions. The intent of these tests was to detect relationships between the predictors and the symptoms as a possible alternative explanation for the explained increase in symptoms attributed to the recursive

regression results. Table 11 displays the significant results of these tests (p. <.05 level) and

indicates the likelihood of the relationship as represented by a plus (+) sign or a minus (-) sign.

Odds ratios for these findings are found in Appendix C.

Table 11
Bivariate Symptom Prediction - Odds of Symptom for Significant Predictors

	ACC	DISC	ACC STRS	DISS ACC
Smaller appetite?				
Larger appetite?				
Gain weight?	+		-	
Lose weight?				
Trouble sleeping?	-			
Sleep a lot?				
Trouble sleeping AND not feel tired?				
Feel tired or low energy?				
Feel a lot of energy?				
Feel lethargic?				
Restless or jittery?				
Thoughts come slowly/mixed up?	-			
Thoughts race?		+		
Difficulty concentrating?				
Difficulty making decisions?				
Lose self-confidence?				+
Low self-esteem?				
Feel worthless?			-	
Feel guilty?				
Irritable, grouchy or in a bad mood?				
Nervous or anxious?				
Attacks of fear or panic?		+		
Think about death?				
Think that it would be better if you were dead?				
Think about committing suicide?				
Make a suicide plan?				
Attempt suicide?				
Difficulty coping?				
Rather be alone?			-	
Feel less talkative?				
Cry often?				

Bivariate Results

As seen in Table 11, acculturation significantly predicted weight gain, difficulty sleeping,

and difficulty thinking. Acculturation was associated with greater odds of weight gain; while

acculturation was associated with lesser odds of difficulty sleeping and difficulty thinking.

Discrimination significantly predicted racing thoughts and attacks of fear or panic. Discrimination was independently associated with greater odds of both symptoms – racing thoughts and attacks of fear or panic. Acculturative stress significantly predicted weight gain, feelings of worthlessness, and the desire to be alone. In each instance, acculturative stress reduces the odds of the predicted symptom. Finally, dissonant acculturation predicted one symptom – loss of self-confidence. Dissonant acculturation is associated with a greater likelihood of the occurrence of loss of self-confidence.

Chapter 5 – Discussion & Implications

This chapter provides a discussion of the results presented in chapter four. As a result of synthesizing the specific findings of the analyses, two primary conclusions emerged. These major conclusions are presented in the first part of this chapter. Following this, a discussion of the sample characteristics and the recursive regression findings are presented. The recursive regression findings include a discussion of the findings as they flow from the path analysis. Next, a discussion of the clinical significance of these results is discussed, and finally a discussion of the symptom analysis is presented. The limitations of this study are then discussed, followed by implications of the study's findings for research and for social work practice. The chapter closes with remarks summarizing the study's findings and contributions.

Major Conclusions

The findings from this study model the cultural adaptation process on depressive symptoms, while examining the moderating effects of family cohesion. This process is presumed to begin with acculturation, and continues with changes in subjective social status, acts of discrimination, changes in ethnic social identity and acculturative stress, which lead to dissonant acculturation and ultimately depressive symptoms. The results indicate that much of the model is an accurate representation of how the specified constructs are associated. Additionally, two themes are clear in the findings from this study – the importance of family and the risk associated with stress in the adaptation process. These themes are discussed below.

Importance of family.

Dissonant acculturation results in family cultural conflict arising out of differences in acculturation between the immigrant parent and child. It is clear that dissonant acculturation can influence the development of depressive symptoms in Hispanic immigrants. Given this sample's age at immigration, it is likely that many of the participants acculturated at a much quicker pace than did their parents. The consequences of this would be conflict with family, specifically regarding issues pertaining to cultural values and the adaptation of beliefs believed to be incongruent with those of the immigrant parents. The consequences of this family conflict can be changes in mood, which are reflected as symptoms of depression in this study. The potential harm caused by dissonant acculturation was offset by high levels of family cohesion. This is not to say that dissonant acculturation did not exist in families with high family cohesion. Rather, high family cohesion was associated with low levels of dissonant acculturation. Still, family cohesion and dissonant acculturation were not significant predictors of a diagnosis of major depressive episode in the past twelve months. This discrepancy is at least partly attributable to the model, which attributes endogenous and exogenous characteristics to independent variables, while the binomial logistic regression simply assumes all independent variables occur simultaneously. More research is needed to describe why this particular difference exists. It is possible that dissonant acculturation may account for a particular set of symptoms of depression, but may not account for the entire spectrum of symptoms, thus limiting its ability to account for a diagnosis. Furthermore, the r squared value for depressive symptoms (.068) suggests that there are far more constructs unaccounted for in explaining symptom count than are represented in the model.

Risk associated with stress in the adaptation process.

Acculturative stress had a direct impact on both depressive symptoms and dissonant acculturation. While the impact on depressive symptoms was predicted, the relationship between dissonant acculturation and acculturative stress was unexpected. Previous studies have demonstrated that one possible outcome from the stress-response is the development of symptoms of depression (Hovey & King, 1996). This study affirms those findings in Hispanic immigrants that migrate at a young age. Additionally, an unforeseen association between discrimination and acculturative stress may explain part of the stress of acculturative stress: hypothesized to occur simultaneously as a result of acculturation, an association was found between acculturative stress and discrimination. While this association is graphically represented as a straight line emanating from acculturative stress and ending at discrimination (see Figure 3), this representation is the result of the analysis. It is likely that the relationship between acculturative stress and discrimination is more complex, possibly co-varying. Discrimination also predicted dissonant acculturation, as hypothesized. Further exploration is needed to examine the relationship among discrimination, acculturative stress and dissonant acculturation. Similar to other variables, acculturative stress and discrimination were not significant as predictors of major depressive episode. The discrepancy that exists between predicting depressive symptoms and depression deserves further examination and may be partly attributable to differences in statistical technique and the differences in the outcome variable; one variable is a count of symptoms and the other is a diagnosis. However, the great divergence in the results merits further study.

Discussion of Findings

Findings from this study suggest that family characteristics, such as dissonant acculturation and family cohesion, along with individual traits like acculturative stress, acculturation, and experiences with discrimination have the biggest impact on the development of depressive symptoms in Hispanic immigrants who came to the U.S. as minors. While the four ethnic groups varied by age, time in the U.S., and socioeconomic status, these factors proved to have almost no impact. Furthermore, the model's ability to predict a diagnosis of major depressive episode or a symptomatic pattern appears to be limited. Specific findings are discussed below.

Sample Characteristics.

The analysis revealed that the Cuban (39 years) and Puerto Rican (43 years) samples were significantly older than the Mexican (33 years) and other Hispanic (30 years) ethnic groups. This pattern was also seen in the respondents' time in the U.S., with the majority of both Cuban (81%) and Puerto Rican (82%) participants residing in the U.S. for longer than 20 years. In contrast, only 46% of Mexicans and 43% of other Hispanics in the sample had resided in the U.S. longer than 20 years. These results are consistent with other studies in that Mexicans tend to be younger than Cubans and Puerto Ricans on average, and have less time in the U.S. (Dockterman, 2011).

Socioeconomic characteristics revealed that Cubans had both income and educational advantages when compared to the other ethnic groups. They were educated beyond the twelfth year at a much higher rate than the other ethnic groups, and their income exceed 200% of the poverty level at a higher rate. These results affirmed the findings of the American Community Survey (2009). However, contrasting those same findings, Mexicans and Puerto Ricans

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experienced a much higher poverty rate than U.S. estimates (51% vs. 24% for Mexicans; 36% vs. 24% for Puerto Ricans). The socioeconomic advantage held by the Cuban ethnic group has been seen in previous studies of Cuban's residing in the U.S. (Boswell, 2002). Cubans tend to have a higher income and a higher education than other Hispanic groups.

Almost three-quarters of Cubans, Puerto Ricans and other Hispanics sampled entered the U.S. by the age of twelve. This is in stark contrast to the Mexican sample, in which almost half entered by the age of twelve. The literature does not clearly address this phenomenon. Clearly, some advantage exists to bringing children into the U.S. at a younger age. Since many immigrants move for economic purposes (Borjas, 1989), bringing children while they are young and able to integrate into American schools earlier may be seen as advantageous. While this advantage exists for Mexican families, entering the U.S. may be riskier or more expensive causing them to wait longer.

Ethnic differences on discrimination.

While most of the findings in this study were easily explained regardless of whether they were predicted, I can offer only speculation with regard to one particular finding. The results indicate that Cubans experience less discrimination than do Mexicans. Education appears to exacerbate the effects of discrimination, though ethnicity is the strongest predictor among psychosocial context variables. These results indicate that Cubans experience less discrimination than Mexicans, but as education increases so does the incidence of discrimination. Given that the Cuban sample was more highly educated and had more income than did the other three samples, including the Mexican group, this may explain the results. However, further research needs to be conducted on differences in geographic distribution of the samples since one report indicates that Cubans tend to be highly concentrated in the south (Therrien & Ramirez, 2001)

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which may explain a decrease in discrimination over time as locals adjust to their presence. Issues of skin-tone may also attribute to discrimination and warrant investigation as one study points out, lighter-skinned Latinos tend to have advantages over darker-skinned Latinos (Hunter, 2007).

Dissonant Acculturation, Family Cohesion, & Symptoms of Depression.

As predicted, results indicate that dissonant acculturation is predictive of the number of depressive symptoms. Family members that acculturate at differing rates and fall into cultural conflict are likely to develop more symptoms of depression as a result. This is especially true for females, who, consistent with prior research (Golding & Karno, 1988; Hiott et al., 2006; Portes & Rumbaut, 2001) are more likely to exhibit symptoms of depression than males. Dissonant acculturation was also higher among females with a higher education. Results also indicate that family cohesion has a strong moderating effect on dissonant acculturation. This effect indicates that higher levels of family cohesion reduce the effect of dissonant acculturation. Therefore, while dissonant acculturation is theorized to occur in immigrant families by the acculturation gap-distress hypothesis (Szapocznik & Kurtines, 1993), higher family cohesion will reduce the number of depressive symptoms occurring as a result.

While the results demonstrate that family cohesion reduces dissonant acculturation, these are two opposing forces. Immigrant children adapt to their surroundings much quicker than do their parents. The result often times is family conflict, the antithesis to cohesion. Furthermore, as children adopt the customs, values and beliefs of the host society, they may begin to view their parents' culture as alien, ignorant or naïve (Szapocznik & Truss 1978). Family cohesion must therefore exist at levels which can overcome these potential value discrepancies.

Alternatively, parents may wish that their child adapt the customs and beliefs of the host society negating the family conflict; however little evidence exists to support this supposition.

Acculturation, Stress, Dissonant Acculturation, & Depressive Symptoms.

The hypothesized relationship between acculturation and acculturative stress was shown to exist, though not in the hypothesized direction. Immigrants with greater acculturation actually demonstrated less stress than those with lower acculturation, thus as acculturation increase, stress decreases. This indicates that as acculturation occurs, immigrants develop some means of coping with acculturative stress. This is important because other findings show that as acculturative stress increases, so does dissonant acculturation and the number of depressive symptoms. While the impact of acculturative stress on depressive symptoms was anticipated (Hovey & King, 1996), my analysis revealed an unforeseen direct impact of stress on dissonant acculturation as well.

While this cannot be stated for sure with this data, these results point to a time effect; as one acculturates (and more time passes) the level of acculturative stress goes down. If this is so, then immigrants are learning to cope with a new culture and incorporating that culture into their daily existence causing themselves less stress. This is important since acculturative stress has a direct impact on both dissonant acculturation and depressive symptoms. As one acculturates and stress levels decrease, the impact of stress on dissonant acculturation and depressive symptoms is likely to subside.

Acculturation, Stress, Discrimination, Dissonant Acculturation & Family Cohesion.

Acculturation predicted the occurrence of discrimination as hypothesized. The results also demonstrate a strong, positive association between acculturative stress and discrimination, which indicates that acculturative stress contributes to feelings of discrimination. Additionally,

those with a higher education reported more discrimination than did respondents with lower levels of education. Also, Cubans reported significantly less discrimination than did Mexicans. These two findings seem to contradict one another since Cubans tend to have a higher level of education. Feelings of discrimination were moderated by family cohesion. However, feelings of discrimination contributed to the development of dissonant acculturation. Those with a higher incidence of discrimination and lower family cohesion experienced higher dissonant acculturation.

This is an example of the importance of family in the immigrant context. While family cohesion moderated the effects of discrimination, when that effect was lacking, discrimination contributed to dissonant acculturation, a harmful process which contributes to developing depressive symptoms. Throughout history, discrimination has been the constant companion of the immigrant. It affects the family and the mental health of the immigrant in the cultural adaptation process. By contributing to dissonant acculturation and possibly co-varying with acculturative stress, experiences with discrimination seem to worsen the acculturation gap, though further research is needed to know exactly why.

Subjective Social Status.

Subjective social status was not predicted by acculturation as hypothesized. Furthermore, subjective social status was only able to marginally predict changes in depressive symptoms. In effect, subjective social status had little impact in the model. Consistent with prior research efforts, subjective social status was predicted by objective measures of socioeconomic status including income and education (Adler et al., 2000). Additionally, the current study found that older individuals tended to have a higher subjective social status. This finding is not surprising since financial security often comes with age. Family cohesion was also associated with higher

subjective social status. This may be due to a financial cushion provided by the family; however more research is needed to ascertain exactly what effect family cohesion has on subjective social status.

Ethnic Social Identity.

Ethnic social identity provided no significant impact on dissonant acculturation contrary to expectations. Thus, ethic social identity plays little role in the hypothesized model. However, family cohesion predicted ethnic social identity. Respondents with high levels of family cohesion were more likely to identify with their ethnic group than those with lower family cohesion. This result speaks to the family's role in identity development, even in the immigrant context where ethnic identities may prove to be harmful.

Discussion of Clinical Significance.

To examine the clinical significance of variables in the model a binomial logistic regression was conducted. Unlike the recursive regression analysis, the binomial logistic regression used a diagnostic outcome variable (major depressive episode – 12 month prevalence) and did not model the variables using endogenous and exogenous characteristics. Rather all the variables were entered simultaneously into the logistic regression. The results indicated that only two of the variables were predictive of major depressive episode: gender and subjective social status. Consistent with previous studies (Nolen-Hoeksema, 2001; Weissman & Klerman, 1977) females were more likely to suffer from depression than males. This is also consistent with the recursive regression analysis which found females suffered from more symptoms of depression than did men.

There was great divergence in the recursive regression results and the logistic regression results. The only consistent predictor among both tests was gender.   While subjective social

status was found to be highly predictive of major depressive episodes and it approached significance in the recursive regression for depressive symptoms, this was the only other variable where the tests came close. However, the directionality of the two subjective social status regression coefficients was opposing, indicating that, while they may have had the ability to predict, they were predicting an opposite effect. Chi-square testing was conducted following the binomial logistic regression to affirm the significance of gender and subjective social status independent of other variables. The median value of subjective social status was used to split the variable into "high" and "low" categories. The Chi-square results confirm that females and those with low subjective social status have a higher 12-month prevalence of major depressive episodes. Further examination of the impact of subjective social status on a diagnosis of depression is warranted.

Ultimately the model was unable to predict a diagnosis of major depressive episode (12 month prevalence), a complex psychiatric condition which is patently different from the symptom count that was earlier predicted. In order to assign a diagnosis of major depressive episode, one needs to determine that some specific symptoms are present for a minimum period of time, that other conditions (such as bereavement or medical causes) are not responsible for the symptoms, and clinically significant impairment must be observed (American Psychiatric Association, 2000). Thus, while the model does appear to have some usefulness in detecting the more straight-forward psychological phenomenon of one's having a depressed mood, its utility in predicting the psychiatric condition "depressive episode" is questionable at best.

Symptom pattern prediction.

In an attempt to refute the hypothesis that the model predicted greater symptom counts, additional analyses were conducted to detect patterns of symptoms expected among the four

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statistically significant predictors from the cultural adaptation model. That is, perhaps a specific symptom or set of symptoms causes the increases depressive symptoms attributed to the cultural adaptation model. An empirical test to determine if a pattern amongst the symptoms of depression indicated that no distinct pattern of symptoms were responsible for the increasing symptom counts. Indeed, my conclusion is that the symptoms appear randomly in the sample and that the model, as originally hypothesized, predicts increases in depressive symptoms.

These results are revealing in two ways. First, there doesn't appear to be a set of specific symptoms that are predicted by the cultural adaptation process, yet many of the symptoms may have been expected when exploring the phenomena at an individual level; for example, those experiencing discrimination are more likely to report attacks of fear or panic. However, in considering the larger issue of the associations between all four predictors (acculturation, discrimination, acculturative stress, & dissonant acculturation) and all thirty-two symptoms, no symptomatic pattern emerges. Second, the cultural adaptation model is able to predict the number of depressive symptoms, but it is unable to identify a specific set of symptoms that may be attributable to cultural adaptation. This limitation means that the model as currently defined can predict depressed mood as indicated by number of symptoms, but cannot discern the symptomatology that accompanies major depressive illness in the group examined in this study. Without this capacity, the model cannot evaluate which symptom groups are more prevalent in Hispanic immigrants that migrate as minors. While the cultural adaptation model can predict number of symptoms of depression, it appears the model cannot predict depressive diagnoses as defined by widely accepted psychiatric standards.

The three analyses reveal that the selected variables are able to predict number of symptoms associated with depression, but are unable to identify a specific set of symptoms or to

reach a diagnosis of major depressive episode. This means that cultural adaptation is a psychologically distressing process that is associated with symptoms of depression; however it may not itself cause depression. Instead, cultural adaptation imbues a sense of psychological suffering in those undertaking the process, which is manifest through symptoms of depression. Therefore, these symptoms may reveal how the stressful process of cultural adaptation plays out in young Hispanic immigrants. In essence, what may be occurring is that these individuals are demonstrating an emotional response to a highly distressful situation. However, that stress-response may not necessarily present in a manner that meets the requirements for a depressive disorder such as a major depressive episode. Rather, the individual may simply suffer a form of mental angst that is accounted for by symptoms of depression, and could be considered "subsyndromal" or might represent early indications of other mood disorders not seen in this study. Further study on the effects of the model upon various mood disorders (such as anxiety) as well as the use of longitudinal designs that can capture the development of these "subsyndromal" indications of problems is warranted to examine these possibilities.

Limitations

There are several notable limitations to the current study. First, the data used for this study was secondary data obtained from the NLAAS, thus it is difficult to evaluate the accuracy of the data. Additionally, the fit of secondary data is not perfect with the aims of this study as the NLAAS data was collected for the purposes of the NLAAS. Second, the data used for this study was cross-sectional but the proposed model was causal in nature. Therefore, no assumption about causality may be made from the results; only associations can be inferred from the statistical findings. Next, a model fit statistic, which would have described the proposed model's fit with the resulting path analysis, was not possible. Recursive regression was

employed to test the proposed model instead of structural equation modeling which offers a

model fit statistic. This was done in order to preserve the hypothesized relationships in the

model and to control for the psychosocial context throughout the model. Fourth, linguistic

proficiency was used as a proxy for acculturation relying on the Sapir-Whorf hypothesis. While

this is common, it only provides a global assessment of the participants' level of acculturation

and is not a nuanced measure. Finally, this study modeled the effect of cultural adaptation on

depressive symptoms which is not a measure of depression. While depressive symptoms

represent a continuum of the psychological symptoms associated with depression, a diagnosis of

depression is more complex.

Implications

Practice implications.

This section discusses the implications of this study for social work practice. The results

of this study indicate that Hispanic families play an important part in the cultural adaptation

process. Dissonant acculturation or parent-child value differences that arise from acculturation

contribute to the number of depressive symptoms reported by the child. Simultaneously, family

cohesion may reduce the effects of dissonant acculturation; this study's results suggest that by

increasing family cohesion it may be possible to reduce dissonant acculturation.

Hispanic families.

The results indicate that Hispanic families play an important part in the cultural

adaptation process. Dissonant acculturation or parent-child value differences that arise from

acculturation contribute to the number of depressive symptoms. To that end, a family-based

program to increase cohesion and reduce dissonant acculturation is called for. Other family-

based programs with family-cohesion components have been shown to reduce problem behaviors

in Hispanic adolescents (Coatsworth, Pantin, & Szapocznik, 2002), and to reduce and prevent drug abuse among Hispanic adolescents (Szapocznik et al., 1989). Results from this study indicate that immigrants coming before the age of 12 are more acculturated as adults than those who come between the ages of 13 and 17. Since those who come between the ages of 13 and 17 are more likely to have the same values, beliefs and stage of acculturation as their parents, intervention with those arriving at a younger age and their parents would be advised.

Age at immigration.

Age at immigration was examined in two groups: up to age 12 and ages 13 to 17. There were significant differences impacting the adaptation of each group especially with regard to acculturation and stress. However, there were no differences in depressive symptoms between the two groups. Those migrating by age 12 were more acculturated in adulthood than those migrating later in their youth. Furthermore, those migrating at a younger age had less acculturative stress in adulthood than those migrating later.

These findings are very telling when combined with findings from the recursive regression analysis that suggest older individuals have greater acculturative stress than younger individuals. Combined with the findings on acculturation and acculturative stress which suggest that as acculturation increases acculturative stress decreases, it becomes obvious that the 13 to 17 year old is disadvantaged compared to the younger group. The 13 to 17 year old group is far less acculturated as adults than the younger group and has much higher acculturative stress levels, thus indicating migration by age 12 is a protective factor increasing the adaptive well-being of the Hispanic immigrant.

Ethnic group differences.

Ethnic group differences revealed two distinct combinations in the data. The first dealt specifically with socioeconomic status. Cubans were found to have a higher education and a higher income than the other ethnic groups. The second dealt with age and time in the U.S. Cubans and Puerto Ricans were older and had been in the U.S. much longer than Mexican and other Hispanic ethnic groups. These two combinations are important for social work practitioners, especially when compared to the recursive regression results.

Culturally competent social work practice means acknowledging the differences that clients' exhibit and being aware of potential bias. One potential hazard with pan-ethnic categorizations like "Hispanic" is that ethnic stereotypic occurs and the differences attributable to a client's unique ethnic and cultural experience may become lost (Breslau et al., 2006). For example, the data from this study demonstrates that Cubans are more emblematic of the white middle class, than they are poor Latinos when examining their socioeconomic characteristics. Furthermore the data reveals that many of the Cuban and Puerto Rican sample have been in this country for longer than they lived in their native country. This can make using the term "immigrant" problematic as research has demonstrated that, while they may technically be immigrants, many identify with the U.S. more so than their native country (Deaux, 2011).

While this study is about Hispanic immigrants, it does not make the mistake of ethnic indifference. The data supports that differences exist among the ethnic groups under study and social work practitioners should be aware of these differences. Immigration is a transformative experience by its very nature. Caution is urged when using pan-ethnic terminology and when using the word "immigrant," especially among those who migrated during childhood and among those who have lived in the U.S. for a long period of time.

Mental health assessment.

The results of this study demonstrated that the process of cultural adaptation is inherently stressful and that stress can have an impact on the development of depressive symptoms in Hispanic immigrants. While these findings are not necessarily new, the ways in which they have been demonstrated are. By providing a causal model which hypothesizes how the symptoms of depression develop, opportunities for assessment and intervention can now be further explored. Though the findings of study do not indicate that cultural adaptation causes clinically-significant depression, they do suggest that cultural adaptation is inherently stressful, and in some instances this stress manifests in psychologically harmful ways which lead to the development of depressive symptoms. In combination with other risk factors such as socioeconomic status and gender, these symptoms can lead to depressive illness. Given the risk for the development of depressive symptoms associated with cultural adaptation, social workers can assist this client population by assessing for acculturative stress and dissonant acculturation in order to identify individuals who are more likely to experience larger numbers of symptoms of depression.

Results from this study reveal two opportunities for early assessment in youthful immigrant populations. Assessing acculturative stress is the first opportunity. Currently, no clinical measures exist to assess the stress of acculturation making this assessment difficult. Since there is no clinical measure of acculturative stress, there is also no clinical threshold whereby social workers can assess significant levels of stress. However, research indices exist that can be used to measure change over time in acculturative stress. This study does indicate that higher levels of stress are indicative of more symptoms of depression. The second opportunity to for early assessment is in assessing dissonant acculturation. The same problems exist with dissonant acculturation measures that arise with acculturative stress measures. In

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order to assess the impact of dissonant acculturation, social workers would need to use research measures and look for change over time in lieu of the use of a clinical threshold. Still, this study indicates that greater dissonance means more symptoms of depression.

This study also reveals that the use of depression screening instruments which rely on a symptom count to determine risk for depression may be problematic in this population. Because the number of symptoms did not correlate with a diagnosis in this study, it is possible that Hispanic immigrants seeking advice from a mental health professional for issues with cultural adaptation might be incorrectly diagnosed with depression. Thus, while one may be tempted to attribute this psychological suffering to emotional distress in general, in fact the distress may be rooted specifically in their attempt to adjust to a new culture, in which case directing services to this issue would be warranted. If this is the case, assessing this group specifically for distress related to cultural adaptation would also be warranted.

Finally, there are implications for the use of diagnostic measures of depression in application with Hispanic groups. Latinos diagnosed with mental illnesses have been found to report significantly more symptoms than non-Latinos. However, such reports may actually relate to a cultural miscommunication, wherein the problem is communicated in a "Hispanic" cultural context, but interpreted in a Western cultural context (Minsky et al., 2003; Lopez et al., 1992). In essence, reporting mental health problems may "mean" something dramatically different for the reporter than for the recipient of the message. Consequently, assessing the "problem" with Western measures may not identify the problems as they are actually experienced. It can be concluded that at least some of these difficulties stem from the experience of this group's adapting to a new culture, and that psychological distress is a logical outcome of this adaptation. If this distress is not identified, it is likely that these immigrants will function at less-than-

optimal levels and will not receive adequate care. Ultimately, this may result in their continuing to be disenfranchised from the mental health system.

Culturally-neutral measures currently used to assess mental health problems are based on Western understandings of mental illness. Non-Western, Hispanic conceptualizations of mental health are not well represented by current instruments. This approach ignores the widely-held beliefs about mental health found in other cultures. By ignoring the belief system held by Hispanic immigrants in favor of a Western system, diagnostic measures contribute to the oppression of an already disenfranchised group. If culturally sensitive measures are not available to address the needs of this group, advocacy efforts to develop and use such instruments would be warranted.

Policy implications.

Access to and utilization of mental health services by immigrant populations is an area of concern as the immigrant population continues to grow. One study found that recent immigrants rarely use health services and it takes approximately ten years past their year of arrival before they approach the level of utilization by white natives in the U.S. (Leclere, Jensen, & Biddlecom, 1994). Undocumented Latino immigrants have been found to use health services less than other Latinos even among their U.S. born children (Berk et al., 2000). While some of the variance is attributable to the stigma associated with mental illness, other variation is commonly attributed to cultural factors and discriminatory practices on the part of mental health practitioners and administrators (Nadeem et al., 2007). While service utilization rates appear to be rising for Latino immigrants in general, characteristics such as age at immigration, time in the U.S., language, and generational status all influence one's decision to seek out help for a mental illness (Alegria et al., 2006). Those having a longer history in the U.S. and with less outside cultural

influence are more likely to seek out mental health services than those with shorter times in the U.S. or those with strong cultural ties to another place.

This study demonstrates that the adaptation process is inherently stressful and can potentially lead to the development of mental illness among Hispanic immigrants. However, access to mental health resources for Latino immigrants is not always readily available. Barriers exists which block access and issues of acculturation and language make mental health treatment difficult.

With an increasing Hispanic population both from within the U.S. and resulting from immigration, resources must be allocated to assist with the mental-health needs of a diverse Latino population. Social work's response should be one of advocacy and education; to advocate for resources in dealing with the specific mental health needs of the increasing Latino population and to educate other social workers on the specific mental health problems of Latino immigrant populations.

Policy formulations must take into account the specific and diverse needs of Latinos. Specifically, there are two areas in which policy action could help recent immigrants of Hispanic origin. First, legislators must allocate resources to expand and develop community mental health resources around the needs of a diverse Latino population. As mentioned earlier, Latino immigrants often experience multiple barriers to accessing mental health care and the obvious solution is bringing care into the Hispanic community. The second response is a social development. While much policy action has been focused on closing America's border with Mexico, re-allocation of those resources into social development projects in Latin America would simultaneously stem the flow of immigration and create stable economies in neighboring countries. By developing the economies of Mexico and other Latin American countries,

immigrants would not be drawn into the American cultural milieu by economic forces. Instead, potential migrants would be able to make an economic decision about when and where they would like to work, making themselves competitive in a regional marketplace.

Research implications.

This study hypothesized a causal model of cultural adaptation and subsequently tested that model using recursive regression. The findings suggest that there is an order to the events leading to depressive symptoms arising from cultural adaptation, though longitudinal data is needed to confirm these findings. While much of the research conducted on acculturation and health behaviors pools groups of people into large, pan-ethnic groupings this misses the details offered by ethnicity. Latino is a pan-ethnic group that researchers often push Mexicans, Puerto Ricans, Cubans, and other groups into. Instead of large cross-cultural pan-ethnic groupings, the use of the ethnic self-identities should be used for more accurate, nuanced data (Arcia et al., 2001). Future research in this area would also benefit from the use of longitudinal data to confirm the associations found in the current study, the use of samples with different developmental and generational characteristics, and mixed-methods studies that provide additional depth of data on the experiences of cultural adaptation in the development of mental illness. This study also suggests several variables that may be important to examine in the future including geographic distribution, skin tone, community cohesion, and social network.

Conclusions

Based on the preceding discussion of the results, there are several conclusions that can be drawn. First, this study has achieved its first aim of describing the effects of cultural adaptation on depressive symptoms among Hispanic immigrants who migrated at a young age. By conducting a series of tests, concluding with a recursive regression analysis, this study was able

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to describe how cultural adaptation impacts depressive symptoms in this particular sample. Second, this study was able to examine family cohesion's impact on depressive symptoms. Using the statistical technique, family cohesion was explored for its moderating effects on depressive symptoms. Finally, the model was explored as potential research construct. Each of these aims and the conclusions drawn about them is discussed below.

This study used the current literature and theory to test a model of cultural adaptation on the development of depressive symptom in Hispanic immigrants who migrated by age 17. The conclusions from this study's analysis were that both family and stress were major contributors to depressive symptoms. Dissonant acculturation, otherwise known as the acculturation gap, results from differences in parent-child acculturation. Dissonant acculturation was found to be the major contributor to the development of depressive symptoms. Family cohesion had no effect on depressive symptoms. However, family cohesion was found to moderate the effect of dissonant acculturation on depressive symptoms. Given this unique dynamic of conflict arising from acculturation and family cohesion, one must assert the importance of family cohesion in reducing depressive symptoms.

Acculturative stress was also found to be predictive of both dissonant acculturation and depressive symptoms. Acculturative stress, which is literally the stress induced by cultural change was found to lead to increases in dissonant acculturation and increases in depressive symptoms. The one exception was among older immigrants who had lower levels of acculturative stress.

In describing the effect of cultural adaptation on depressive symptoms, this study modeled a combination of behaviors that immigrants experience upon migration. The purpose of this was to attempt to order these behaviors so that they may be predicted. It is in this way that

this study contributes substantive knowledge to the theory and research on immigration and mental health. While further refinement is needed, the model tested here provides a solid foundation to build upon.

The second aim of this study was to examine family cohesion's impact on depressive symptoms. The results of this study found that family cohesion had no impact on depressive symptoms. However, family cohesion was utilized throughout the model and was found to have a demonstrable effect at other points not anticipated in the model. The strongest effect was noted on dissonant acculturation where family cohesion reduced the effects on depressive symptoms.

The final aim of this study was to examine the proposed model as a potential research construct for further study beyond the dissertation. Much of what was predicted in the model was significant save two constructs. Results for subjective social status and ethnic social identity did not yield significant results as predicted in the model. While this does not indicate that they should be rejected, it does mean that their position relative to other constructs should be reconsidered. Additionally, it may be that other constructs may need to be introduced for subjective social status and for ethnic social identity to impact depressive symptoms (i.e. mediation or moderation). The impact of acculturation, discrimination, acculturative stress and dissonant acculturation in this model were undeniable and should undoubtedly be carried forward. However, refinement is necessary for the model to be a useful research construct in the future. More explicit relationships must be delineated beyond causal ones and the use of feedback loops may add greater specificity of concepts.

Concluding remarks.

The study's ultimate contribution is in advancing knowledge on how cultural adaptation processes impact depressive symptoms among Hispanic immigrants that migrated during youth.

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The particular approach used models these processes in such a way that clear associations can be seen among the psychosocial contextual elements, the cultural adaption processes, and depressive symptoms. Still, further longitudinal study is needed to confirm the causal nature proposed in the model. This study has also contributed to advancing social work's knowledge on the topic of cultural adaptation. It is evident that ethnic group differences exist in the adaptation process, and that there is some benefit to earlier migration. This knowledge may be used by social workers who may be working with this growing population.

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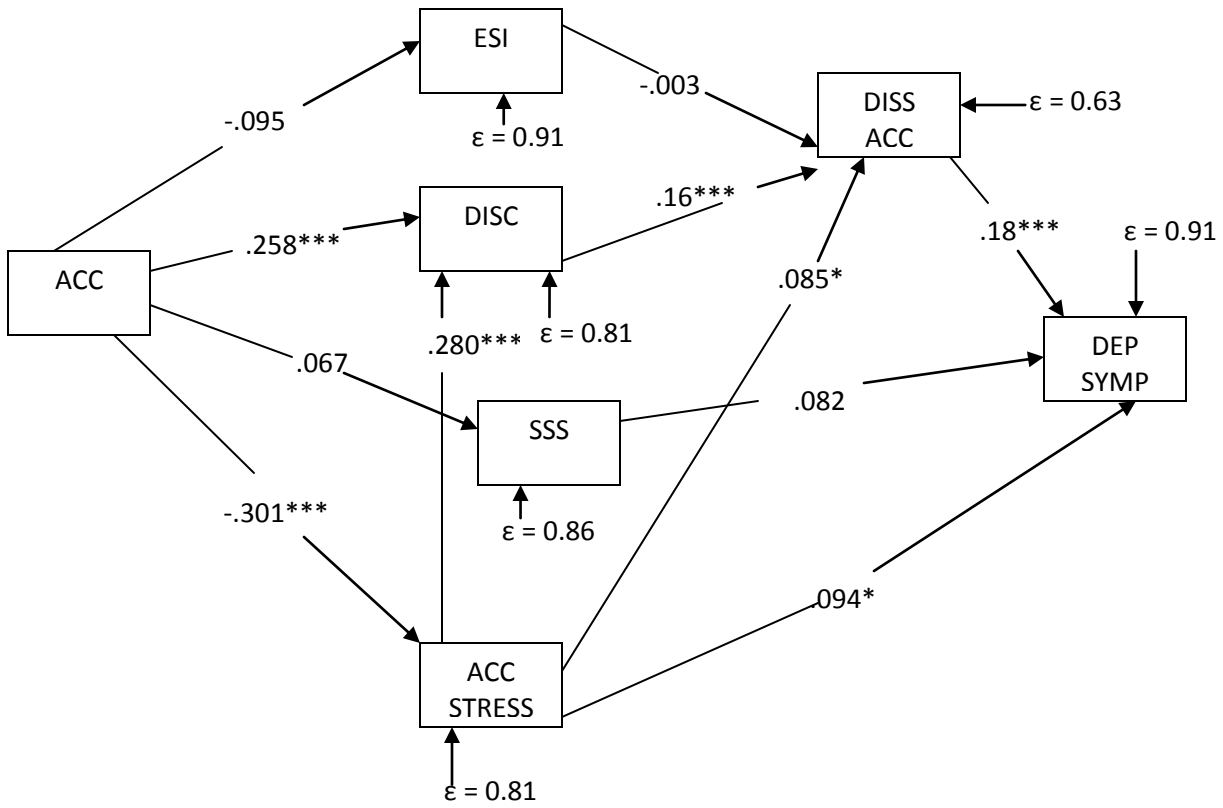
Appendix A
Complete Sample Characteristics

	N	%	Mean	SD
GENDER				
Male	270	46.5		
Female	311	53.5		
EDUCATION				
Less than 12 years	210	36.1		
12 years	138	23.8		
Greater than 12 years	233	40.1		
NUMBER OF YEARS IN THE U.S.				
Less than 5	32	5.5		
5-10	40	6.9		
11-20	159	27.4		
Greater than 20	350	60.2		
INCOME TO NEEDS RATIO				
At or below 100% poverty level (2001)	208	35.8		
Greater than 100% but not exceeding 200%	78	13.4		
Greater than 200%	295	50.8		
AGE			35.67	12.76
ETHINICITY				
Cuban	131	22.5		
Puerto Rican	116	20		
Mexican	203	34.9		
Other Hispanic	131	22.5		
AGE AT IMMIGRATION				
Less than 12 years	365	62.8		
13 to 17 years	216	37.2		

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Appendix B

Path Analysis with Beta Values

ESI

ε = 0.91

DISS
ACC

ε = 0.63

-.095

-.003

.258***

DISC

.16***

ACC

.18***

ε = 0.91

.085*

.067

.280***

ε = 0.81

SSS

.082

DEP
SYMP

-.301***

ε = 0.86

ACC
STRESS

.094*

ε = 0.81

* <.05
**<.01
*** <.001

Appendix C
Bivariate Symptom Prediction - Odds Ratios

	ACCULTURATION	DISCRIMINATION	ACCULTURATIVE STRESS	DISSONANT ACCULTURATION
Smaller appetite?	.908	1.011	.999	.934
Larger appetite?	.979	1.00	1.164	1.109
Gain weight?	**1.332***	.979	**.661***	1.074
Lose weight?	.945	.995	.885	1.123
Trouble sleeping?	**.833***	1.008	1.013	.875
Sleep a lot?	1.080	.827	.154	.943
Trouble sleeping AND not feel tired?	.966	.996	1.118	1.016
Feel tired or low energy?	.871	1.036	.978	1.125
Feel a lot of energy?	.899	.997	.740	1.193
Feel lethargic?	.936	.982	1.128	1.049
Restless or jittery?	.921	.972	1.169	.897
Thoughts come slowly/mixed up?	**.891***	.990	1.115	1.069
Thoughts race?	1.011	**1.096***	1.053	.935
Difficulty concentrating?	.965	1.035	1.188	1.047
Difficulty making decisions?	.973	1.005	.978	1.035
Lose self-confidence?	1.101	1.003	.939	**1.192***
Low self-esteem?	1.045	1.022	1.086	1.113
Feel worthless?	1.028	1.010	**.697***	1.105
Feel guilty?	1.013	1.025	1.075	1.048
Irritable, grouchy or in a bad mood?	.905	1.005	1.014	1.001
Nervous or anxious?	.899	1.003	1.081	1.004
Attacks of fear or panic?	.932	**1.095****	1.135	.955
Think about death?	.917	1.039	1.059	1.137
Think that it would be better if you were dead?	.914	1.042	.976	1.120
Think about committing suicide?	.922	1.031	.831	1.150
Make a suicide plan?	.919	.983	.926	.893
Attempt suicide?	.997	1.008	.812	1.113
Difficulty coping?	.972	1.026	1.065	1.115
Rather be alone?	1.12	1.011	**.719****	1.143
Feel less talkative?	1.061	1.022	1.114	1.101
Cry often?	.937	.995	.860	1.167

* ≤ .05

** ≤ .01

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