

DEPRESSION IN LATINA MOTHERS: EXAMINING  
THE ROLES OF ACCULTURATION,  
ENCULTURATION, SOCIAL SUPPORT AND FAMILY  
RESOURCES

By

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Title of Study: DEPRESSION IN LATINA MOTHERS: EXAMINING THE ROLES OF ACCULTURATION, ENCULTURATION, SOCIAL SUPPORT, AND FAMILY RESOURCES

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Abstract: Previous findings on the relation between acculturation and depression have been mixed, such that acculturation has been demonstrated as a protective factor, risk factor, and neutral factor in depressive symptomology (e.g., Lara et al., 2005). The current study sought to clarify this relation by examining three conceptual models of acculturation utilized in previous research: 1) unidimensional models, 2) bidimensional models, and 3) multidimensional models. This study utilized archived data from a randomized clinical trial evaluating the effectiveness of SafeCare+, a home-based child maltreatment prevention model that was culturally adapted for a Midwestern Latino community. Results from the study indicated that the multidimensional model demonstrated the best fit for depression scores when compared to the unidimensional and bidimensional models. Within the multidimensional model, neither acculturation nor enculturation were significantly related to depression, however, increased family resources and social support were related to decreased depressive symptomology. Findings offer clarity to the complex relation between acculturation and depression in Latina women and inform future research in the conceptualization and measurement of acculturation.

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## CHAPTER I

### INTRODUCTION

#### **Background**

In conjunction with the growth of minority populations, research has been increasingly devoted towards understanding racial disparities in disorder prevalence and presentation. This area of research has yielded findings of differential disorder prevalence rates amongst various minority populations, suggesting that Latino populations are at an increased risk for mental health difficulties when compared to White and African American populations (Grant et al., 2004; Ortega, Rosenheck, Alegria, & Desai, 2000). Within these studies, Latinos reported higher prevalence rates of mood, anxiety, and substance use disorders (Grant et al., 2004; Myers et al., 2002). Further, Latino immigrants residing in the United States have an increased risk for depression when compared to other ethnic minority groups (Alegria, Sribney, Woo, Torres, & Guarnaccia, 2007c; Bromberger, Harlow, Avis, Kravitz, & Cordal, 2004; Frerichs, Aneshensel, & Clark, 1981; Myers et al., 2002).

To better understand higher rates of depression in Latinos, the influence of acculturation, or the acquisition of key elements in a host culture, has been examined (Lara, Gamboa, Kahramanian, Morales, & Hayes Bautista, 2005). The process of adopting a host culture has been measured in a variety of ways such as English language proficiency (Ortega, et al., 2000), time in the U.S. (Salgado de Snyder, 1987), and via formalized measures such as the Acculturating Rating Scale for Mexican Americans-II (ARSMA-II; Cuellar, Arnold, & Maldonado, 1995)



and the Bidimensional Acculturation Scale for Hispanics (BAS; Marin & Gamba, 1996). Within acculturative research, it is suggested that there is an *immigrant paradox*, in which increased length of time in the United States is associated with increased mental health difficulties (e.g., Caplan, 2007). It is theorized that, like many minority groups, acculturating Latinos experience added pressures of navigating and adapting to a new culture, which leads to higher distress (Salgado de Snyder, 1987). These added pressures can contribute to the immigrant paradox and consist of communication barriers (e.g., learning a new language), strained interpersonal relationships (e.g., leaving family and friends in their country of origin), socioeconomic stressors (e.g., employment), and role changes (e.g., adapting to Western gender roles).

Attempts to understand the impact of acculturation on mental health have linked higher levels of acculturation and acculturative stress to higher rates of depression, alcohol use disorders, and suicidal ideation (Grant et al., 2004; Hovey, 2000a/2000b; Ortega et al., 2000; Salgado de Snyder, 1987). Specifically, acculturative stress, or stressors surrounding immigration experiences, has been linked to increase depressive symptomology amongst Latina women (Hovey, 2000a/2000b; Ortega et al., 2000; Salgado de Snyder, 1987). While numerous studies have cited acculturation as a risk factor for depression (e.g., Alegria et al., 2007a; Grant et al., 2004; Torres, 2010), several studies have found contradictory findings, such that higher acculturation is a protective factor, resulting in decreased depressive symptomology (Cuellar, Nyberg, Maldonado, & Roberts, 1997; Gonzalez, Haan, & Hinton, 2001). Further, some studies have noted that despite finding a relation between acculturation and depression, any significance dissipates upon controlling for demographic and socioeconomic variables (Burnam, Hough, Karno, Escobar, & Telles, 1987; Cuellar et al., 1997). Thus, the current role of acculturation as a protective or a risk factor for depression is unclear. These discrepant findings highlight a need to better understand the relation between acculturation and depression in Latino populations.

Attempts to explain the conflicting results often defer to methodological, measurement, or sample characteristic differences. However, upon review, there is no clear pattern across studies utilizing similar or different measures of acculturation. Additionally, there are various demographic and interpersonal variables that are being measured in inconsistent ways across studies, making study comparison difficult. Such factors include socioeconomic and relationship status, education level, familial support, coping style, and familial conflict and burden (Alegria et al., 2007a; Cuellar et al., 1997; Gonzalez et al., 2001; Myers et al., 2002; Rivera, 2007; Torres & Rollock, 2007). In conjunction with these inconsistencies, the use of proxies as measures of acculturation (i.e., years in the United States, primary language) and different models of conceptualizing acculturation have increased the difficulty in drawing consistent conclusions regarding acculturation.

### **Specific Aims**

The present study aims to clarify the impact of acculturation on depression within a Latina sample and to fill the gap in the current literature by examining how acculturation models impact the understanding of this relation. It is hypothesized that when determining the most appropriate model for this relation, the models incorporating contextual variables will demonstrate the best fit. These hypotheses will be evaluated using archival data from participants at baseline enrolled in a randomized clinical trial (RCT) of a home-based child maltreatment prevention model in a Midwestern Latino community. The sample included 342 Latina women with the majority originating from Mexico (80%), speaking Spanish as their primary language (95%), and residing in the U.S. between 0-35 years ( $M=9.88$ ,  $SD=5.62$ ).

## CHAPTER II

### LITERATURE REVIEW

#### **Overview**

To better understand depression in a Latina sample, the current review will examine extant literature regarding depression in the general population and compare current findings to those within Latino populations. Additionally, the review will examine the Latino culture and its impact on depressive symptomology as well as the role of acculturation in immigrant mental health. To aid in a comprehensive review, it will include information on current and historic models utilized to examine acculturation and depression and identify discrepant findings on this relation. This review will explore explanations for current discrepancies such as model usage and acculturation measurement. Finally, the review will propose two key factors to include when examining acculturation and depression: social support and family resources.

#### **Depression**

Depression is defined as “the presence of sad, empty, or irritable mood, accompanied by somatic and cognitive changes that significantly affect an individual’s capacity to function” (American Psychiatric Association, 2013). According to the Center for Disease Control (CDC; 2013) and the World Health Organization (WHO; 2008), approximately 1 in every 20 Americans report experiencing depression in a year. More specifically, the Center for Disease Control reported roughly 8% of individuals over the age of 12 experienced depression between 2009 and 2012 (CDC, 2015). To further the understanding of the epidemiology of depression, Kessler and

colleagues (2003) conducted face-to-face surveys with 9,090 Americans over the age of 18 and found 16.2% of individuals had a lifetime prevalence of Major Depressive Disorder (MDD) and 6.6% of individuals experienced MDD for a 12-month period. It has thus been established that depression is a commonly occurring disease.

In conjunction with a high prevalence rate, depression has also been linked to comorbid physical and mental health difficulties that are deleterious to individuals, resulting in low health-related quality of life (Alonso et al., 2004; Strine, Chapman, Kobau, Balluz, & Mokdad, 2004). These comorbid mental health deficits included anxiety disorders (Avenevoli, Stolar, Li, Dierker, & Merikangas, 2001; di Marco et al., 2010; Starr, Hammen, Connolly, & Brennan, 2013), substance use disorders (Burns & Teesson, 2002; Kessler et al., 2003), impulse control disorders (Kessler et al., 2003; Lejoyeux, Arbaretaz, McLoughlin, & Ades, 2002) and suicide risk (Miret, Ayuso-Mateos, Sanchez-Moreno, & Vieta, 2013; Oquendo et al., 2001; Walker, Wingate, Obasi, & Joiner, 2008). Such comorbidity should be taken seriously, as the CDC reports an estimated 41,149 suicides were in direct relation to depression (CDC, 2015).

The mental and physical health difficulties associated with depression has resulted in significant impairment at work and interpersonal functioning (Lepine & Briley, 2011; Pratt & Brody, 2008; Whooley et al., 2002). According to Pratt and Brody (2014), nearly 90% of individuals with severe depressive symptoms reported impairment in work, home, or school activities related to their symptomology. Depression is estimated to result in a loss of \$36.6 billion every year in the United States due to inhibited productivity or absences from work (Lepine & Briley, 2011). Additionally, Kessler and colleagues (2003) found that nearly all individuals (96%) with depression experience impairment in at least one area of their life (work, household, relationship, and social roles), with impairment of social domain being most prevalent.

The WHO (2008) considers depression to be a leading cause of disability in the general population. As such, research has been dedicated to identifying demographic and psychosocial risk factors that increase the likelihood of adulthood depression. These identified risk factors include female gender (Cespedes & Huey, 2008; Cuellar et al., 1997; Pratt & Brody, 2014; Roberts & Roberts, 1982), middle-age (Ellermann & Reed, 2001; Hasin, Goodwin, Stinson, & Grant, 2005; Kessler et al., 2005; Pratt & Brody, 2014), single marital status (e.g., Kiernan & Pickett, 2006), unemployed work status (e.g., Caetano, Vaeth, Mills, & Canino, 2016), low income (Zimmerman & Katon, 2005), pregnancy status (e.g., Haas et al., 2004), lower education (Ross & Mirowsky, 2006), and childhood traumatic events, such as child maltreatment (Springer, Sheridan, Kuo, & Carnes, 2007).

Depressive symptoms have also been shown to vary across cultures and ethnic groups (Howell, Mora, Horowitz, & Leventhal, 2005; Kessler & Bromet, 2013; Parker, Gladstone, & Chee, 2001; Pratt & Brody, 2014; Pratt & Brody, 2008; Simon, Goldberg, Von Korff & Ustun, 2002), with ethnic minorities reporting higher prevalence rates for depression than non-Hispanic whites (Breslau, Kendler, Su, Gaxiola-Aguilar, & Kessler, 2005; Bromberger et al., 2004; Dunlop, Song, Lyons, Manheim, & Chang, 2003; Fisher, Chesla, Mullan, Shaff, & Kanter, 2001; Myers et al., 2002; Plant & Sachs-Ericsson, 2004). Latinos in particular have been shown to be at the highest risk for depression when compared to individuals who are African American, non-Hispanic White, Chinese, and Japanese (Bay-Cheng, Zucker, Stewart, & Pomerleau, 2002; Bromberger et al., 2004; Frerichs et al., 1981; Jackson-Triche et al., 1999).

While research consistently places Latinos at an increased prevalence for depression, the exact nature of this vulnerability is unclear. Previous research has identified Latinos as a heterogeneous population frequently grouped and examined together. Thus recent research has recognized the unique subgroups within this heterogeneous ethnic group and attempted to further understand the heightened risk by examining smaller, more homogenous subgroups. Studies have

created these groups by examining individuals based upon country of origin (Arcia, Skinner, Bailey, & Correa, 2001; Falcon & Tucker, 2000; Oquendo et al., 2001) and immigration status (Burnam et al., 1987; Cordero & Kurz, 2006; Gonzalez et al., 2001; Lara et al., 2005). For example, Alegria and colleagues (2007a) found that depression rates differ by country of origin, with Mexican individuals exhibiting more depressive symptoms than Cuban individuals. Utilizing such subgroups may offer insight to discrepant prevalence statistics when examining Latino populations. Given the high prevalence rates of depression and their substantial effects, researchers have been motivated to understand depression and its heightened prevalence in minority populations. Therefore, a better understanding of factors contributing to depression in Latino individuals is necessary to inform clinical treatment and prevention programs.

### **Latino Culture**

The 2010 U.S. Census defines Latino or Hispanic as “a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race” (U.S. Census Bureau, 2010). Despite society utilizing the terms Latino and Hispanic interchangeably, there is much controversy and political affiliation related to the definition and use of these terms (Alcoff, 2005). Traditionally, the term, “Latino” refers to individuals from countries in Latin America, such as Puerto Rico, Mexico, and Cuba, while “Hispanic” refers to individuals from countries related to or affiliated with Spain (Calderon, 1992). While there is substantial overlap between these two terms, there are groups of individuals that may identify as one but not the other (e.g., Brazil). The present study will utilize the term, “Latinos” when referring to individuals from Latin America as this term has demonstrated the capacity for panethnic unity, representing communalities across diverse subgroups of this ethnic group (Calderon, 1992).

In 2013, there were approximately 54 million Latinos living in the United States, comprising about 17% of the total population and becoming the largest ethnic minority group in

America (CDC, 2013). Among Latinos in the United States, approximately 64% identify as Mexican, 9.4% identify as Puerto Rican, 3.8% as Salvadoran, 3.7% as Cuban, 3.1% as Dominican, 2.3% as Guatemalan, and 13.7% identified as from “other Hispanic or Latino origin (CDC; 2013). The Latino population in the U.S. is rapidly increasing, as this ethnic groups’ growth accounted for more than half of the U.S.’s overall growth between 2000 and 2013. In 2013, 46% of all immigrants residing in the U.S., equating to approximately 19 million people, self-identified as having either Hispanic or Latino origins (Zong & Batalova, 2015). Additionally, 35% of Latinos living in the U.S. have immigrated from native countries. This large number of immigrating Latinos has motivated research to examine physical and mental health outcomes associated with immigrating and acculturating to a new society.

### **Acculturation**

In order to better understand physical and mental health disparities amongst Latino populations, researchers have begun to examine the role of *acculturation*, a term referring to the “assuming of values, language, and cultural practices of a new culture” (Chapman & Perreira, 2005). This concept is commonly understood as acquiring cultural elements of a host or dominant society, including language, food choice, music, sports, etc. (Lara et al., 2005). According to Graves (1967), acculturation can be separated into two classifications, collective and psychological acculturation. Collective acculturation refers to a group phenomenon, in which the culture of an immigrating group changes, while psychological acculturation is focused on changes at an individual level. This separation between group and individual acculturation is important because it allows a greater understanding of the variations in acculturation level amongst individuals within a larger immigrating group (Berry, 1997).

The term, “acculturation,” is often used in reference to a change in values. To better understand how acculturative changes occurs, Marin (1998) proposed three levels of change that describe the extent to which individuals adopt a host culture; superficial, intermediate, and

significant. These three levels represent the degree an individual identifies to a host culture. Superficial levels indicate the least commitment to a dominant culture and can include shallow behavioral changes such as liking similar food preferences or television programs. Intermediate acculturation would suggest moderate behavioral and social changes such as utilizing the same language as a dominant culture. This change may represent a way to better communicate with others; however, it does not imply the full adoption of societal views. Finally, significant acculturation represents the deepest sense of acculturation in which an individual or group changes their fundamental values and attitudes to align with a host culture. This is considered the most involved form of acculturation. These levels of acculturation attempt to represent the degree to which immigrating individuals accept and identify with the host culture; however, it neglects to acknowledge the reality of biculturalism, or accepting the values of two or more cultures (Thomson & Hoffman-Goetz, 2009).

It was once believed that immigrants inherently desire to acculturate to a host society and that it is not only desired, but also necessary for upward societal mobility (Gans, 2007). While acculturation in Latino populations has been linked to some positive outcomes, such as increases in exercise (Abraido-Lanza, Chao, & Florez, 2005) and health care utilization (e.g., Lara et al., 2005), there is an overwhelming body of evidence that suggests acculturation is a risk factor for a host of maladaptive physical and psychological outcomes (e.g., Klevens, 2007; Khan, Sobal, & Martorell, 1997; Ortega et al., 2000; Salgado de Snyder, 1987; Torres, 2010; Viruell-Fuentes, 2007). As such, it has been suggested that there is an *immigrant paradox*, in which the more time spent in the United States is associated with more mental health difficulties (Caplan, 2007; Schwartz, Unger, Zamboanga, & Szapocnik, 2010a; Torres, 2010). Higher rates of acculturation have been linked to increased substance abuse and dependence (Abraido-Lanza et al., 2005; Akins, Mosher, Smith, & Florence Gauthier, 2008; Ayala, Baquero, & Klinger, 2008; Burnam et al., 1987; Gil, Wagner, & Vega, 2000; McNulty Eitle, Gonzalez Wahl, & Aranda, 2009), health



problems (i.e., high body-mass indices and poor diet; Abraido-Lanza et al., 2000; Ebin et al., 2001; Finch & Vega, 2003; Khan et al., 1997), problematic behavior (i.e., unsafe sexual activity, delinquency; Dinh, Roosa, Tein, & Lopez, 2002; Ebin et al., 2001; Samaniego & Gonzales, 1999; Sullivan et al., 2007; Vega, Gil, Warheit, Zimmerman, & Aposporit, 1993; Vega, Khoury, Gil, & Warheit, 1995), intimate partner violence (Caetan, Ramisetty-Mikler, Caetano Vaeth, & Harris, 2007; Garcia, Hurwitz, & Kraus, 2005; Sabrina, Cuevas, & Zadnik, 2014; Sanderson, Coker, Roberts, Tortolero, & Reininger, 2004), depression (Finch & Vega, 2003; Gonzalez et al., 2001; Lorenzo-Blanco et al., 2011; Rivera, 2007; Torres, 2010), and suicidal ideation (Castle, Conner, Kaukeinen, & Tu, 2011; Hovey & King, 1996; Perez-Rodriguez et al., 2014; Rasmussen, Negy, Carlson, & Mitchell Burns, 1997; Walker et al., 2008).

### **Acculturation Models**

As the understanding of acculturation has evolved over time, the frameworks in which researchers have viewed acculturation have also changed. The following models have been utilized when examining the link between acculturation and mental health: unidimensional, bidimensional, and multidimensional models. These models will be examined to illustrate the evolution of acculturative research and how model type is an essential factor impacting findings on acculturation's role in mental health research.

#### *Unidimensional Models*

Traditionally, acculturation models viewed adapting to a host society on a continuum from ethnic identity (total immersion in original culture) to assimilation (complete adoption of host culture; Lara et al., 2005; Lee, Sobal, & Frongillo, 2003; Rudmin, 2009). It was believed that ethnic identity and assimilation were inversely related, such that through acculturation, an individual would abandon their original values and reach assimilation, a term describing when an individual fully adopts the beliefs of a host country (Chapman & Perreira, 2005; Gordon, 1964). According to this model, acculturating is a necessary process that is beneficial for immigrant

groups. The unidimensional model posits that as contact between a group and a host culture increases, so does the likelihood that the group will adopt normative behaviors of that culture. As such, studies utilizing these models have often used unidirectional scales or proxies in measuring acculturation such as primary language, years in the United States, age at immigration, and generation status (Ayala et al., 2008; Burnam et al., 1987; Lara et al., 2005; Lopez-Class, Gonzalez Castro, & Ramirez, 2011; Thomson & Hoffman-Goetz, 2009).

McNulty Eitle and colleagues (2009) attempted to redefine acculturation in this model by incorporating how immigrant groups adopt not only beneficial traits of the host culture, but also negative behaviors (e.g., substance use) associated with the new culture. Gans (1997) describes America's culture as being a "powerfully attractive force for immigrants ... easily enticing the children of most immigrants." The adapted model offers understanding of group acculturation to both positive and negative societal behaviors, explaining an increased risk for poor dietary habits, substance use and dependence, and other health-related problems.

The use of a unidimensional model has a frequently cited shortcoming that limits its ability to draw consistent findings regarding acculturation's role in mental health. This model's primary limitation is its core assumption that acculturation occurs linearly and is inversely related to the shedding of one's traditional beliefs; however, it is evident that most immigrating individuals do not completely discard their cultural values throughout their time in the United States (Berry, 1980; Lara et al., 2005; Rudmin, 2003; Ryder, Alden, & Paulhus, 2000). In fact, the retention of cultural beliefs has been shown to continue into second and third generation immigrants (Cortes, Rogler, & Malgady, 1994; Gans, 1997; Portes & Rumbaut, 2001; Schwartz et al., 2010b). Thus, the unidimensional model does not account for individuals that retain their cultural values and also adopt a host society's values (i.e., biculturalism). This gap in the model creates uncertainty if acculturation effects have been demonstrated due to the process of acculturating or to co-occurring processes of acculturation, such as the merging of new beliefs

with previous beliefs. Due to this model's conceptual shortcomings, research has been shifting to more complex acculturative models in attempts to grasp a fuller understanding of the psychological processes associated with acculturation.

### *Bidimensional Models*

In order to better distinguish acculturation's role for immigrant families, a bidimensional model has been utilized. This model (also known as a segmented model) posits that acculturation is complex and cannot simply be measured on a single continuum (McNulty Eitle et al., 2009; Portes & Rumbaut, 2001). Instead, the model incorporates enculturation, the socialization and retention of one's cultural beliefs, as a similar, yet separate process. This model suggests that while acculturation and enculturation are likely negatively related, they are not mutually exclusive (Berry, 1980). The primary distinction of this model is that while these two processes may be related, they do not necessarily happen simultaneously (Gans, 1997). The bidimensional model posits that groups may acquire practices of the host culture while also maintaining previous beliefs of their own culture (McNulty Eitle et al., 2009). Unlike the unidimensional model, this framework assumes selective acculturation, a term describing the process in which individuals have the freedom to choose which elements of one's heritage to retain while also choosing which elements to adopt from the host culture (McNulty Eitle, 2009; Schwartz et al., 2010a).

Enculturation has shown increased importance in acculturative research as it has been identified as a protective factor against negative mental health (Lee, 2005; Yoon et al., 2013), associated with academic success (Akiba, 2007; Gonzales et al., 2007; Ong, Phinney, & Dennis, 2006; Supple, Ghazarian, Frabutt, Plunkett, & Sands, 2006), higher self-esteem (Kim & Omizo, 2003; Umana-Taylor, 2004; Umana-Taylor & Updegraff, 2007), self-efficacy (Kim & Omizo, 2010), and decreases in overall distress (Cano, & Castillo, 2010), substance use (Brook, Whiteman, Balka, & Gursen, 1998; Castro, Stein, & Bentler, 2009; Gil et al., 2000; Schwartz et

al., 2010b) and depression (Lee, 2005; Lorenzo-Blanco, Unger, Baezconde-Garbanati, Ritt-Olson, & Soto, 2012). Additionally enculturation has been linked to increased happiness (Wolsko, Lardon, Mohatt, & Orr, 2007), subjective well-being (Yoon, Hacker, Hewitt, Abrams, & Cleary, 2012) and overall life satisfaction (Alamilla, Kim, & Lam 2009; Edwards & Lopez, 2006).

Berry's (1980; 1997) bidimensional model aimed to merge acculturation and enculturation within one model and generated four acculturation groups by crossing an individual's cultural identity and their host society identity. The four following categories resulted: integration (oriented to both cultures), assimilation (predominantly oriented with the host culture), separation (predominantly oriented with the original culture), and marginalization (oriented with neither the host nor original culture; see [Figure 1](#)). Other studies have examined these two dimensions within four quadrants and have yielded similar categories labeled acculturated (corresponding with assimilation), unacculturated (corresponding with separation), bicultural (corresponding with integration), and marginal (corresponding with marginalization; Cuellar et al., 1995; Lopez et al., 2011). Previous research has shown that Latino immigrants largely identify with the integration/bicultural category in which they have integrated both culture's views into their own identity (Neto, 2002; Roccas, Horenczyk, & Schwartz, 2000; van Oudenhoven & Eisses, 1998). Further, studies have found that the extent to which an individual integrates both culture's views (i.e., integration/bicultural) is associated with better psychological outcomes when compared to those incorporating one culture (Berry, Kim, Minde, & Mok, 1987; LaFromboise, Coleman & Gerton, 1993; Losoya et al., 2008; Smokowski & Bacallao, 2007; Smokowski, Rose, & Bacallao 2008; Sullivan et al., 2007; Zarate, Bhimji, & Reese, 2005).

While the unidimensional model is more parsimonious in its conceptualization of acculturation, the bidimensional model incorporates a more representative view of the acculturative variations amongst immigrants (Ryder, et al., 2000). Thus, this model is more effective in the conceptualization of immigrant acculturation and variation than the

unidimensional model (Lee et al., 2003; Ryder et al., 2000; Schwartz et al., 2010a). Despite the increased effectiveness, this model's use of classifications has been criticized (Lopez-Class et al., 2011; Rudmin, 2009; Schwartz et al., 2010a). First, this model is criticized due to its attempts in categorizing dimensional aspects of acculturation and enculturation. The problems in these classifications arise when creating the four categories of Berry's model (1980). When categorizing individuals in a sample, an a priori cutoff value is required to distinguish between high and low levels of acculturation and enculturation. Many studies have classified individuals into these categories by utilizing the median or midpoint values within their sample (Coatsworth, Maldonada-Molina, Pantin & Szapocznik, 2005; Giang & Wittig, 2006). Utilizing a middle point ensures that half of a sample will be classified as high and the other half will be classified as low (Schwartz et al., 2010a); thus this process assumes that all four categories will be equally represented in every sample. Using a technique such as this assumes that all four categories are valid and exist equally in every sample, thus biasing the sample's characteristics. Additionally, when using cutoff values that are sample-specific, such as a median, these values will differ across studies and uniquely impact results, thus making cross-study comparisons difficult (Schwartz et al., 2010a).

This bidimensional model has also been criticized for its inclusion of the "marginalization" classification (Del Pillar & Udasco, 2004; Schwartz et al., 2010a). It is argued that it is highly unlikely for individuals to neither identify with their cultural background nor the host culture. As such, many studies suggest the removal of this category, since immigrants in various samples did not identify with this acculturative type (Lee et al., 2003; Rudmin, 2003; Schwartz & Zamboanga, 2008). Instead, it is suggested that marginalization may occur exclusively for specific groups due to societal circumstances (i.e., prejudice, historical circumstances; Berry 2006), and that it may not be a common acculturative experience (Lara et al., 2005). Despite the expansion on the unidimensional model, this conceptualization continues

to view acculturation and enculturation in a linear form, such that biculturalism would suggest the equal embrace of both cultures (Magana et al., 1996); however, many variations amongst bicultural individuals exists (e.g., Schwartz & Zamboanga, 2008). Due to the differences between acculturative groups and the lack of understanding of why such differences occur, more complex models are needed to accurately represent the processes of acculturation and enculturation and factors relating to differences amongst groups and individuals.

### *Multidimensional Models*

More recent research has argued for a multidimensional model of acculturation that incorporates contextual factors to better explain individual and group differences in acculturation and subsequent outcomes (Arcia et al., 2001; Lopez-Class et al., 2011; Navas et al., 2005; Schwartz et al., 2010a/b). These models propose that understanding context-specific factors is necessary when moving forward with acculturation research. In order to better capture acculturation as a process, Navas and colleagues (2005) propose a Relative Acculturation Extended Model (RAEM; see [Figure 2](#)) that considers acculturation strategies and attitudes of both the immigrant group and the host population. They argue that by gathering information about both groups, it aids in the clarification of the between-group relationships (i.e., collaborative, isolated or conflictual; Bourhis, Moise, Perreault, & Senecal, 1997; Navas et al., 2005). Additionally, this model examines variations of immigrant groups based on psychosocial and demographic variables that may influence discriminative experiences and attitudes towards receiving population (e.g., in-group bias, linguistic practices, perceived in-group and out-group similarity, inter-group contact, individualism-collectivism orientation, age, gender, religious and political orientation, education level, reason for immigrating, years in the new country, and country of origin) as well as multiple acculturation domains (e.g., political, work, economic, family, social, religious, and principles and values). With the inclusion of such variables, this

model attempts to quantify the differences between an ideal acculturation process and the real experience for both the immigrant and host populations.

Schwartz and colleagues (2010a) also aid in the development of a multidimensional approach to acculturation and state that acculturative research must move away from a “one size fits all” approach. In attempts to personalize the approach, the researchers posit that contextual factors must be included such as characteristics of migrants, original countries, socioeconomic status and resources, language fluency, circumstances surrounding migration (e.g., voluntary or involuntary migration), discrimination, receiving country context, and political climate (Schwartz et al., 2010a). This model suggests that the inclusion of additional factors provide insight to the acculturative experience above and beyond previous models. These additional factors aim to capture individual adjustment to the host society and connections with the host society. Lopez-Class and colleagues (2011) mimic this need for a broader conceptualization of acculturation, calling for the inclusion of interpersonal relationships, unique subgroups, and acculturation change over time.

The multidimensional model aims to understand acculturation in a systemic and context-related view; however, it is still in its infancy stages. These models attempt to comprehensively understand factors impacting acculturation and subsequent mental health outcomes by filling the gaps of previous unidimensional and bidimensional models. The use of these models will aid in a broader conceptualization of the immigration and acculturation process and it has the capacity to individualize acculturation understanding based upon specific environmental factors. The present study aims to utilize a multidimensional framework when understanding the role of acculturation in mental health for Latina women.

### **Acculturation and Depression**

### *Acculturation as a Risk Factor*

Previous research on the role of acculturation on depressive symptomology has been mixed. The majority of research on this topic has linked increases in acculturation to increases in depressive symptomology within Latino populations (Burnam et al., 1987; Finch & Vega, 2003; Gonzalez et al., 2001; Heilemann, Frutos, Lee & Kury, 2004b; Hovey, 2000a/2000b/2000c; Kaplan & Marks, 1990; Lorenzo-Blanco et al., 2011; Ramos, 2005; Rivera, 2007; Salgado de Snyder, 1987; Shattell, et al., 2009; Shattell, Smith, Quinlan-Colwell, & Villalba, 2008; Torres, 2010; Torres & Rollock, 2007). Shattell and colleagues (2009) conducted a qualitative study that examined depression amongst 30 Latina women via three focus groups. The researchers found that these women largely reported sociopolitical, economic, and familial stressors resulting from acculturation as explanations for their depression. These explanations differ from explanations given by other groups, which often revolve around individual or biological reasons.

In attempts to better explain the link between acculturation and depression, research has examined the role of co-occurring factors of acculturation that place minorities at augmented risk for distress. A commonly cited factor in acculturation is *acculturative stress*, a term referring to the emotional difficulties immigrants experience when attempting to adapt to a new environment. This concept recognizes that acculturating is a stressful experience, often accompanied with difficulties in communication, legal status, and employment (Berry, 2006; Berry & Annis, 1974; Berry et al., 1987; Smart & Smart, 1995; Torres, 2010). Higher acculturative stress has been linked to increased prevalence of psychiatric disorders, substance use, depression, and suicide ideation (Caplan, 2007; Constantine, Okazaki, & Utsey, 2004; Crockett, Iturbide, Torres Stone, McGinley, & Raffaelli, 2007; Hovey, 2000a; Ortega, 2000; Revollo, Qureshi, Collazos, Valero & Casas, 2011; Salgado de Snyder, 1987; Torres, 2010). Revollo and colleagues (2011) found that acculturative stress positively predicted depression in a sample of 414 Latin Americans immigrants in primary care centers in Spain. Specifically, the researchers found that



homesickness and psychosocial distress were the most elevated of acculturative stressors. Thus, it is theorized that the stressors related to acculturation may better explain its relation to depression in immigrating individuals.

In addition to acculturative stress, interpersonal factors such as discrimination and social acceptance have also been examined as contributors to the relation between acculturation and depression (Arcia et al., 2001; Chapman & Perreira, 2005; Finch & Vega, 2003; Potochnick & Perreira, 2010). It is posited that when individuals immigrate, they may not be equipped with the coping strategies necessary to combat situations of discrimination or group acceptance within a new culture. Potochnick and Perreira (2010) examined migration stressors and supports among 281 first-generation Latino immigrant youth. The researchers found that these individuals both experienced and perceived discrimination. More specifically, these reported discrimination experiences significantly predicted increases in depressive symptomology.

Other factors suggested to facilitate the relation between acculturation and depression include differential acculturation (i.e., acculturation gap between family members; Lau et al., 2005) and coping styles (Sanchez, Rice, Stein, Milburn, & Rotheram-Borus, 2009; Torres, 2010; Torres & Rollock, 2007; Ward & Kennedy, 2001). Differential acculturation is theorized to occur when there is a gap in acculturation among family members and friends. This gap occurs when family members acculturate at different speeds, typically with children acculturating faster than their parents, and it is suggested that this gap creates interpersonal and interfamilial conflict, which in turn impacts mental health (Gonzales, Deardorff, Formoso, Barr, & Barrera, 2006; Smokowski et al., 2008; Tezler, 2011). Coping styles have also been suggested to play a role in the relation between acculturation and depression (Crocket et al., 2007; Torres, 2010). Torres (2010) found that low levels of active coping are associated with higher depression in Latino populations. Torres theorized that individuals with low active coping have more difficulty

transitioning into a new culture and effectively handling accompanying acculturative stressors, thus increasing their risk for depression.

#### *Acculturation as a Protective Factor*

While there appears to be much evidence regarding the positive link between acculturation and depression, other studies suggest that acculturation can play a protective role in mental health (Constantine et al., 2004; Cordero & Kurz, 2006; Cuellar & Roberts, 1997; Falcon & Tucker, 2000; Gonzalez, et al., 2001; Kaltman, Green, Mete, Shara, & Miranda, 2010; Masten, Penland, & Nayani, 1994; Potochnick & Perreira, 2010). Kaltman and colleagues (2010) examined 64 Latina immigrants involved in a RCT for depression and found that increased years in the United States significantly predicted decreased risk for depression. Additionally, Constantine and colleagues (2004) found that higher English language fluency predicted lower depression among 320 international college students.

These studies that have identified acculturation as a protective factor for depression theorize that “successful” acculturation is associated with decreased social and societal stressors such as discrimination and communication barriers (Constantine et al., 2004). Further, these studies suggest that as acculturation increases (e.g., English language fluency), it is likely that social support from the host country also increases (Potochnick & Perreira, 2010). Amongst the studies that show support for acculturation as a protective factor, it is largely accepted that acculturating to a host society relieves acculturative stressors (e.g., communication, employment opportunities) thus allowing for adjustment to and stabilization in a host society.

#### *Acculturation as a Neutral Factor*

Despite these findings of acculturation as a protective factor of mental health, other researchers have shown that acculturation has no relation with depression once controlling for demographic variables (i.e., income, education, marital status; Burnam et al., 1987; Cuellar &

Roberts, 1997). Cuellar and Roberts (1997) conceptualized acculturation within a bidimensional model and utilized standardized measures to examine acculturation in 1,271 first and second generation Latinos in their first year of college. Results of this study indicate that depression was strongly associated with socioeconomic status and gender, more so than acculturation or ethnic identity. Specifically, they found that socioeconomic status and gender predicted depression scores, while acculturation did not. Even amongst studies with significant findings on acculturation show a similar trend in which gender, education, and finances were all deemed as stronger predictors for depressive symptomology than acculturation (e.g., Lorenzo-Blanco et al., 2011; Rivera, 2007).

These results call into question findings of previous studies that did not control for demographic variables including gender, socioeconomic status, and education. The studies that resulted in insignificant findings of a relation between acculturation and depression suggest that education, gender and income are all strong predictors of depression not only amongst Latino populations, but in the general sample as well (Rivera, 2007). They argue that without controlling for or incorporating these variables in one's study, it is impossible to comprehend the magnitude and direction of acculturation's impact on depression (Cuellar & Roberts, 1997).

#### *Previous Studies' Limitations*

In summary, acculturation has been identified as a risk factor (e.g., Heilemann et al., 2004b; Ramos, 2005; Rivera, 2007), protective factor (e.g., Cordero & Kurz, 2006; Potochnick & Perreira, 2010), and a nonsignificant predictor (Burnam et al., 1987; Cuellar & Roberts, 1997) for depressive symptomology within Latino populations. Thus, it is evident that the relation between acculturation and depression remains unclear. Attempts to explain the conflicting results often defer to methodological, measurement, or sample characteristic differences.

Upon review, it is evident that a major source of inconsistency across studies examining acculturation is the measurement of the construct at hand. Across numerous studies proxies are utilized as measures of acculturation (i.e., years in the United States, primary language). While the use of these measures may be superficial indicators of acculturation, they fail to capture the depth of the construct they intend to measure (Lam, 1995; Thomson & Hoffman-Goetz, 2009). These substituted measures inadequately and inconsistently measure acculturation, as they do not encompass behavioral or social components of change, leaving large variability in the construct and resulting in disparities across studies (see [Table 1](#)). This inconsistent and surface-level measurement has impacted our ability to have a consistent and coherent understanding of the relation between acculturation and depression.

In addition to acculturation measurement, the acculturative model utilized (i.e., unidimensional, bidimensional, and multidimensional) has also aided in current mixed findings on acculturation. The differences in these theoretical models impact the included (or excluded) demographic and interpersonal variables such as socioeconomic factors, relationship status, education level, and familial support and conflict (Alegria et al., 2007a; Cuellar et al., 1997; Gonzalez et al., 2001; Myers et al., 2002; Rivera, 2007; Torres & Rollock, 2007), thus impacting findings on the direction and strength of the relation between acculturation and depression. Further, studies continue to use findings from unidimensional models as support for their current studies, despite evidence of its flawed and outdated nature. The continued use of these results distorts current understanding of the relation between acculturation and depression and may continue to impact study development in the future. In order to address these limitations in the current body of research regarding acculturation's role in Latino mental health, the current study utilized formalized measures of acculturation within a multidimensional framework. This multidimensional model will attempt to capture contextual factors surrounding acculturation by including two key factors: social provisions and family resources.

## Social Provisions

It is widely accepted that social support is connected to mental health, such that increases in social support are associated with improvements in mental health, and vice versa. Several studies have shown that individuals with depression tend to have less social support, such that they may be single, have fewer members in their friend networks, or receive less familial support (e.g., Alegria et al., 2007b; Aneshensel & Stone, 1982; Lin & Dean, 1984; Raffaelli et al., 2012; Stice, Ragan, & Randall, 2004). While low social support is generally accepted as a risk factor for depression, it is noted to have weighted importance for specific ethnic groups (Almeida, Molnar, Kawachi, & Subramanian, 2009; Glazer, 2006; Kim, Sherman, Ko, & Taylor, 2006; Russell & Taylor, 2009; Taylor, Welch, Kim & Sherman, 2007). It is argued that certain cultural groups may have an amplified importance on social support, thus making the effects more pronounced in such groups. These groups often stem from collectivistic cultures, in which family and group goals are placed above individual needs (Kim, Sherman, & Taylor, 2008; Moscardino, Scrimin, Capello, & Altoe, 2009).

The Latino population has been identified as a group that values social connection and support (Alegria et al., 2007b). This is demonstrated by a salient value of *familismo* (familism), referring to feelings of loyalty towards family members, specifically viewing them as an extension of the self (Campos et al., 2008; Chapman & Perriera, 2005; Edwards & Lopez, 2006; Sabogal, Marin, Otero-Sabogal, VanOss Marin, & Perez-Stable, 1984). Familism is characterized by a strong identification and attachment to family members and often associated with increased contact between family members, perceived familial support, and life satisfaction (Edwards & Lopez, 2006; Knight & Sayegh, 2009; Losada et al., 2010; Rodriguez, Bingham Mira, Paez, & Myers, 2007; Romero & Ruiz, 2007) and decreased parent-adolescent conflict, child maltreatment, and child suicide (Campos et al., 2008; Coohy, 2001; Kuhlberg, Pena, & Zayas, 2010; Pena et al., 2011). Due to this salient value, it is suggested that decreases in social support,

primarily familial support, would pose an attenuated threat for depression within Latino populations (Alegria et al., 2007a; Sayegh & Knight, 2010).

Within Latino samples, low social support has been linked to increases in physical and mental health difficulties (Alegria et al., 2007a/b; Bromberger et al., 2004; Finch & Vega, 2003; Gil et al., 2000; Hovey, 2000a/b; McNulty Eitle et al., 2009; Oppedal, Roysamb, & Lackland Sam, 2004; Potochnick, & Perreira, 2010; Sayegh & Knight, 2010; Viruell-Fuentes, 2007). More specifically, aspects of low social support have been linked to increased depression within Latino samples including single marital status, low perceived support from spouses, high family burden and conflict, and low perceived social standing (Alegria et al., 2007b; Bromberger et al., 2004; Hovey, 2000a/b/c; Myers et al., 2002; Roberts & Roberts, 1982; Salgado de Snyder, 1987). Russell and Taylor (2009) examined 947 older adults with and without disabilities. The researchers found that living alone significantly predicted higher depressive symptoms among Latino individuals, however it was not a significant predictor for non-Latinos. Additionally, the researchers found that social support moderated the relation between living alone and depression among Hispanic individuals. These results highlight the importance of social support within depression specifically for individuals with core values of social connection.

Social support has been shown to attenuate depressive symptomology in Latino populations, such that higher social support is associated with decreases in depressive symptomology and vice versa (Russell & Taylor, 2009). Acculturation has been proposed to disrupt social support within Latino families where individuals with increased acculturation experience decreased social support (Caplan, 2007). Studies have attempted to better understand this finding and have determined that differential acculturation between family members and friends can result in familial conflict and discord, and thus decreases in familial social support (Alegria et al., 2007a/b; Miranda, Bilot, Peluso, Berman, & Van Meek, 2006; Smokowski et al., 2008). Further, children typically acculturate at increased speeds when compared to older

generations. When this occurs, younger generations often begin to identify less with collectivistic societies, and more with the individualistic host society. These shifts in values may directly impact the beliefs of familism, thus resulting in a decrease in social support. Rivera (2007) examined 850 South Florida Latinos and found that familial support mediated the relation between acculturation and depression, such that as acculturation increases, familial support decreases, and thus depression increases. Due to the central role of social support within these families, the present study will examine the role of social support within the relation of acculturation and depression.

### **Family Resources**

When examining depression in a general population, it is established that decreased resources (e.g., income, education, employment status) is associated with increased depressive symptomology (Billings & Moos, 1985; Eshbaugh, Lempers, & Luze, 2006; Gavin et al., 2010; Herman & Marcenko, 1997; Heilemann et al., 2004b; Holahan, Moos, Holahan, & Cronkite, 1999; Irwin, LaGory, Ritchey, & Fitzpatrick, 2008; Plant & Sachs-Ericsson, 2004; Yang, 2006). Thus far, research has consistently linked individuals with low income (Aranda, Lee, & Wilson, 2001; Heilemann, Lee, & Kury, 2002; Ritter, Hobfall, Lavin, Cameron, & Hulsizer, 2000), unemployment status (Jefferis et al., 2011; McGee & Thompson, 2015; Wade & Cairney, 2000), low education (Bauldry, 2015; Gonzalez-Guarda, Peragallo, Vasquez, Urrutia, & Mitrani, 2009; Ross & Mirowsky, 2006), limited financial resources (Heilemann et al., 2002; Horowitz, Damato, Duffy, & Solon, 2005; Taylor, Rodriguez, Seaton, & Dominguez, 2004), and homelessness (DeForge, Belcher, O'Rourke, & Lindsey, 2008; Rota-Bartelinke & Lipmann, 2007; Saade & Winkelman, 2002) to higher rates of depression in the general population. When examining this link between resources and depression, researchers posit that limited resources often result in increased challenges and overall life stress, thus impacting mental health (e.g., Billings & Moos, 1985; Fisher et al., 2001; Ritter et al., 2000).

Historically, minority populations such as Blacks, Latinos and Asians have lower levels of household income, education and increased levels of unemployment (Davila, Mora & Hales, 2008; Lee & Aytac, 1998; Marotta & Garcia, 2003; Perez-Stable, Marin, & VanOss Marin, 1994). Resource availability has been further examined in minority populations to better understand why disparities between whites and minority populations emerge. Research has examined the role of immigrating and acculturating in resource adequacy to better understand this gap. Thus far, research has found that immigrating to a new country negatively impacts one's economic and financial resources, as immigrants often leave jobs, homes, and families behind (Berry, 2006; Chapman & Perreira, 2005; Lara et al., 2005; Shattell et al., 2008; Shattell et al., 2009). Thus, this process of moving and starting "fresh" can be laden with economic difficulties. Additionally, many Latino families experience barriers associated with acculturation that create difficulties in employment and thus income and availability of resources. Such barriers include language, discrimination, and lack of employment options and proper education (Heilemann, Coffey-Love, & Frutos, 2004a; Smart & Smart, 1995; Viruell-Fuentes, 2007). These factors can inhibit upward societal mobility and indirectly impact resource adequacy for minority families.

While the challenge of immigrating has been shown to decrease familial resources, acculturation has been shown to aid in increasing such resources. Research has shown that increases in acculturation are associated with increases in academic success, educational attainment, and income (Gans, 2007; Gavin et al., 2010; Lopez, Ehly, & Garcia-Vazquez, 2002; Martinez, DeGarmo & Eddy, 2004; Mason, 2004). It is argued that as individuals become more acculturated to the United States' culture, the society's emphasis on education and monetary success will be translated to acculturating individuals, thus increasing their desire for increases in education and employment and resulting in increases in economic resources. Due to the unique relation between resources and depression and resources and acculturation, the current study will examine the role of familial resources within the relation of acculturation and depression.



## **Current Study**

The current study aimed to clarify the relation between acculturation and depression within Latina women. There are several competing models regarding the concept of acculturation and its role in depression. This study examined these three models from the literature: unidimensional, bidimensional, and multidimensional. While these models are related and often build off one another, this study sought to examine them more closely and the way in which model type influenced discrepant results in extant literature. Specifically, this study aimed to determine the role of these models and their differences in inconsistent findings regarding acculturation. To aid in consistency across models and previous research, the following demographic variables were controlled for: age, level of education, marital status, income, country of origin, and years in the U.S. These variables are included as they have demonstrated significant associations with acculturation and/or depression (e.g., Cuellar & Roberts, 1997; Lorenzo-Blanco et al., 2011; Lopez-Class et al., 2011; Rivera, 2007). These models of acculturation and mental health were tested using pre-service data from a randomized control trial (RCT) of a cultural adaptation of a home-based parenting program.

### *Hypothesis One: Unidimensional Models*

The unidimensional model of acculturation examines the process of acculturation on a continuum. This study examined this model by determining the effect of acculturation, as measured by dominant society immersion, on depressive symptoms while controlling for demographic variables previously stated. Consistent with previous research, it is hypothesized that acculturation will be positively associated with depressive symptoms, such that as acculturation increases, depressive symptoms increase. While this model is not frequently used in present day research, this study tested this model to determine if more complex models are a better fit above and beyond this model. Additionally, testing this model will determine if future research can continue to utilize results from studies implementing the unidimensional model.

### *Hypothesis Two: Bidimensional Models*

The bidimensional model of acculturation views acculturating on two separate continuums, with acculturation and enculturation formulated as co-occurring, yet separately developing processes. This study investigated the effect of acculturation and enculturation on depressive symptoms while controlling for demographic variables. In order to aid in previous criticisms of Berry's (1980) acculturative categories, this model examined acculturation and enculturation dimensionally, on 2 separate continuums (i.e., within the same model but measured independently).

*Hypothesis 2a.* Consistent with previous research, it is hypothesized that acculturation and enculturation will be negatively associated, such that as acculturation increases, enculturation decreases.

*Hypothesis 2b.* It is additionally hypothesized that enculturation will exhibit a negative effect on depressive symptoms, as enculturation has been identified as a protective factor against mental health difficulties.

*Hypothesis 2c.* It is further hypothesized that due to the inclusion of enculturation, the bidimensional model will demonstrate a better fit for depression scores when compared to the unidimensional model.

### *Hypothesis Three: Multidimensional Models*

The multidimensional model of acculturation views acculturation and its co-occurring processes as a complex system. It necessitates the inclusion of co-occurring contextual factors that better explain mental health outcomes of acculturation. The current study proposed two unique contributors to depression within the context of acculturation: social support and family resources. As decreased social support has been consistently linked to increased depression in the general population (e.g., Grav, Hellzen, Romild, & Stordal, 2011; Malone, et al., 2000; Meda ,

Shen, Schwarz, Farrell, & Mallon, 2013; Raffaelli et al., 2012; Stice et al., 2004) and is noted as holding particular importance amongst Latinos (e.g., Alegria et al., 2007b; Bromberger et al., 2004; Hovey, 2000a/b), the present study examined the role of social support in depression amongst acculturating Latina mothers. Further, as the effect of resource adequacy on depression has been established in extant literature (Billings & Moos, 1985; Hielemann et al., 2004; Irwin et al., 2008; McGee & Thompson, 2015; Rota-Bartelink & Lipmann, 2007), and has shown association with acculturation and immigration (e.g., Alegria et al., 2007a; Myers et al., 2002; Roberts & Roberts, 1981; Salgado de Synder, 1987), this study examined family resources in the multidimensional model of acculturation and depression.

The current study tested a multidimensional model by examining the effect of acculturation, enculturation, social support, and resource adequacy on depressive symptoms while controlling for empirically supported psychosocial variables.

*Hypothesis 3a.* It is hypothesized that when examining co-occurring factors, social support and resource adequacy will significantly be associated with depression, such that lower levels of support and resources will predict higher depressive symptomology. The relation between acculturation and enculturation with depression is explored in this model to determine changes in the relation due to changes in model framework.

*Hypothesis 3b.* Finally, due to the inclusion of the contextual factors and thus a broader understanding of acculturation, it is hypothesized that this model will demonstrate a better fit with depression scores than both the unidimensional and bidimensional models.

#### *Hypothesis Four: Model Selection*

Finally, a model selection approach utilizing Akaike Information Criteria (AIC) and Bayes Information Criteria (BIC) was applied to determine the best fitting model. This approach aids in evaluating the additional variability explained in depression scores by adding predictor

variables to the model. Both information criteria were used as they each present biased results; the AIC often chooses a model that is too large, resulting in too many predictors and the BIC has an increased chance of choosing a model that is too small. These criteria were examined together to incorporate a best fitting model of the predictors of depression for this sample. It is hypothesized that the multidimensional model will have the best model fit, as it is taking a more contextual and comprehensive view of the relation.

## CHAPTER III

### METHODOLOGY

#### **Participants**

The present study utilized baseline data from a study evaluating the effectiveness of Safecare+ (SC+), a home-based child maltreatment prevention model that was culturally adapted for a Midwestern Latino community. The larger study evaluated the effectiveness of the SC+ from 2010-2015, when compared to a service as usual (SAU) group. SC+ addresses three main areas: child health, home safety, and parent-child interaction. The majority of participants were referred by friends, family, or by themselves. Participants were included in the study if they were a primary caregiver of at least one child five years of age or younger and were experiencing parenting stress or risk factors (e.g., poverty, single parenthood, depression, substance abuse, and intimate partner violence). Participants were excluded from the study if the primary caregiver was younger than 16, if they had a current child welfare case, if they had greater than two previous child welfare referrals, if the primary caregiver had a substantiated report of perpetrating child sexual abuse, and any other conditions that would prevent the primary caregiver from providing valid self-report data (e.g., severe psychosis, severe mental retardation). For the current study, additional inclusion criteria were complete demographic information and participants were the female primary caregiver.

#### **Measures**

The following measures were administered during a single session accompanied by additional measures that were collected for the larger study. All measures were available in Spanish and English. For measures that were not provided in Spanish by the measure developers, items were first translated to Spanish and then translated back to English to ensure measure accuracy.

*Demographic questionnaire.* Demographic information was collected for all participants including, but not limited to the following: gender, marital status, education level, number of children within the home, current work status, country of origin, primary language, and years in the United States. See Appendix A.

*Depression.* The Center for Epidemiology Studies Depression Short-Form (CESD-SF; Radloff, 1997) was used to assess depressive symptomology. The CESD-SF consists of 12 items that assess how often individuals experience depressive symptomology within the past week. Items assessed irritability, changes in appetite, concentration, restless sleep, psychomotor retardation, and feelings of sadness, loneliness, fearfulness, and depression. Each item is measured on a 4-point scale, each ranging from “Rarely or never (less than 1 day)” to “Most or all of the time (5-7 days).” Items are summed to provide a single depression score, with higher scores indicating higher depressive symptomology. The CESD-SF has shown strong validation as a measure of depression throughout the lifespan (Beekman et al., 1997; Lewinsohn, Seeley, Roberts & Allen, 1997; Lyness et al., 1997), exhibiting good reliability (Clark, Mahoney, Clark, & Eriksen, 2002; Knight, Williams, McGee, & Olaman, 1997), internal consistency (Van Dam & Earleywine, 2010), criterion validity (Beekman et al., 1997; Haringsma, Engels, Beekman, & Spinhoven, 2004), and convergent and discriminant validity (Van Dam & Earleywine, 2010). Additionally, the CESD-SF has shown good validation within Latino samples (Grzywacz, et al., 2009; Grzywacz, Hovey, Seligman, Acury, & Quandt, 2006) and in the current study ( $\alpha=.93$ ). See Appendix B.

*Acculturation.* The Stephenson Multigroup Acculturation Scale (SMAS; Stephenson, 2000) was utilized to assess attitudinal and behavioral aspects of acculturation and enculturation. The SMAS is comprised of 32 items, and 2 subscales, each assessing the following domains: language, interaction, media, and food. The Dominant Society Immersion subscale consists of 15 items and assesses acculturation to the dominant cultural group of the United States. Examples of questions in the Dominant Society Immersion subscale include “I am informed about current affairs in the United States,” “I feel at home in the United States,” “I attend social functions with American people,” and “I feel comfortable speaking English.” The Ethnic Society Immersion subscale consists of 17 items and assesses enculturation to the participants’ own cultural group. Examples of questions in the Ethnic Immersion subscale include, “I attend social functions with people from my native country,” “I speak my native language at home,” “I stay in close contact with family members and relatives in my native country,” and “I like to listen to music of my ethnic group.” Each item contains a 4-point Likert type scale (1=true, 2 = partly true, 3 = partly false, 4 = false) assessing how applicable each item is to the individual. Each subscale yields a total sum, in which lower scores represent higher indications of acculturation/enculturation. For the current study, the scale was reverse scored, so that higher scores indicate more acculturation/enculturation. This measure has demonstrated acceptable to high internal consistency and reliability in extant literature (Huynh, Howell, & Benet-Martinez, 2009; Matsudaira, 2006; Miville & Constantine, 2006; Stephenson, 2000) and in the current study ( $\alpha = .86$  for acculturation subscale,  $\alpha = .68$  for enculturation subscale). See Appendix B.

*Social Support.* The Social Provision Scale short form (SPS; Russell & Cutrona, 1984) was used to assess perceived social support. The SPS is a 12-item questionnaire, in which participants rate their overall perceived social support, including support from parents, friends, and partners. This measure consists of six dimensions of support including attachment, guidance, reliable alliance, social integration, reassurance of worth, and opportunity of nurturance.

Examples items of this questionnaire include, “There are people I can depend on to help me if I really need it,” “I have close relationships that provide me with a sense of emotional security and well-being,” and “I feel a strong emotional bond with at least one person.” Each dimension is derived from 2 items. All items are measured on a 4–point scale that evaluates the extent to which the participant perceives their support, ranging from Strongly Disagree to Strongly Agree. Items 2, 5, 6, 9 and 10 were reversed scored and then the measure was scored as a total sum, with higher scores indicating higher levels of perceived support. The SPS has demonstrated good reliability and internal consistency across various samples and cultures (Cutrona, Hessling, Bacon & Russell, 1998; Cutrona & Russell, 1987; Mancini & Blieszner, 1990) and within the current study ( $\alpha=.73$ ). See Appendix B.

*Family Resources.* The Family Resource Scale-Revised (FRS; Dunst & Lee, 1987) was utilized to assess the adequacy of resources among caregivers. This measure consists of 30 items on a 5-point scale ranging from 1, “not at all adequate” to 5 “almost always adequate.” The FRS is comprised of eight subscales including growth/support, health necessities, nutrition/protection, physical shelter, intrafamily support, communication/employment, childcare, and income. Example items include food for two meals a day, money to buy necessities, money to pay monthly bills, time for family to be together, dental care for your children, and toys or activities for your children. These items within each subscale are summed to yield subscale scores, which are also summed to create an overall resource score, in which higher scores represent more adequate resources. This measure has demonstrated good reliability and internal consistency across diverse samples (Brannan, Manteuffel, Holden & Heflinger, 2006; Dunst & Lee, 1987; Van Horn, Bellis, & Snyder, 2001) and in the current sample ( $\alpha=.87$ ). See Appendix B.

## **Procedure**

Approval from the appropriate Institutional Review Board was obtained prior to study implementation. Participants were referred to the study via informal and professional service



programs and then consented using bi-lingual home-based service providers and data collectors. Trained data collectors provided paper consents, questionnaires and HIPAA forms. These forms were offered in Spanish, unless the parent requested English. Data collectors were part of the study staff (i.e., not the service providers) and contacted and interviewed consenting participants. Further, all data collectors remained present during study completion to assist with questions or concerns. Data were collected at baseline, post-services, and six-months after services. The current study examined only data collected at wave one (baseline) and from the following measures: demographic questionnaire, CES-D, SMAS, SPS, and FRS. All measures were administered via Tablet-PC's running ACASI software via touch-screen responses. At each time point, participants received \$50 gift certificates to reimburse them for their time and participation.

### **Statistical Analyses**

A negative binomial regression modeling approach was used to examine the relation between acculturation and depression. This approach was utilized to identify the roles of enculturation and contextual factors including social support and family resources within this relation. Three separate models were examined to determine if and how the relation between acculturation and depression changed across model type (unidimensional, bidimensional, and multidimensional). In addition to this analytic process, a model selection approach was applied to determine the model with the best fit for depressive symptom scores. Throughout negative binomial regression analyses, demographic variables were entered into each model in an effort to control for confounding effects. For the current study, demographic variables included age, income, pregnancy status, child maltreatment history, education level, work status, marital status, years in the United States, primary language, and country of origin.

## CHAPTER IV

### RESULTS

#### **Descriptive Statistics**

Characteristics of the study participants are summarized in Table 2. Of 342 female caregivers of young children enrolled in SC+, nine participants were excluded for incomplete demographic data, resulting in a final sample size of 333 Latina women. The caregivers were between 16 and 44 years of age ( $M=28.47$ ,  $SD=6.03$ ) and all identified as Latina (100%). Almost half of the participants were married (47%), followed by cohabitating relationship status (33%) and single (12.3%). The average monthly income of our sample was \$1,355.39 ( $SD=697.64$ ). The majority of the sample had earned a High School Diploma or GED (53%) and was currently unemployed (75%). Participants in our sample had resided in the United States between 0-35 years ( $M=9.88$ ,  $SD=5.62$ ), with the majority of participants originating from Mexico (80%) and identifying Spanish as their primary language (95%).

#### **Initial Examination of the Data**

Prior to conducting analyses, the data were examined for normality and completeness. Analysis of skewness and kurtosis of depression scores fell within the acceptable range of  $\pm 2$  (Cameron, 2004), however, examination of the Shapiro-Wilk statistic ( $p<.001$ ) and normality plots suggest the data were positive skewed. Additionally, analysis of the sample means and variances suggested that depression scores were overdispersed, in which sample means are smaller than the sample variances. Due to the positive skewness of the data and the

overdispersion, a negative binomial regression modeling approach was used to examine predictors of depression in Latina women. This approach was utilized as it is the best fit model for such data including the discrete outcome variable, the positive skewness, and the overdispersion. Bivariate correlation analyses were conducted to examine initial relations between our predictor and outcome variables. Results of these analyses are summarized in Table 3.

### **Hypothesis One: Unidimensional Model**

A negative binomial regression model was conducted to examine a unidimensional model of acculturation. This model included demographic variables and the Dominant Society Immersion (acculturation) subscale as predictors of depressive symptoms. This model demonstrated a small effect on the data, as demonstrated by the small pseudo  $R^2$  value (McFadden  $R^2=.039$ ). Though McFadden  $R^2$  values tend to be much smaller than traditional  $R^2$  values, this value indicates a small effect, with values between .20-.40 indicate excellent fit (Cameron & Windmeijer, 1996). Within this model, acculturation did not significantly predict depression scores ( $b=-.084$ ,  $p=.449$ , 95% CI=  $-.307-.127$ ). However, results revealed a significant effect of the presence of child maltreatment history on depressive symptoms ( $b= .427$ ,  $p<.01$ , 95% CI= $.127-.740$ ), suggesting that individuals with childhood maltreatment experiences have increased depressive symptoms than women without such experiences holding all variables in the model constant. See Table 4 for the model's complete results.

### **Hypothesis Two: Bidimensional Model**

A negative binomial regression model was conducted to examine the bidimensional model of acculturation and depression. The full model included demographic variables, Dominant Society Immersion scores (acculturation), and Ethnic Society Immersion scores (enculturation) as predictor variables and depressive symptom scores as the dependent variable. Results of these analyses can be found in Table 5.

*Hypothesis 2a.* Results of correlational analyses revealed that acculturation and enculturation were not significantly correlated ( $r = .089, p = .10$ ) within our sample. These findings strengthen the posited theory that acculturation and enculturation are separate and independent constructs. Though it was hypothesized that these scores would be moderately correlated to demonstrate similar processes, these results highlight the need to recognize acculturation and enculturation as separate and unique processes.

*Hypothesis 2b.* Results of the negative binomial regression model revealed a significant negative effect of enculturation on depressive symptoms ( $b = -.527, p < .05, 95\% \text{ CI} = -.992 - -.062$ ), such that individuals with higher enculturation scores demonstrated lower depressive symptomology. Further, child maltreatment history exhibited a significant effect on depressive symptoms ( $b = .404, p < .05, 95\% \text{ CI} = .097 - .711$ ), such that individuals with such a history had increased depressive symptoms than those without such histories. Acculturation did not significantly predict depressive symptomology in the bidimensional model ( $b = -.027, p = .81, 95\% \text{ CI} = -.251 - .196$ ).

*Hypothesis 2c.* Finally, the bidimensional model demonstrated a larger effect size (McFadden  $R^2 = .042$ ) than the unidimensional model (McFadden  $R^2 = .039$ ) on depression scores, however, these effect sizes remain small.

### **Hypothesis Three: Multidimensional Model**

To examine acculturation and depression within a multidimensional model, a negative binomial regression analysis was conducted. The model included demographic variables, acculturation, enculturation, social provisions, and family resources as predictor variables and depressive symptoms as the outcome variable. See Table 6 for complete model results.

*Hypothesis 3a.* Results of the negative binomial regression model suggest that resource adequacy is significantly related to depressive symptoms ( $b = -.013, p < .01, 95\% \text{ CI} = -.019 - -.007$ )

such that increases in resource adequacy is related to fewer depressive symptoms. Additionally, social provisions was significantly negatively related to depressive symptoms ( $b = -.025, p < .05$ , 95% CI = -.045 - -.005), suggesting that increases in social provisions relates to fewer depressive symptoms in our sample. Upon the addition of resources adequacy and social provisions, neither acculturation ( $b = .094, p = .31$ , 95% CI = -.088-.276) nor enculturation ( $b = -.238, p = .21$ , 95% CI = -.045 - -.005) were significant predictors of depression. Further, full-time employment ( $b = .405, p < .05$ , 95% CI = .047-.763) and child maltreatment history ( $b = .248, p < .05$ , 95% CI = .003-.492) demonstrated significant positive effects on depression within this model. The effect of student work status ( $b = .627, p = .053$ , 95% CI = -.009-1.263) and Spanish as a primary language ( $b = .496, p = .057$ , 95% CI = -.015-1.007) were approaching significance.

*Hypothesis 3b.* In line with our hypothesis, the multidimensional model demonstrated a stronger effect size on depression scores (McFadden  $R^2 = .053$ ) than both the unidimensional model (McFadden  $R^2 = .039$ ) and the bidimensional model (McFadden  $R^2 = .042$ ).

#### **Hypothesis Four: Model Selection**

Model fit criteria (AIC and BIC) were examined to determine the best fitting model to describe the relation between acculturation and depression. See Table 7 for the model fit criteria of the unidimensional, bidimensional, and multidimensional models. The model fit criteria indicate that the multidimensional model is the best fitting model as its fit criteria (AIC=2126.99, BIC=2203.99) are smaller than both the unidimensional (AIC=2146.90, BIC=2215.45) and bidimensional models (AIC=2143.84, BIC=2216.19). Further, chi-square analyses indicated that the multidimensional models' fit is significantly better than both the unidimensional model ( $\chi^2 = 14.44, p < .01$ ) and the bidimensional model ( $\chi^2 = 11.91, p < .01$ ); however, the bidimensional model does not demonstrate a significantly better fit than the unidimensional model ( $\chi^2 = 2.53, p = .11$ ). These results suggest that the multidimensional model

that includes contextual factors demonstrates the best fit of predictors for depressive symptoms when compared to the unidimensional and bidimensional model.

### **Post-Hoc Analyses**

Upon examination of the multidimensional model, social provisions demonstrated a negative effect on depressive symptomology ( $b = -.025, p < .05$  95% CI = -.045 - -.005). This finding indicates that social support plays an important role in decreasing depressive symptoms for these families. The SPS assesses the availability of social support generally for individuals and does not specify a particular individual or their relation to the respondent, thus it is likely this scale does not capture social support directly from one's family. This familial concept may be essential to examine within the Latino culture, as the concept of *familismo* (feelings of loyalty towards family members) has been established to play a large role within this culture. To assess this limitation in the SPS, the current study conducted a post-hoc analysis to examine the role of immediate familial and extended familial connections on depressive symptoms within the sample.

A negative binomial regression was utilized in the post-hoc analysis to examine six additional questions regarding participants' feelings towards their immediate and extended family. Three questions on the demographic questionnaire assessed feelings of pride, feelings of closeness, and amount of activity one experiences with their immediate family and extended family (i.e., "Evaluate your feelings of pride regarding the accomplishments of your family;" "Evaluate your feelings of closeness within your family;" "Evaluate the extent to which the family does things together"). Each of the three questions were asked twice, once in regards to the participant's immediate family and then once in regards to their extended family. Participants responded on a 5-point scale, each ranging from "Low" to "High." These six items were included within the multidimensional model to examine the unique role of familial connection on depressive symptoms. See Table 8 and 9 for the results of this analysis.

Results of the post-hoc negative binomial regression model demonstrated a negative effect of feelings of pride for one's immediate family's accomplishments on depressive symptoms ( $b = -.472, p < .05, 95\% \text{ CI} = -.929 - -.016$ ), such that individuals with high levels of family pride had less depressive symptoms than those with low levels of family pride. However, upon examination of pairwise comparison analyses, this significant effect was not statistically different than the effect for those with low or medium levels of family pride ( $p = .082$  and  $p = .242$ , respectively). Other items regarding feelings of closeness and family activity were not significant for either the immediate family or the extended family. The total score on the SPS (social provisions) had a nonsignificant effect on depressive symptoms once adding the additional six family-specific items into the model ( $b = -.008, p = .552, 95\% \text{ CI} = -.035 - .019$ ). Finally, resource adequacy continued to demonstrate a significant negative effect on depressive symptoms when the additional family connection items were included in the model ( $b = -.012, p < .01, 95\% \text{ CI} = -.020 - -.004$ ).

## CHAPTER V

### DISCUSSION

The present study examined the relation between acculturation and depression within three acculturative models (unidimensional, bidimensional, and multidimensional) for Latino women. It was hypothesized that the multidimensional model of acculturation would demonstrate the best fit for depression scores, as this model aims to contextually assess acculturation and mental health. The findings of our study suggest that acculturation was not related to depression within any of the models. Further, while enculturation was significantly related in the bidimensional model, it became insignificant upon the inclusion of family resources and social support. When examining the three models in their entirety, our results support the hypothesis that the multidimensional model was the best fit for depressive symptoms, as demonstrated by smaller model fit criteria and larger pseudo  $R^2$  values. This finding suggests that contextual variables, such as resource adequacy and social support, play a key role in depression for Latino families at high risk. Hypotheses one through three further investigated predictors of depression within each of the three acculturative models.

#### **Unidimensional Model**

In line with previous research, it was predicted that the unidimensional model would demonstrate a significant positive effect of acculturation on depression, such that as acculturation increased, depressive symptoms increased (e.g., Ramos, 2005). Contrary to this hypothesis, the current study found no significant effect of acculturation on depression within both correlational



analyses and the unidimensional model. Additionally, years in the United States (a commonly utilized proxy measure of acculturation) was also not significantly correlated with depression in the present sample. Together, these findings contradict some studies' results, though it is consistent with findings that state other demographic variables play a larger role in depression than acculturation (Algeria et al., 2007a). Findings of this unidimensional model offer clarity to previously mixed results on the relation between acculturation and depression and highlight the importance of including demographic variables and risk factors for depression within these models. Within the unidimensional model, child maltreatment history demonstrated a significant, positive effect on depressive symptoms, such that individuals with a history of child maltreatment experienced more depressive symptoms in adulthood than those without a maltreatment history. This finding is consistent with several studies examining the long-term effects of child maltreatment for the general population (Brown, Cohen, Johnson, & Smailes, 1999; Springer et al., 2007) and minority women (Roosa, Reinholtz, & Angelini, 1999).

### **Bidimensional Model**

The bidimensional model posits that acculturation is a distinct process from enculturation and thus, both processes should be considered when examining mental health outcomes. Acculturation and enculturation were not significantly correlated in the current sample, suggesting that these processes are unique and independent, emphasizing the need to examine them as separate processes when understanding acculturation strategies. When testing this model, it was hypothesized that the bidimensional model would demonstrate a better fit with depression scores than the unidimensional model. This hypothesis was not supported because although model fit criteria indicated improved fit from the unidimensional model, chi-square analyses suggest that this difference was not statistically significant.

The bidimensional model revealed a significant negative effect of enculturation on depression, suggesting that caregivers with higher levels of enculturation scores were predictive

of lower depressive symptoms. This finding aligns with previous research, suggesting that enculturation, or the retention of one's traditional beliefs, is associated with positive mental health outcomes (e.g., Yoon et al., 2013). Future research should expand on this finding via moderation analyses to establish enculturation as a protective factor against depressive symptomology.

### **Multidimensional Models**

In regards to the multidimensional model, it was hypothesized that family resources, as measured by the FRS, and social support, as measured by the SPS, would be key factors to include in a contextual-based, multidimensional model of depression for Latino women. The results of the multidimensional model echo the need for these constructs, as family resources and social support were both negatively related to depressive symptoms, with higher levels of resources and support associated with fewer depressive symptoms. Importantly, when family resources and social support were included as predictors of depressive symptoms, neither acculturation nor enculturation demonstrated significant effects on depression. These findings suggest that contextual supports, such as social support and resource adequacy, may be more influential in predicting decreases in depression than either acculturation or enculturation.

Due to the salient value of familism within the Latino culture, post-hoc analyses were conducted to further examine the role of social support, specifically familial connections, in depressive symptoms. Results of these analyses demonstrate that individuals with more feelings of pride for their immediate family's accomplishments had lower depressive scores. Further, when these familial connections (pride, closeness, and activity) with immediate and extended family, were added to the model, the measure of more general social support (SPS) became insignificant. Together, these findings suggest that family support, specifically family pride, may be more indicative of decreases in depressive symptomology than general availability of social support for Latina mothers of young children. Further, these results correspond with research

identifying familism as a protective factor against negative mental health (e.g., Knight & Sayegh, 2009; Losada et al., 2010). When examining familism, the current study utilized six questions as proxy measures (i.e., “Evaluate your feelings of pride regarding the accomplishments of your family;” “Evaluate your feelings of closeness within your family;” “Evaluate the extent to which the family does things together”), thus future research should utilize existing measures of familism (e.g., Gaines et al., 1997; Gil et al., 2000; Villarreal, Blozis, & Widaman, 2005) to determine if these findings are replicable when using a comprehensive assessment of family values.

### **Study Limitations**

While these findings contribute to our understanding of acculturation measurement and conceptualization within depression, we must temper our interpretation of findings by considering limitations of the study. First, the use of proxy measures to examine familism limits the current study’s ability to draw conclusions about the impact of familism on depressive symptoms. Though findings suggest family pride is associated with decreases in depression, future research should aim to assess familism as a unitary construct for examination, incorporating a more comprehensive understanding of this family value. Additionally, the current study’s sample consists of first generation, immigrant, Latino mothers of young children that identify Spanish as their preferred language. This sample of high-risk Latino families limits the generalizability of our findings to other Latino families experiencing depression. Future research should aim to replicate these findings with a more diverse sample. The current sample was primarily from Mexico and thus future research should identify additional Latino nationalities in which these results can be replicated. Finally, this study examined predictors of depressive scores and is thus limited in its ability to conclude the protective ability of these factors. Though enculturation, family pride, and family resources, were identified as predictors of fewer depressive symptoms, a

longitudinal study should be conducted to determine their role as protective factors against negative mental health outcomes.

### **Study Strengths**

Our findings highlight the role of acculturative model type within conflicting acculturation results, as well as the importance of including contextual factors, such as family connections and family resources when examining depressive symptoms. Despite some limitations, the current study has several strengths to be recognized. First, the current study had a large sample size, thus aiding in statistical power and generalizability of findings to the population of interest. Additionally, while other studies have examined the relation between acculturation and depression within a single acculturative model, this is the first study to our knowledge that tests all three models of acculturation (unidimensional, bidimensional, and multidimensional).

This study examined a contextual theory of depression through the multidimensional model. Results from this model demonstrate the need to examine acculturation and depression at a deeper level than current proxy measures and highlight the need to incorporate risk and protective factors of depressive symptomology. Our findings may be used to inform future research regarding acculturation or depression within Latino populations as it clarifies much of the extant discrepancies on the nature of the relation. Finally, the current study aimed to address limitations in previous research examining acculturation and depression by utilizing validated measures of acculturation and enculturation instead of proxy measurement (i.e., years in the United States, primary language), examining each of the acculturative models, and consistently including demographic variables within the models.

Results from this study highlight points of intervention when working with high-risk Latino families experiencing depression. Moreover, our findings can inform interventions for

programs with Latino populations by identifying malleable factors associated with improved mental health. Specifically, the multidimensional model identified high resource adequacy and family pride as two factors associated with fewer depressive symptoms. Home-based parenting programs, mental health clinics, and case managers should target these intervention points by providing intensive case management to address availability of family resources and family-based therapeutic interventions to aid in familial connections and pride.

### **Implications and Future Directions**

In summary, study findings emphasize the importance of acculturative model within discrepant findings on the relation between acculturation and depression. This study demonstrated how the significance of acculturation/enculturation in depression varied based on model type and the importance of contextual variables within depressive symptoms for Latino women.

Additionally, findings confirm the hypothesis that the multidimensional model demonstrates a better understanding of depression within Latino populations when compared to the unidimensional and bidimensional models.

Overall, the current study builds upon existing knowledge regarding the impact of resources and support on depressive symptoms for first generation Latina mothers. The study is unique in that it compared three theoretical acculturative models to identify the role of acculturation in depressive symptoms within a Latina sample at high risk. This research may be used to inform current intervention and prevention efforts by emphasizing the role of resource adequacy and familial support for individuals experiencing depressive symptoms. Future research should continue to evaluate the multidimensional model of acculturation and identify additional factors that strengthen the model. Finally, future research should evaluate the role of acculturation and enculturation longitudinally to determine how changes in these constructs impact depressive symptoms over time.

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APPENDIX A. DEMOGRAPHIC MEASURE

*Instructions: Please, answer the following questions.*

**1. What is your primary language?**

- 0 English
- 1 Spanish
- 2 Other (specify): \_\_\_\_\_

**2. Primary language spoken in the home?**

- 0 English
- 1 Spanish
- 2 Other (specify): \_\_\_\_\_

**3. Where were you born? \_\_\_\_\_**

- 0 United States
- 1 [México](#)
- 2 [Argentina](#)
- 3 [Bolivia](#)
- 4 [Chile](#)
- 5 [Colombia](#)
- 6 [Costa Rica](#)
- 7 [Cuba](#)
- 8 [República Dominicana](#)
- 9 [Ecuador](#)
- 10 [El Salvador](#)
- 11 [Guatemala](#)
- 12 [Haití](#)
- 13 [Honduras](#)
- 14 [Nicaragua](#)
- 15 [Panamá](#)
- 16 [Paraguay](#)
- 17 [Perú](#)
- 18 [Puerto Rico](#)
- 20 [Venezuela](#)
- 21 Other (Specify): \_\_\_\_\_

4. For how long have you been living in the United States? (approximate the total of years that you have lived in the untied States) \_\_\_\_\_

5. Gender:

Male  Female

6. What is your race, (ethnicity)? (Mark all that apply)

- Hispanic or Latino
- American Indian or Alaska Native
- Asian
- Native Hawaiian or Other Pacific Islander
- Black or African-American
- White, no Hispanic

7. If you can only choose one race/ethnicity that describes you, what race or ethnicity would you choose? (Mark one that best applies to you)

- Hispanic or Latino
- American Indian or Alaska Native
- Asian
- Native Hawaiian or Other Pacific Islander
- Black or African-American
- White, no Hispanic

8. What is your current marital status, (living arrangement)?

- 0Never married
- 1MarriedHo
- 2Living together
- 3Separated
- 4Divorced
- 5Widowed

9. How many marriages or live-in relationships have you been in?

- None
- 1
- 2
- 3
- 4
- More than 4

10. If you are a woman, are you currently pregnant? *If male, skip to 15*

Yes  No

10b. What is your estimated due date? Year/Month/Day

11. If you answered yes to the previous question, are you receiving pre-natal care?

Yes  No

12. **How old were you during your first pregnancy?** \_\_\_\_\_
13. **How many times have you been pregnant previously?** \_\_\_\_\_ *If 13=0, then skip to 15*  
*If you are pregnant now, do not count this pregnancy*
14. **How many of these pregnancies were live birth?** \_\_\_\_\_
15. **Do you have a telephone?**  
 Yes  No
16. **Do you have a car?** *If 16=Yes, then skip to 18*  
 Yes  No
17. **If you do not have a car, do you have access to one?**  
 Yes  No
18. **What is your work status?**  
 0 Full-time homemaker  
 1 Working part-time (less than 37 hours per week)  
 2 Working full-time (37 or more hours per week)  
 3 Self employed  
 4 Student  
 5 Unemployed, looking for work  
 6 Unemployed, not looking for work  
 7 Unemployed, disabled
19. **What is your highest level of education completed?**  
 0 Less than 9<sup>th</sup> Grade (did not complete middle school)  
 1 Grade 9-12 (Did not get a high school degree)  
 2 High School Diploma  
 3 G. E. D.  
 4 Some college (no degree)  
 5 Vo-tech School/training program  
 6 Associate degree  
 7 Bachelor's degree  
 8 Master's Degree (e.g., MA, MS, MSW, MFT etc)  
 9 Professional degree (e.g., LLB, LD, MD, DDS)  
 10 Doctorate degree (e.g., PhD, EdD)  
 11 Never attended school
20. **Are you currently enrolled in any kind of school, vocational or educational program?**



1Yes

0No

**21. How many people live in your house? \_\_\_\_\_**

**22. Are there any children living in your home? ( ) Yes ( ) No**

*If no, consult with the data collector. Everyone should have a child in their home.*

**23. If yes, what is your relationship to children living in your home? (check all that apply):**

- your biological children
- step children or children of your partner
- adopted children
- children of relatives
- foster children
- other children

**24. Who else lives with you? (Mark all that apply)**

- Alone
- Spouse
- partner
- Brothers or sisters
- Father or Step Father
- Mother or Step Mother
- Grandparents
- Aunt and/or Uncle
- Cousins
- Friends
- Other

***Wording for wave 1:***

**25. Was there any period of time in the last six months that no children lived in your home (for example, because your first child was not yet born, your children lived with a friend or relative or because the courts removed your children)?**

- Yes                       No

**26. How many times have you not had any children living in your home?**

\_\_\_\_\_

**27. What were the approximate start and end dates of the times when you were living without any children in the home?**

1. Start date \_\_\_/\_\_\_/\_\_\_ End date \_\_\_/\_\_\_/\_\_\_
2. Start date \_\_\_/\_\_\_/\_\_\_ End date \_\_\_/\_\_\_/\_\_\_
3. Start date \_\_\_/\_\_\_/\_\_\_ End date \_\_\_/\_\_\_/\_\_\_
4. Start date \_\_\_/\_\_\_/\_\_\_ End date \_\_\_/\_\_\_/\_\_\_

***Wording for wave 2 or 3***

**25. Was there any period of time since our last interview that no children lived in your home (for example, because your children lived with a friend or relative or because the courts removed your children)?**

- Yes  No

**26. How many times have you not had any children living in your home?**

\_\_\_\_\_

**27. What were the approximate start and end dates of the times when you were living without any children in the home?**

1. Start date \_\_/\_\_/\_\_ End date \_\_/\_\_/\_\_

2. Start date \_\_/\_\_/\_\_ End date \_\_/\_\_/\_\_

3. Start date \_\_/\_\_/\_\_ End date \_\_/\_\_/\_\_

4. Start date \_\_/\_\_/\_\_ End date \_\_/\_\_/\_\_

**28. What was your household income last month, (including salaries, child support, alimony, SSI, AFDC, illegal and legal)? \$ \_\_\_\_\_**

**29. How many people are supported on your monthly household income?**

\_\_\_\_\_

**30. Are any members of your household receiving government assistance of any kind?**

- No (If No, Skip to question 33)  Yes

**31. Which kind of assistance? (Mark all that apply)**

- (a) TANF (temporary assistance for needy families, known as “the check”)
- (b) WIC
- (c) SSI (supplemental security income)
- (d) Medicaid for parent
- (e) Medicaid for child (Sooner Care)
- (f) Food stamps
- (g) Housing assistance
- (h) Head Start
- (i) Daycare assistance (nursery)
- (j) Transportation assistance
- (k) unemployment benefits
- (l) social security benefits
- (m) Other

**32. Where do you live?**

- Large City or Metro, (75,000 or larger)
- Small City, (25,000 to 74,999 approximately)
- Large Town, (5,000 to 24,999 approximately)

- Small Town, (less than 5,000)
- In the Country, (not in town or city limits)

**33. What is your Zip Code? \_\_\_\_\_**

**34. How long have you lived in your current community?**

- Less than 1 month     1 to 2 years
- 1 to 6 months                       3 to 5 years
- 7 to 11 months             More than 5 years

**35. How many times have you moved over the past 5 years?**

- None     4
- 1     5
- 2     More than 5
- 3

**36. How often do you participate in community, school related or tribal activities?**

- Never
- Once a week
- Once a month
- 4 to 8 times a year
- 1 to 3 times a year
- Almost never

**37. On the average, how often do you attend church or religious meetings?**

- Never
- Only on special occasions like Easter, Christmas, etc.
- About once per month
- About once per week
- More than once per week

**38. How often do you have the opportunity to discuss personal matters with a close friend, minister, or neighbor?**

- I never have the opportunity
- I rarely have the opportunity
- I sometimes have the opportunity
- I often have the opportunity

**39. Are you currently participating in any other similar or related program, not including Safe Care?**

- Yes     No

**40. If you answered yes, what other programs, besides Safe Care Program, are you participating in?**

*(Mark all that apply)*

- Parents education classes

- Home visits, not including Safe Care
- Counseling
- Drug or alcohol treatment
- Other

**41. Why did you decide to participate in Safe Care? (Mark all that apply)**

- To learn more about my children's needs
- To help me respond to child rearing problems when they arise
- To help me feel better about myself as a parent and family member
- To improve my family relationships
- To learn how to get services for my family
- To further my educational goals
- Told to by DHS
- Ordered by the court
- Other

**42. Have any of your children ever been removed from your home by the courts?**

- Yes  No

**43. Are any children currently removed from your home by the courts?**

- Yes  No

**44. How often has domestic violence (hitting by spouse or partner) happened in your household?**

- Never
- Happened in the past, but not in the last 6 months
- Happened once or twice in the past 6 months
- Happened more than once or twice in the last 6 months

**45. Did a parent or caretaker beat, kick, punch, hit, or physically hurt you seriously enough to leave bruises or other physical injuries?**

- Never
- Once or twice
- Occasionally
- Often
- All the time

**46. Did a parent or caretaker call you bad names, humiliate you on purpose, or say things to make you feel like you were not good?**

- Never
- Once or twice
- Occasionally
- Often
- All the time

**47. Did a parent or caretaker ignore your basic needs (like meals, clothing, cleanliness, shelter, love and attention, medical care, or schooling) because they were out having fun, because of alcohol or drugs, or because they just did not care?**

- Never
- Once or twice
- Occasionally
- Often
- All the time

**48. Did someone ever do something sexual to you when you were a child that you did not want?**

- Yes  No

**49. If you answered yes, how often did this happen?**

- Once or twice
- Occasionally
- Often
- Several times a week
- Don't Know
- Refuse to Answer
- Not Applicable

**50. If you answered yes to question 48, who did it? (Mark all that apply)**

- A parent or step-parent
- Another family member
- Someone outside the family
- Not Applicable

**51. Were you ever taken away from your parents, sent to a foster home, or sent to live somewhere else by the courts?**

- Never
- For a short time
- Several times, or for a long time (like several years)
- Permanently

**Instructions: To answer the following 3 questions, please think about you, your partner and your children.**

**52. Evaluate your feelings of pride regarding the accomplishments of your family?**

- Low
- Low-medium
- Medium
- Medium-high
- high

**53. Evaluate your feelings of closeness within your family.**

- Low
- Low-medium
- Medium
- Medium-high
- High

**54. Evaluate the extent to which the family does things together.**

- Low
- Low-medium
- Medium
- Medium-high
- High

*Instructions: To answer the following 3 questions, please think about your family or relatives like aunts/uncles, nieces/nephews, grandparent, etc.*

**55. Evaluate your feelings of pride regarding the accomplishments of your extended family.**

- Low
- Low-medium
- Medium
- Medium-high
- high

**56. Evaluate your feelings of closeness within your extended family.**

- Low
- Low-medium
- Medium
- Medium-high
- High

**57. Evaluate the extent to which your extended family does things together.**

- Low

- Low-medium
- Medium
- Medium-high
- High

APPENDIX B. MEASURES

The Center for Epidemiology Studies Depression Short-Form

Here is a list of ways you may have felt or behaved recently. How often during the past week

have you felt these ways? Would you say rarely or never, some or a little of the time, occasionally or a moderate amount of the time, or most or all of the time?

*For each item, mark (X) one response*

1. How often during the past week have you felt.....	Rarely or never (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
a. Bothered by things that usually don't bother you?	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
b. You did not feel like eating; your appetite was poor?	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
c. That you could you not shake off the blues, even with help from family and friends?	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
d. You had trouble keeping your mind on what you were doing?	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>



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a. Depressed?	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
b. That everything you did was an effort?	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>

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c. Fearful?	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
d. Your sleep was restless?	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
e. You talked less than usual?	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>

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f. Lonely?	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
g. Sad?	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>
h. You could not get "going"?	<input type="checkbox"/> <sup>0</sup>	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>

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### Stephenson Multigroup Acculturation Scale

Below are a number of statements that evaluate changes that occur when people interact with others of different cultures or ethnic groups. For questions that refer to "COUNTRY OF ORIGIN" or "NATIVE COUNTRY," please refer to the country from which you or your family originally came. For questions referring to "NATIVE LANGUAGE," please refer to the language spoken where you and your family originally came.

Circle the answer that best matches your response to each statement.

*False Partly False Partly True True*

1. I understand English, but I'm not fluent in English. *False Partly False Partly True True*

2. I am informed about current affairs in the United States. *False Partly False Partly True True*

3. I speak my native language with my friends and acquaintance from my country of origin. *False Partly False Partly True True*

4. I have never learned to speak the language of my native country. *False Partly False Partly True True*

5. I feel totally comfortable with (Anglo) American people. *False Partly False Partly True True*

6. I eat traditional foods from my native culture. *False Partly False Partly True True*

7. I have many (Anglo) American acquaintances. *False Partly False Partly True True*

8. I feel comfortable speaking in my native language. *False Partly False Partly True True*

9. I am informed about current affairs in my native country. *False Partly False Partly True True*

10. I know how to read and write in my native language. *False Partly False Partly True True*
11. I feel at home in the United States. *False Partly False Partly True True*
12. I attend social functions with people from my native country. *False Partly False Partly True True*
13. I feel accepted by (Anglo) Americans. *False Partly False Partly True True*
14. I speak my native language at home. *False Partly False Partly True True*
15. I regularly read magazines of my Native country. *False Partly False Partly True True*
16. I know how to speak my native language. *False Partly False Partly True True*
17. I know how to prepare (Anglo) American foods. *False Partly False Partly True True*
18. I am familiar with the history of my native country. *False Partly False Partly True True*
19. I regularly read an American newspaper. *False Partly False Partly True True*
20. I like to listen to music of my ethnic group. *False Partly False Partly True True*
21. I like to speak my native language. *False Partly False Partly True True*
22. I feel comfortable speaking English. *False Partly False Partly True True*
23. I speak English at home. *False Partly False Partly True True*
24. I speak my native language with my spouse or partner. *False Partly False Partly True True*
25. When I pray, I use my native language. *False Partly False Partly True True*
26. I attend social functions with American people. *False Partly False Partly True True*
27. I think in my native language. *False Partly False Partly True True*

28. I stay in close contact with family members and relatives in my native country. *False Partly False Partly True True*
29. I am familiar with important people in American history. *False Partly False Partly True True*
30. I think in English. *False Partly False Partly True True*
31. I speak English with my spouse or partner. *False Partly False Partly True True*
32. I like to eat American foods. *False Partly False Partly True True*

### Social Provisions Scale

Please indicate how much you agree or disagree with each statement, using the following scale:

<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
1	2	3	4

1. There are people I can depend on to help me if I really need it
2. There is no one I can turn to for guidance in times of stress
3. There are people who enjoy the same social activities I do
4. I feel personally responsible for the well-being of another person
5. I do not think other people respect my skills and abilities
6. If something went wrong, no one would come to my assistance
7. I have a close relationships that provide me with a sense of emotional security and well-being
8. I have relationships where my competence and skill are recognized
9. There is no one who shares my interests and concerns
10. There is no one who really relies on me for their well-being
11. There is a trustworthy person I could turn to for advice if I were having problems
12. I feel a strong emotional bond with at least one other person

## Family Resources Scale

**INSTRUCTIONS:** This scale is designed for you to tell us if your family has adequate resources (time, money, energy, and so on) to meet the needs of your family. Most of the items below are needs of all families, but some items may not apply to your family (such as item 9 or item 20). If the need does not apply for your family, fill in the circle under Does Not Apply. For each item, please fill in the circle for the response that **best describes** how well each of the following needs is being met **at this time in your family**.

Does Not Apply	Not at All	A Little	Sometimes	Often	Almost Always
0	1	2	3	4	5

1. Food for two meals a day
2. House or apartment
3. Money to buy necessities
4. Enough clothes for your family
5. Heat for your house or apartment
6. Indoor plumbing/water
7. Money to pay monthly bills
8. Good job for yourself or spouse/partner
9. Medical care for yourself and other adults in the family
10. Public assistance (SSI, TANF, Medicaid, etc.) for yourself/spouse
11. Dependable transportation (own car or provided by others)
12. Time to get enough sleep/rest
13. Furniture for your home or apartment
14. Time to be by yourself
15. Time for family to be together
16. Time to be with your child(ren)
17. Time to be with spouse or partner
18. Telephone or access to a phone
19. Babysitting for your child(ren)
20. Child care/day care for your child(ren)
21. Money to buy recommended equipment/supplies for child(ren)
22. Dental care for yourself and adults in the family
23. Someone to talk to
24. Time to socialize
25. Time to keep in shape and look nice
26. Toys or activities for your child(ren)
27. Money to buy things for yourself
28. Money for family entertainment

29. Money to save
30. Time and money for travel/vacation

APPENDIX C. TABLES

Table 1.

Depicts the measurement and findings of previous studies examining the relation between acculturation and depression within a Latino sample.

<b>Citation</b>	<b>Acculturation Measure</b>	<b>Model Type</b>	<b>Finding</b>
Alegria et al., 2007a	English Language Proficiency Scale	Multidimensional	Was not a significant predictor of depressive symptomology
Burnam et al., 1987	Scale adapted based upon the Acculturation Rating Scale for Mexican Americans and the Behavioral Acculturation Scale	Unidimensional	Acculturation is positively related to depression
Cordero & Kurz, 2006	Short Acculturation Scale (Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987).	Unidimensional	Acculturation is negatively related to depression
Cuellar & Roberts, 1997	Acculturation rating scales for Mexican Americans-II	Bidimensional	Acculturation was negatively related to depression
Gonzales et al., 2001	Acculturation Rating Scale for Mexican Americans—II	Unidimensional	Acculturation is negatively related to depression



Gonzales et al., 2006	Latent construct based on self-reports of linguistic acculturation – based on Cuellar’s 20 item acculturation scale	Unidimensional	Acculturation is negatively related to depression
Kaltman et al., 2010	Years in the United States	Unidimensional	Acculturation is negatively related to depression
Kaplan & Marks, 1990	Eight items regarding spoken and written language and ethnic identification. Items represent a subset of the 20-item ‘Acculturation Rating Scale for Mexican Americans’ developed by Cuellar et al.	Bidimensional	Acculturation is positively related to depression
Lorenzo-Blanco et al., 2011	Revised Acculturation Rating Scale for Mexican Americans (ARSMA-II; Cuéllar et al. <a href="#">1995</a> ), and the <a href="#">Way of Life</a> Scale (Oetting and Beauvais <a href="#">1990</a> )	Multidimensional	Acculturation is positively related to depression for Latina girls
Lorenzo-Blanco et al., 2012	10 items taken from a short form of the Revised Acculturation Rating Scale for Mexican–Americans (ARSMA-II; Cuéllar et al. <a href="#">1995b</a> ) - five items from the Anglo orientation and five from the Hispanic orientation subscales.	Multidimensional	Acculturation is positively related to depression
Masten et al., 1994	Acculturation measure created by Olmedo, Martinez & Martinez (1978), No name	Unidimensional Model	Acculturation is negatively related to depression

Potochnick & Perreira, 2010	Time in the United States	Multidimensional Model	Acculturation was negatively related to depression
Ramos, 2005	Four items related to language usage and preference	Unidimensional Model	Acculturation was positively related to depression
Rivera, 2007	Short Acculturation Scale for Hispanics (Marin et al., 1987)	Multidimensional Model	Acculturation was positively related to depression
Torres & Rollock, 2007	The Cultural Life Style Inventory	Multidimensional Model	Acculturation was negatively related to depression
Torres 2010	The Acculturation Rating Scale for Mexican Americans-II (ARSMA-II; Cuellar, Arnold, & Maldonado, 1995)	Multidimensional Model	Acculturation was positively related to depression

Table 2.

## Descriptive statistics of the study's sample

	<b>N</b>	<b>M (SD, Range)</b>
Age	335	28.47 (6.03, 16-44)
Income	342	1355.39 (697.64, 0-4000)
Years in the U.S.	342	9.88 (5.62, 0-35)
Depression (CESD) Scores	342	8.66 (7.69, 0-35)
Acculturation (SMAS) Scores	342	1.28 (.63, 0-2.93)
Enculturation (SMAS) Scores	342	2.28 (.28, .94-2.28)
Family Resources (FRS) Scores	342	129.78 (18.99, 56-176)
Social Provision (SPS) Scores	342	34.86 (5.54, 20-48)
	<b>N</b>	<b>Percentage</b>
Country of Origin		
Mexico	275	80.4%
Other	44	12.9%
Marital Status		
Single	42	12.3%
Married	159	46.5%
Cohabiting	113	33.0%
Previously Married	28	8.2%
Highest Level of Education		
Under High School	112	32.7%
High School Diploma/GED	181	52.9%
Secondary Education	35	10.2%
Higher Education (post-college)	14	4.1%
Primary Language		
Spanish	325	95.0%
Other	17	5.0%
Pregnancy Status		
Pregnant	50	14.6%
Not Pregnant	292	85.4%
	<b>N</b>	<b>Percentage</b>

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Child Maltreatment History		
Yes	62	18.1%
No	278	81.3%
Employment Status		
Unemployed	255	74.6%
Part-Time	52	15.2%
Full-Time	26	7.6%
Student	9	2.6%

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Table 3.

Correlations of Predictor and Outcome Variables

Variable	1.	2.	3.	4.	5.	6.	7.	8.
1. Age	1.00	.140*	.098	-.170**	.186**	-.047	.048	-.104
2. Years in the U.S.	-	1.00	.022	.381**	-.075	.043	.129*	-.020
3. Income	-	-	1.00	.020	.037	.091	.145**	.032
4. Acculturation	-	-	-	1.00	.089	.277**	.194**	-.034
5. Enculturation	-	-	-	-	1.00	.249**	.204**	-.199**
6. Social Provisions	-	-	-	-	-	1.00	.421**	-.289**
7. Family Resources	-	-	-	-	-	-	1.00	-.350**
8. Depression	-	-	-	-	-	-	-	1.00

Table 4.

Results of the Negative Binomial Regression for the Unidimensional Model

	<i>b</i>	Std. Error	95% Confidence Interval	<i>p</i>
Nationality (Other)	.087	.181	-.268-.442	.631
Education				
High School Diploma	.084	.141	-.191-.360	.549
Secondary Education	-.139	.229	-.588-.311	.545
Higher Education	.094	.329	-.551-.739	.776
Work Status				
Part-Time Employment	.240	.173	-.099-.580	.165
Full-Time Employment	.280	.233	-.175-.736	.228
Student	.313	.384	-.440-1.065	.415
Marital Status				
Married	-.151	.209	-.562-.259	.470
Cohabiting	-.078	.213	-.494-.339	.715
Previously Married	.300	.271	-.231-.832	.268
Spanish speaking	.246	.322	-.384-.877	.444
Pregnancy status	.009	.176	-.336-.354	.960
Child Maltreatment History	.434	.1563	.127-.740	.006**
Age	-.015	.0113	-.038-.007	.176
Years in the U.S.	-.004	.013	-.030-.022	.773
Income	.000	.000	.000-.000	.558
Acculturation	-.090	.111	-.307-.127	.415

*Note: Reference groups include: Mexican nationality, Under HS diploma, Unemployed work status, Single marital status, Other primary language, Not currently pregnant, and No history of child maltreatment*

Table 5.

Results of the Negative Binomial Regression for the Bidimensional Model

	<i>b</i>	Std. Error	95% Confidence Interval	<i>p</i>
Nationality (Other)	.042	.182	-.315-.400	.817
Education				
High School Diploma	.093	.140	-.182-.368	.507
Secondary Education	-.154	.229	-.602-.295	.502
Higher Education	.132	.330	-.515-.779	.689
Work Status				
Part-Time Employment	.245	.174	-.095-.585	.158
Full-Time Employment	.299	.232	-.156-.754	.198
Student	.180	.389	-.581-.942	.643
Marital Status				
Married	-.102	.210	-.513-.310	.628
Cohabiting	-.012	.214	-.432-.408	.955
Previously Married	.289	.272	-.244-.821	.288
Spanish speaking	.370	.327	-.270-1.010	.257
Pregnancy status	.023	.176	-.322-.368	.895
Child Maltreatment History	.404	.157	.097-.711	.010*
Age	-.013	.011	-.035-.010	.273
Years in the U.S.	-.008	.013	-.033-.018	.570
Income	.000	.000	.000-.000	.583
Acculturation	-.027	.114	-.251-.196	.810
Enculturation	-.527	.237	-.992 - -.062	.026*

*Note: Reference groups include: Mexican nationality, Under HS diploma, Unemployed work status, Single marital status, Other primary language, Not currently pregnant, and No history of child maltreatment*

Table 6.

Results of the Negative Binomial Regression for the Multidimensional Model

	<i>b</i>	Std. Error	95% Confidence Interval	<i>p</i>
Nationality (Other)	.041	.144	-.241-.324	.774
Education				
High School Diploma	.071	.111	-.148-.289	.526
Secondary Education	-.217	.183	-.575-.141	.234
Higher Education	.101	.263	-.415-.618	.700
Work Status				
Part-Time Employment	.200	.137	-.067-.468	.142
Full-Time Employment	.405	.183	.047-.763	.027*
Student	.627	.325	-.009-1.263	.053
Marital Status				
Married	.019	.170	-.314-.351	.911
Cohabiting	.023	.172	-.313-.360	.892
Previously Married	.288	.214	-.131-.708	.178
Spanish speaking	.496	.261	-.015-1.007	.178
Pregnancy status	.116	.140	-.158-.391	.406
Child Maltreatment History	.248	.125	.003-.492	.047*
Age	-.013	.009	-.031-.004	.138
Years in the U.S.	-.002	.011	-.023-.018	.825
Income	.000	.000	.000-.000	.093
Acculturation	.094	.093	-.088-.276	.311
Enculturation	-.238	.189	-.609-.133	.209
Social Provisions	-.025	.010	-.045-.005	.016*
Family Resources	-.013	.003	-.019-.007	.000***

*Note: Reference groups include: Mexican nationality, Under HS diploma, Unemployed work status, Single marital status, Other primary language, Not currently pregnant, and No history of child maltreatment*



Table 7.

Model Fit Comparisons

	<b>AIC</b>	<b>BIC</b>
Unidimensional Model	2146.898	2215.445
Bidimensional Model	2143.835	2216.19
Multidimensional Model	2124.019	2203.99

Table 8.

Results of the Negative Binomial Regression for the Multidimensional Model, Post-Hoc Analysis

	<i>b</i>	Std. Error	95% Confidence Interval	<i>p</i>
Nationality	.058	.191	-.316-.433	.761
Education				
High School Diploma	.033	.143	-.247-.313	.819
Secondary Education	-.214	.237	-.678-.251	.368
Higher Education	-.076	.343	-.748-.596	.824
Work Status				
Part-Time Employment	.193	.178	-.156-.543	.278
Full-Time Employment	.383	.241	-.090-.856	.112
Student	.749	.432	-.097-1.594	.083
Marital Status				
Married	.103	.221	-.330-.536	.641
Cohabiting	.149	.224	-.289-.587	.505
Previously Married	.271	.282	-.282-.824	.336
Spanish speaking	.621	.333	-.032-1.275	.062
Pregnancy status	.209	.183	-.149-.567	.253
Child Maltreatment History	.197	.166	-.128-.523	.235
Age	-.008	.012	-.031-.016	.524
Years in the U.S.	-.006	.0134	-.032-.020	.658
Income	.000	.000	.000-.000	.206
Acculturation	.199	.125	-.046-.444	.112
Enculturation	-.054	.258	-.558-.451	.835
Social Provisions	-.008	.014	-.035-.019	.552
Family Resources	-.012	.004	-.020- .004	.003**
Immediate Family - Feelings of Pride (Medium)	-.268	.183	-.627-.090	.143
Immediate Family - Feelings of Pride (High)	-.472	.233	-.929- -.016	.043*
Immediate Family -Feelings of Closeness (Medium)	.097	.232	-.358-.552	.677

	<i>b</i>	Std. Error	95% Confidence Interval	<i>p</i>
Immediate Family -Feelings of Closeness (High)	-.236	.269	-.764-.292	.380
Immediate Family - Family Activity (Medium)	-.283	.210	-.695-.129	.178
Immediate Family - Family Activity (High)	-.181	.248	-.667-.306	.466
Extended Family - Feelings of Pride (Medium)	.146	.208	-.261 - .553	.482
Extended Family Feelings of Pride (High)	.197	.280	-.352-.745	.482
Extended Family - Feelings of Closeness (Medium)	-.272	.225	-.713-.168	.226
Extended Family - Feelings of Closeness (High)	-.408	.300	-.994-.179	.174
Extended Family - Family Activity (Medium)	-.051	.168	-.380-.277	.759
Extended Family - Family Activity (High)	-.007	.278	-.551-.536	.979

*Note: Reference groups include: Mexican nationality, Under HS diploma, Unemployed work status, Single marital status, Other primary language, Not currently pregnant, and No history of child maltreatment*

Table 9.

Model Fit Criteria for the Negative Binomial Regression for the Multidimensional Model, Post-Hoc Analysis

	<b>AIC</b>	<b>BIC</b>
Multidimensional Model	2124.02	2203.99
Post-Hoc Model	2124.41	2250.08

APPENDIX D. FIGURES

Figure 1.

Acculturation strategies according to Berry (1996).

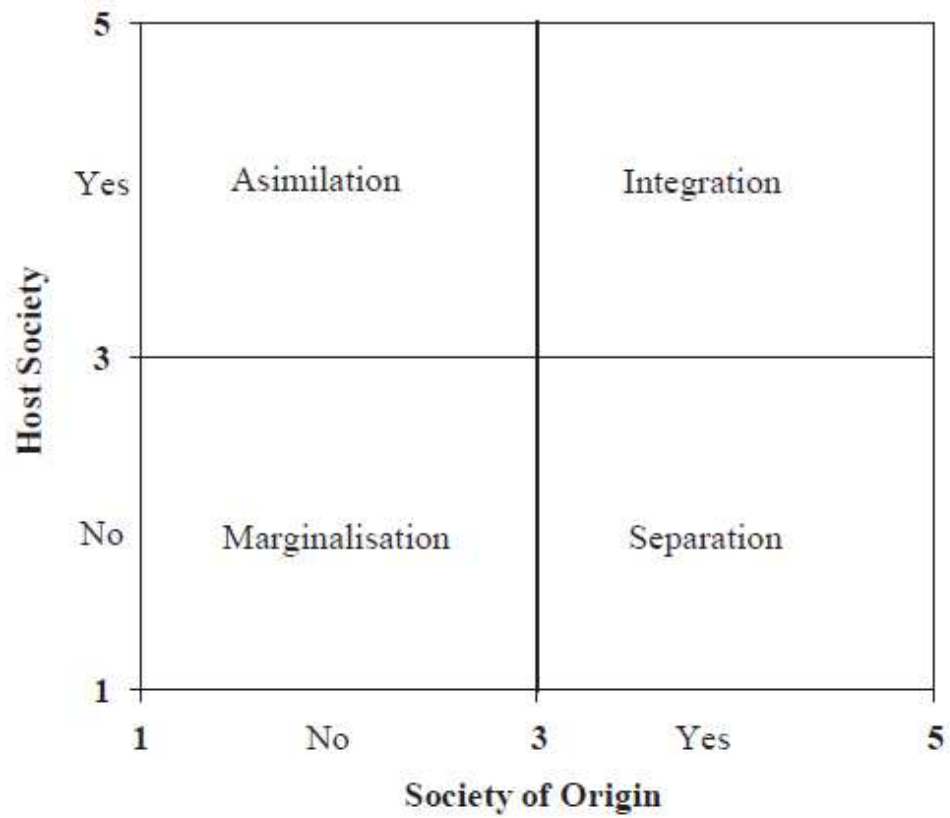
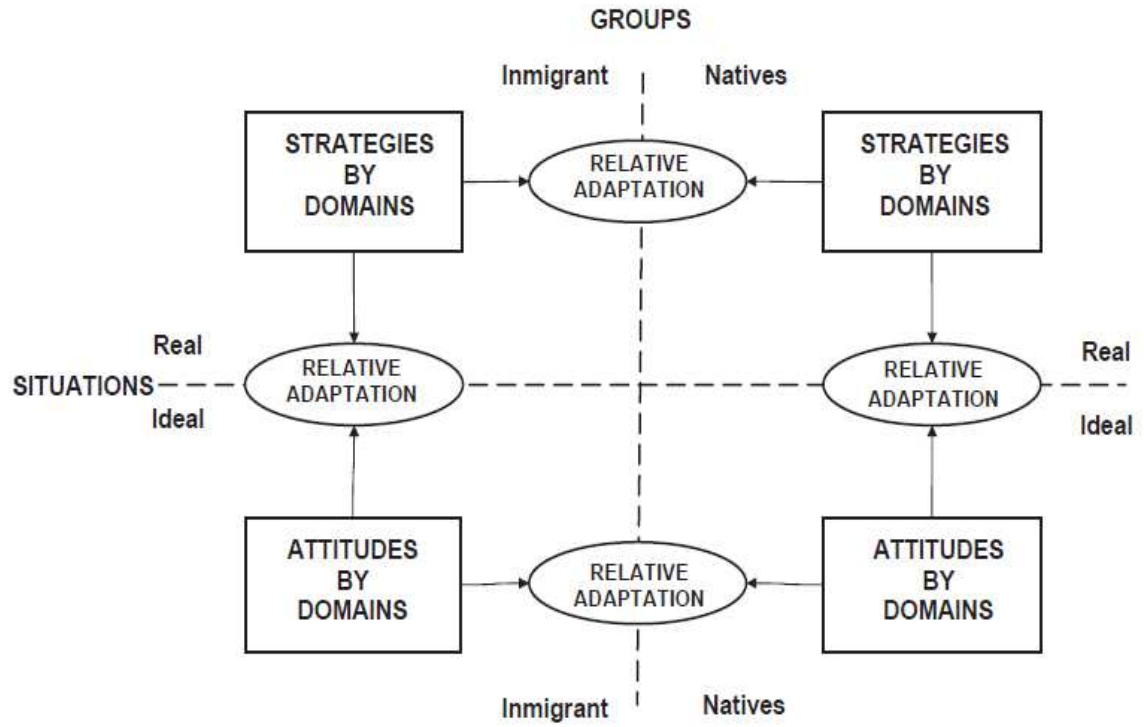


Figure 2.

Relative Acculturation Extended Model (RAEM) according to Navas and colleagues (2005)



APPENDIX E. IRB APPROVAL



**Institutional Review Board for the Protection of Human Subjects**

**Continuing Review with Proposed Modification – Board Approval**

**Date:** July 21, 2015

**IRB#:** 1288

**Meeting Date:** 07/20/2015

**To:** Jane F Silovsky, PhD

**Approval Date:** 07/20/2015

**Expiration Date:** 06/30/2016

**Study Title:** 15107-Evidence-Based Child Maltreatment Prevention for High Risk Families: Expanding to Latino Communities, Enhancing Family Violence Prevention, and Sustaining Prevention Programs - Grant # 90CA176

**Study Status:** Active - Closed, Interventions Continue

**Reference Number:** 640825

At its regularly scheduled meeting, the Institutional Review Board (IRB) reviewed the Application for Continuing Review for the above-referenced research study. Study documents (e.g. protocol, consent, survey, etc.) associated with this submission are listed on page 2 of this letter. To review or access the submission documents (e.g. application, review response form) as well as the study documents approved for this submission, open this study from the *My Studies* option, go to *Protocol Items*, click to open *Application*, *Informed Consent*, or *Other Study Documents* to find the currently approved documents.

The approved modification is: Add Alexandra Slemaker as study contact and Som Bohora to KSP. Remove Mark Chaffin and Cinthia Trejo from KSP.

As principal investigator of this research study, it is your responsibility to:

- Conduct the research study in a manner consistent with the requirements of the IRB and federal regulations at 45 CFR 46 and/or 21 CFR 50 and 56.
- Obtain informed consent and research privacy authorization using the currently approved, stamped forms and retain all original, signed forms, if applicable.
- Request approval from the IRB prior to implementing any/all modifications.
-

- Promptly report to the IRB any harm experienced by a participant that is both unanticipated and related per IRB Policy.
- Maintain accurate and complete study records for evaluation by the HRPP quality improvement program and if applicable, inspection by regulatory agencies and/or the study sponsor.
- Promptly submit continuing review documents to the IRB upon notification approximately 60 days prior to the expiration date indicated above.
- Submit a final closure report at the completion of the project.

If you have questions about this notification or using iRIS, contact the IRB @ 405-271-2045 or

[irb@ouhsc.edu](mailto:irb@ouhsc.edu). Sincerely



Eliot Schechter, MD

Vice Chairperson, Institutional Review Board



## VITA

Hannah Corrine Espeleta

Candidate for the Degree of

Master of Science

Thesis: DEPRESSION IN LATINA MOTHERS: EXAMINING THE ROLES OF ACCULTURATION, ENCULTURATION, SOCIAL SUPPORT, AND FAMILY RESOURCES

Major Field: Clinical Psychology

Biographical:

Education:

Completed the requirements for the Master of Science in Clinical Psychology at Oklahoma State University, Stillwater, Oklahoma in July, 2016

Completed the requirements for the Bachelor of Arts in your Psychology at Miami University, Oxford, Ohio in 2014.

Experience: Graduate Research Assistant to Lana O. Beasley, Ph.D., Child Trauma Lab, Department of Psychology, Oklahoma State University, August 2014 to Present. Graduate Research Assistant at the University of Oklahoma Health Sciences Center, Center on Child Abuse and Neglect, August 2014 to Present. Clinical practicum experience through Oklahoma State University Psychological Services Center, August 2014 to Present.

Professional Memberships: American Psychological Association, Division 53: Society of Clinical Child and Adolescent Psychology, Student Affiliate; Association for Behavioral and Cognitive Therapies (ABCT), Student Member; Oklahoma Psychological Association, Student Member; Southwester Psychological Association, Student Member