

LATINO IMMIGRANT STUDENTS: EXPLORING THE RELATIONSHIP  
BETWEEN MIGRATION EXPERIENCE AND EDUCATION OUTCOMES

by

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## DISSERTATION ABSTRACT

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The purpose of this study was to contribute to the literature on the educational outcomes and protective factors (i.e., support systems) in the lives of Latino immigrant youth, with a special emphasis on how these experiences relate to and are impacted by their migration experiences. Using the cultural-ecological theoretical framework and the Stages of Migration framework, this study utilized an existing data set to explore the relationships between migration stress, psychological distress, experiences of discrimination, and awareness of discrimination in relation to educational outcomes in a sample of 281 Latino immigrant youth. These relationships were then examined to see if they differed as a function of perceived support, gender, and school type (i.e., middle school versus high school). Structural equation modeling was utilized to test the hypothesized model that included migration stress, psychological distress, and education outcomes. The structural model showed very good fit. Results suggest that migration stress has a significant direct effect on psychological distress and on educational outcomes among Latino immigrant youth. Participants reporting high migration stress reported greater psychological distress and had poorer educational outcomes with respect to academic grades, educational aspirations, and educational expectations. Moderation

testing indicated the structural model did not vary as a function of perceived support, gender, or school. Implications for research and practice are discussed.

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# CHAPTER I

## INTRODUCTION

Latinos are the largest minority group in the U.S. (Fry & López, 2012), making up 16.5% of the total U.S. population at 50.7 million people, according to 2011 estimates (Fry & López, 2012; Motel & Patten, 2012). In the last ten years, the Latino population growth accounted for more than half of the nation's population growth (Motel & Patten, 2012). As the Latino population continues to increase, the U.S. Census Bureau estimates that by the year 2036, a third of the nation's population under the age of 18 will be Latino/a. Latinos also make up the largest immigrant group in the U.S. (Pew Hispanic Center, 2013a). The U.S. Census estimates that 37% of the Latinos living in the U.S. are foreign-born (Motel & Patten, 2012). Just like the Latino population is increasing, so is the number of immigrants in the U.S. (Pew Hispanic Center, 2013a, b). In the last ten years, there was a 30% increase in the number of foreign-born people living in the U.S. In the last five years alone, the number of foreign-born people living in the U.S. increased by 2.4 million (Pew Hispanic Center, 2013, a, b). In 2011, the immigrant population hit a record high in numbers, with 40.4 million immigrants living in the U.S. (Motel & Patten, 2012). The majority of immigrants (47%) come from Latin American countries (Motel & Patten, 2012; Pew Hispanic Center, 2013, a, b).

These overall trends mean that the Latino student population in the U.S. also continues to grow (Fry & López, 2012). According to the Census Bureau, a quarter of all students enrolled in public schools in 2012 were Latino/a (as cited in López & Fry, 2012). Also, for the first time ever, Latinos made up the largest minority group on both 2-year and 4-year college campuses in 2011 (Fry & López, 2012). Between 2011 and 2012,

Latinos made up 19% of the total college population between the ages of 18 and 24 (López & Fry, 2013). While college enrollment rates have increased among the Latino population, the same is not the case when it comes to attainment levels (Fry & López, 2012). Latinos obtain lower attainment levels than White, African American, and Asian American students in the U.S. (Motel & Patten, 2012; U.S. Census Bureau, 2012a). Of every 100 Latino elementary school students, only 61 obtained a H.S. diploma and 13 attained a bachelor's degree (U.S. Census Bureau, 2012b). These rates were lower than those of African Americans, who graduated from high school and 4-year universities at rates of 84.2% and 19.8% respectively; White Americans, with high school and college graduation rates of 87.6% and 54.4% respectively; and Asian Americans, whose high school and college completion rates were higher than any other group at 88.9% and 54.4% respectively (Motel & Patten, 2012; U.S. Census Bureau, 2012a).

Small percentages of attainment rates are also observed among Latinos who are foreign-born. The Pew Hispanic Center (2014) reports that while 95% of foreign-born Latinos between the ages of 5 and 17 years old were enrolled in school in 2012, their educational attainment levels were much lower than that. Among all foreign-born Latinos ages 25 and older, only 24.7% graduated from high school. Also, in 2012, 12.3% of all foreign-born Latinos between the ages of 16 and 19 dropped out of school, compared to only 5.4% of U.S.-born Latinos, 3.4% of Whites, 5.6% of Blacks, and 1.3% of Asians (Pew Hispanic Center, 2014). And while 22.6% of foreign-born Latinos between the age of 18 and 24 years old were enrolled in college in 2012 (Pew Hispanic Center, 2014), college graduation rates indicated that only 10.6% of foreign-born Latinos ages 25 and older had a 4-year college degree in 2012 (Pew Hispanic Center, 2014).

Despite the growing numbers of Latino immigrants and their low attainment levels, immigrant children and adolescents have received less attention in the literature than their U.S.-born peers (APA Presidential Task Force on Immigration, 2012). Often described as a population that is overlooked and underserved (Ruiz deVelasco, Fix, & Clewell, 2000), few studies have simultaneously explored the impact that the migration experience, including migration stress, has on the educational outcomes and psychological well-being of Latino immigrant youth, and how these relationships are impacted by support systems. A PsycNET search using the terms “migration,” “immigrant,” “education,” “support” and “Latino” yielded two results (Khiya, Urrutia-Rojas, Mas, & Coggin, 2005; Viruell-Fuentes & Schulz, 2009), none of which focused on academics or educational outcomes. Using EBSCO Host ERIC, a search using the terms “migration,” “youth,” “immigrant,” and “Latino” yielded five results, with only one focusing on education (Stamps & Bohon, 2006). The four remaining articles focused on the migration experience and stressors experienced by immigrant youth (Gudiño, Nadeem, Kataoka, & Sheryl, 2011; Ko & Perreira, 2010; Perreira & Luke, 2007). A Google Scholar search on the phrases “migration stress,” “immigrant youth” (“youth” was also replaced with “children” and “adolescents” in separate trials to see if yielded additional results) “Latino” and “education” (or “academic”) yielded between 22-36 results. Of these, many did not explore educational outcomes, did not focus on Latinos, or did not focus on immigrants in the U.S.

While fewer studies have focused primarily on foreign-born youth, many tend to include immigrants as a small part of their sample size (Alfaro, Umaña-Taylor, & Bámaca, 2006; Alfaro, Umaña -Taylor, González-Backen, Bámaca, & Zeiders, 2009;

Altschul, 2011; Benner & Graham, 2011; Flores, Navarro, Smith, & Ploszaj, 2006; Gómez, Fassinger, Prosser, Cooke, Mejia, & Luna, 2001; Wentzel, Baker, & Rusell, 2012). Instead of simultaneously exploring migration stress, psychological distress, discrimination, support systems, and educational outcomes, these studies have tended to focus on only one or two of the variables of interest in this study. There is a clear gap in the literature with respect to the relationship between the migration experience and educational outcomes of this fast-growing Latino immigrant youth population.

The purpose of this study was to contribute to the literature on the educational outcomes and protective factors (i.e., support systems) in the lives of Latino immigrant youth, with a special emphasis on how these experiences relate to and are impacted by their migration experiences. Since all U.S. immigrants are, by nature of the word's definition, born outside of the United States, this paper specifically uses the terminology "foreign-born" and "immigrant" interchangeably to refer to this population, in a manner consistent with major researchers whose work this study draws upon and in agreement with the terminology used within the field of psychology (APA Presidential Task Force on Immigration, 2012; Fulingi & Pereira, 2009; Ko & Perreira, 2010; Perreira, Mullan Harris, & Lee, 2006; Pew Hispanic Center 2009; 2013a; 2013b; Suárez-Orozco, Pimentel, & Martin, 2009). The terms "immigrant" and "foreign born" are different from the term *second/third generation*, which refer to the children/grandchildren of immigrants (Perreira et al., 2006; Suárez-Orozco, Suárez-Orozco, Qin-Hillard, 2005; Suárez-Orozco, Bang, & Kim, 2011).

The study aimed to explore the relationships between the migration experience, psychological distress, support systems, and experiences of discrimination, as they all

relate to educational outcomes, the main variable of interest. More specifically, the purpose of this study was to contribute to the literature on the educational outcomes of Latino immigrant youth. In particular, this study tested a model predicting educational aspirations, educational expectations, and GPA in a Latino immigrant youth population. The model predicting academic outcomes included the following predictors: migration experience, psychological distress, support systems, and experiences of discrimination. I also examined whether psychological distress and awareness of discrimination mediated the relationships between migration stress, experiences of discrimination, and educational outcomes. Finally, I also explored whether support systems moderated the relationship between migration stress, psychological distress, experiences of discrimination, awareness of discrimination and educational outcomes.

## CHAPTER II

### LITERATURE REVIEW

The literature review is organized as follows. First, I describe the frameworks that guided this research study. Next, I review relevant literature on the migration experience and psychological distress associated with the various stages of the migration process. Next, I describe the relationships between discrimination and educational outcomes, as well as the relationship between discrimination and psychological distress. Subsequently, I review literature on the relationships between support systems and psychological distress. Next, I describe the relationships between support systems and educational outcomes, such as academic achievement. Finally, I describe the research questions and the proposed model that I tested. Terminology is defined as it is introduced.

#### **Guiding Frameworks**

Two main frameworks guided this research. These were: (1) the cultural-ecological (also called social-ecological) theoretical framework, and (2) the Stages of Migration framework. The first theoretical framework, the cultural-ecological framework, is an adaptation of Bronfenbrenner's ecological perspective (Bronfenbrenner & Morris, 1998; Bronfenbrenner & Morris, 2006). An ecological framework proposes that lived experiences are a result of reciprocal interactions between individuals and the environments in which they live. Conceptualization takes place from the individual's context of socialization, including their culture and how the context in which they live changes over time. According to the ecological framework, human experiences are a result of the interactions between people and their environments, and these vary as a function of culture, context, and individuals (Bronfenbrenner & Morris, 1998;

Bronfenbrenner & Morris, 2006). It is proposed that resources in children's families, neighborhoods, schools, and community settings influence their daily experiences and developmental outcomes.

In the modified social-ecological framework developed by García Coll and colleagues (1996), an integrative conceptual model emphasizes the importance of discrimination, racism, prejudice, segregation, and oppression on the development of racial and ethnic minority children. This modified model emphasizes the interaction of culture, ethnicity, race, and social class, and "the processes and consequences that these relative positions engender" (pp. 1892, García et al., 1996) for the development of children of color. Using this the social-ecological framework, a focus is placed on the contexts that immigrants experience. Each context offers risks and protective factors that can either harm or enhance healthy adaptation strategies (APA Presidential Task Force on Immigration, 2012). Thus, understanding these factors can help to illuminate children's immigration experiences and outcomes. According to the social-ecological theory, interactions between the individual and the environment take place within different systems (Bronfenbrenner & Morris, 1998; 2006). The microsystem refers to the people or institutions that individuals have direct contact with. These can include family members, peers, schools, and neighborhoods. The mesosystem refers to the connections between microsystems. Examples of these interconnections can include the relation between family experiences and school experiences or school experiences and neighborhood experience. The exosystem is made up of public policy (Bronfenbrenner & Morris, 1998; 2006). In the case of immigrant youth, it can refer to pathways to citizenship, mental health care, and educational policies. The macrosystems refers to the culture in which

immigrant life (Bronfenbrenner & Morris, 1998; 2006). It includes socioeconomic status, cultural context, and xenophobia. Within this modified model, it also includes social mechanisms such as racism, discrimination, and prejudice (García et al., 1996).

The second framework that guided this research is the Stages of Migration theoretical approach (Ornelas & Perrreira, 2011). Originally a 5-stage model developed by Sluzki (1979), it was later modified into a 3-stage model (Ko & Perreira, 2010; Potochnick & Perreira, 2010; Ornelas & Perreira, 2011) to document the three distinct stages of migration that immigrants experience (i.e., premigration, migration, and post migration stages). Among the various studies focusing on immigrant populations and the different theoretical frameworks available, the Stages of Migration framework is most frequently used as theory that guides other researchers' work for its illumination of the many stressors associated with the migration experience (Ko & Perreira, 2010; Potochnick, Perreira, & Fulingni, 2012; Potochnick & Perreira, 2010; Ornelas & Perreira, 2011; Suárez-Orozco, Todorova, & Louie, 2002; Zuniga, 2002). According to this model, traumatic events before, during, and/or after relocating can lead to psychological distress (Ko & Perreira, 2010; Ornelas & Perreira, 2011; Sluzki, 1979). For example, pre-migration trauma or stressors might be related to the economic hardships experienced in their home countries and the reasons for the relocation. In the migration stage, the actual moving process can be a source of stress depending on the method by which people migrate (e.g., by plane, car, foot; Sluzki, 1979). For example, for some, the migration experience involves flying, driving, walking, or being smuggled across the border by trusted family or strangers (Ko & Perreira, 2010). Other migration experiences involve traveling alone, being robbed, assaulted, or raped, or spending time in detention centers

(Gudiño et al., 2011; Nazario, 2006; Perreira & Smith, 2007). Any traumatic events experienced during the migration trip can result in the development of psychological symptoms (Perreira & Ornelas, 2011). Finally, during the third stage, the post-migration stage, settlement stressors can include challenges in navigating life in the new country, including economic hardships, lack of social support, and social roles (Desjarlais, Eisenberg, Good, & Kleinman, 1995; Ko & Perreira, 2010; Sluzki, 1979).

Because the focus of this study was to understand how the immigration experience may influence academic outcomes of young Latinos, and given these guiding frameworks for the research, I sought literature linking migration stress to educational outcomes. Various search engines, including PsycNET, Eric, and ProQuest Social Services Abstracts were used to identify existing research on immigrant youth. A combination of search terms were used including the following: “foreign born,” “immigrant” “migration,” “migration stress,” “education,” “educational outcomes,” “academic achievement,” “youth,” “adolescents,” “children,” “Latinos,” and “Hispanics.” Each time, the combination of search terms used yielded from 1-24 results, with no studies looking at all of the variables of interest of this study simultaneously. Instead, some focused solely on the relationships between the migration experience and psychological distress (Ko & Perreira, 2010; Suárez-Orozo et al., 2005); immigrant youth’s experiences of acculturative stress post-migration (Gil & Vega, 1996; Roffman, Suárez-Orozco, & Rhodes, 2003; Roche & Kuperminc, 2012; Suárez-Orozo et al., 2002; Williams & Berry, 1999); educational attainment level comparisons between Latino immigrants and their U.S.-born Latino peers (Conger, Schwartz, & Stiefel, 2007; Schwartz & Stiefel, 2006); or on the unique educational challenges that undocumented

immigrants face (Clark-Ibañez, Garcia-Alverdín, & Alva, 2012; Perez, Espinoza, Ramos, Coronado & Cortes, 2009; Perez, Cortes, Ramos, & Coronado, 2010).

### **Migration Experience and Psychological Distress**

The number of immigrants in the U.S. rose to an all-time high in 2011, to 40.4 million (Pew Hispanic Center, 2013a,b). Of these, nearly half came from Latin American countries. Immigrants often experience psychological distress (APA Presidential Task Force on Immigration, 2012; Kosidou, Hellner-Gumpert, Fredlund, Dalman, Hallqvist, Isacson, & Magnusson, 2012; López Levers & Hyatt-Burhart, 2011; Ramírez Hinojosa, 2005). Anxiety, depression, and posttraumatic stress disorder have been observed among immigrant populations (Duldulao, Takeuchi, & Hong, 2009). Stress, in particular, has been reported as a psychological difficulty among immigrants (APA Presidential Task Force on Immigration, 2012). Among the predictors of psychological distress is length of time in the U.S., such that immigrants who have lived in the U.S. for a longer time experience more distress than newcomers (Ramírez Hinojosa, 2005). The literature on the relationship between age at migration and psychological distress is less conclusive. Some suggest that age at migration is associated with poor psychological well-being (Takeuchi, Hong, Gile, & Alegía, 2007), with immigrants who arrive as children being more likely to develop a mental disorder in their lifetime than those who arrive as adults. At the same time, others indicate that migrating at a young age can buffer a child's vulnerability to stress (García Coll & Magnuson, 1997). While much of the literature has focused on the experiences of adult immigrants, recent research has started to explore the experiences of immigrant youth (Gudiño et al., 2011; Ko & Perreira, 2010; Morland, Birman, Dunn, Adkins, & Gardner, 2013; Potochnick & Perreira, 2010; Ornelas & Perreira, 2011;

Suárez-Orozco, Todorova, & Qin, 2006). Research that has focused on the challenges faced by immigrant children indicates immigrant youth often experience emotionally and physically traumatic migration journeys (Morland et al., 2013). When exposure to violence is a part of their lived experiences, it is a predictor of negative mental health effects (Gudiño et al., 2011). Additionally, some experience psychological stress as a result of unplanned migrations (Ko & Perreira, 2010).

According to the American Psychological Association (2012), the migration experience itself can act as a catalyst for the development of psychological distress. The migration process is a stressful experience (Ko & Perreira, 2010; Perreira & Ornelas, 2011) associated with multiple adjustment stressors (Pérez Foster, 2001). The experience can involve stressors such as loss of support from extended family, discrimination, financial struggles, displacement of homes (Portes & Rumbaut, 2001; Suárez-Orozco & Suárez-Orozco, 2001; Zuniga, 2002), language barriers, and unsafe and stressful migration experiences (Ornelas & Perreira, 2011). Whether immigrants migrate with legal documents or without documentation, many describe it as a stressful experience (Ko & Perreira, 2010; Perreira & Ornelas, 2011). A study examining the migration experiences of Latino immigrant parents found that the majority of them experienced stressors during their migration experience (Ornelas & Perreira, 2011). Most parents feared for their safety, half considered the migration experience to have been stressful, and 13% reported experiencing a traumatic event during their travels to the U.S. (Ornelas & Perreira, 2011).

Family separation is another common source of migration stress (Mendoza, Javier, & Burgos, 2007; Mitrani, Santisteban, & Muir, 2004; Ko & Perreira, 2010;

Ornelas & Perreira, 2011; Suárez-Orozco et al., 2002). Family separation can occur during the pre-migration stage, when parents move to the U.S. and leave their children behind under the care of extended family. It can also occur post-migration, when immigrant children are separated from the extended family they were living with in their country of origin, in order to move to the U.S. and be reunited with their parents (Ko & Perreira, 2010). In a study exploring the migration experiences of foreign-born Latino parents, 41% of the parents reported they migrated to the U.S. without their children, suggesting family separation is a common occurrence. For many immigrants, the reunification process can take years (APA Presidential Task Force on Immigration, 2012). Of the 41% of parents who migrated to the U.S. without their children, 75% reported having been separated from them for at least one year, before being reunited with them again (Ornelas & Perreira, 2011). The average Latino immigrant parent was separated from their children for three years before reunification (Ornelas & Perreira, 2011).

Similar separation rates were found in another study focusing on the children of immigrants (Suárez-Orozco et al., 2002). In a study of 386 children of immigrants, Suárez-Orozco and colleagues observed that as many as 85% percent of children reported being separated from their parents at some point during the family's migration experience. Family separations varied from a few months to a few years (Suárez-Orozco et al., 2002). In cases in which separation occurred, children were at higher risk for developing depressive symptoms (Suárez-Orozco et al., 2002). In another study of 282 immigrant adolescents from China and various Latin American countries, findings indicated that nearly 75% of adolescents were separated from their parents before being

reunited during their migration process (Suárez-Orozco et al., 2011), with some participants reporting they were separated from one or both parents for nearly their entire childhood. Findings also indicated that the longer children were separated from their parents, the more likely they were to endorse symptoms of psychological distress (Suárez-Orozco et al., 2011). Stressors during the migration process are associated with higher risks for developing depressive symptoms and anxiety (Potochnick & Perreira, 2010).

While the migration experiences of immigrant youth is understudied, research on their experiences post-migration indicates that they experience stressors associated with moving to a new country. Among the stressors are feelings of isolation due to language barriers (Ko & Perreira, 2010). Additionally, for immigrants who migrate without legal documentation, their undocumented status comes with added stressors (APA Presidential Task Force on Immigration, 2012; Ko & Perreira, 2010). Immigrant youth as young as 14 years old are able to understand that their legal status limits the opportunities available to them, including limitations with respect to academic aspirations and career goals (Ko & Perreira, 2010). In cases in which deportation occurs during migration, higher levels of psychological distress are observable (Thronson, 2010). Fear of deportation is not exclusive to undocumented immigrants but affects those with documentation as well (Chaudry, Capps, Pedroza, Castañeda, Santos, & Scott, 2010; Perreira & Ornelas, 2011; Potochnick & Perreira, 2010).

Immigrant children often live with a parent or an extended family member who was born outside of the U.S. and lacks legal documentation (Chaudry et al., 2010). A mixture of citizenship and legal status within families occurs when not all family

members have the same legal status. For example, some family members might be U.S. citizens, others might be permanent legal residents, and some might be undocumented. In these “mixed” families, youth may experience a fear of family separation, even if they are not undocumented themselves, out of fear that their family member might be deported (Chaudry et al., 2010). This fear can take a toll on their psychological well-being (Chaudry et al., 2010). Since 2009, nearly 400,000 undocumented immigrants have been deported each year (Pew Hispanic Center, 2013a). Estimates suggested that in 2012, one out of three Latino immigrants reported they personally knew someone who had been deported or detained by immigration officials (Pew Hispanic Center, 2013a). Children from mixed families appear to be at greater risk of anxiety and depression (Potochnick & Perreira, 2010).

Following their migration journey, immigrants experience acculturative stressors associated with their transition to life in the U.S (Roffman et al., 2003). Acculturative stressors can include difficulty learning a new language, coping with changes within their families, including possible changes with respect to family roles. Immigrants also contend with experiences of discrimination and racism (Perreira & Ornelas, 2011). Experiences of discrimination have been associated with psychological distress (Potochnick et al., 2012). Youth who experience discrimination report higher symptoms of anxiety and depression, more risky health behaviors, and lower academic motivation (González, Fabrett, & Knight, 2009). These findings suggest that stress associated with the migration experience might pose as a risk to the psychological well-being of immigrant youth (Katsiaficas, Suárez-Orozco, Sirrin, & Gupta, 2013). Additional mental health problems that have been observed with immigrant populations include anxiety and

post-traumatic stress disorder (Loue, 1998; Potochnick et al., 2012). The experience of adjustment stressors suggests the complexity involved in moving to the U.S. (Pérez Foster, 2001). It appears that stress and the development of mental health problems may be associated with the migration and acculturation processes that immigrants experience (López Levers & Hyatt-Burkhart, 2011).

Much of the research available on the impact of migrating on an immigrant's psychological well-being is based on studies that have focused on adult immigrant populations (Alegría, Mulvaney-Day, Torres, Polo, Cao, & Canino, 2007; Díaz-Guerrero, 1995; Hovey & Magaña, 2002; Salgado de Snyder, 1987; Vega, Kolody, Aguilar-Gaxiola, Alderte, Catalano, & Caraveo-Anduaga, 1998). Less is known about the migration experiences of immigrant youth, especially with respect to their psychological adjustment (Levitt, Lane, & Levitt, 2005). In one of a handful of studies with immigrant youth, psychological adjustment levels were compared among immigrant children and parents from Argentina, Columbia, Haiti and the West Indies. Correlations between stress, support, and adjustment were observed (Levitt et al., 2005). Higher levels of stress were correlated with lower psychological well-being, as documented by higher levels of depression and anxiety following their first year after migrating to the U.S. (Levitt et al., 2005). In this particular study, social support mediated the relationship between stress and psychological adjustment for parents to a greater degree than for children (Levitt et al., 2005).

Despite the negative impact that the various stages of the migration experience can have on the development psychological distress, there are gaps in the literature with respect to research that simultaneously explores migration experiences, including

migration stressors, and their relation to psychological distress and educational attainment levels among Latino immigrant youth. A PsycNET search using the terms “psychological distress,” “immigrant,” and “youth” yielded only four results. Of these, only two included Latinos in the sample (Kuperminc, Jurkovic, & Casey, 2009; Kuperminc, Wilkins, Jurkovic, & Perilla, 2013), and none focused on educational variables. Still, we know mental health problems can increase the likelihood of having lower educational attainment levels (Fletcher, 2008). Given Latino immigrants’ lower educational attainment rates, the relationship between mental health problems and academic achievement, and the many stressors and multiple traumatic experiences that immigrants might experience, it is important to gain a better understanding of the lived experiences of Latino immigrant students in order to be better able to support their academic success and persistence.

### **Discrimination and Educational Outcomes**

A national survey conducted in 2007 found that over half (54%) of Latinos in the U.S. believed discrimination was a major problem that prevented them from succeeding in this country (Pew Hispanic Center, 2009). Perceived discrimination has been linked with academic success (Alfaro et al., 2009; Benner & Graham, 2011). A study of Latino high school students found that experiences of discrimination were related to GPA. In particular, higher levels of experiences of discrimination were related to lower academic motivation, and in turn, lower GPAs among Latino males (Alfaro et al., 2009). In a longitudinal study of predominantly second and third generation Latino youth, higher levels of discrimination were associated with lower academic outcomes, such that Latino

youth with higher levels of discrimination obtained lower grades and had more school absences (Benner & Graham, 2011).

Similar findings have been obtained in research focusing on the experiences of adolescents from racial and ethnic minority backgrounds (Eccles, Wong, & Peck, 2006; Martínez, DeGarmo, & Eddy, 2004). In a longitudinal study exploring African American youth's experiences, findings indicated that experiences of racial discrimination at school were negatively associated with grades, such that youth who reported higher levels of daily racial discrimination also obtained lower grades (Eccles et al., 2006). Similarly, in a study exploring academic success among Latino youth, higher levels of experiences of discrimination were associated with lower grades and a lower likelihood that the youth would stay in school (Martínez, DeGarmo, & Eddy, 2004). Most recently, a meta-analysis on the relationship between experiences of discrimination and outcomes among Latinos also noted a negative relationship between discrimination and a number of outcomes, including lower educational outcomes (Lee & Ahn, 2012) and psychological distress (Moradi & Risco, 2006).

Like discrimination, awareness of discrimination is also associated with educational outcomes (APA Presidential Task Force on Educational Disparities, 2012). Some studies suggest that an increased awareness of discrimination by youth is correlated with a decrease in academic success (Hughes, Witherspoon, Rivas-Drake, & West-Bey, 2009; Portes & Rumbaut, 2001; Suárez-Orozco & Suárez-Orozco, 1995) and with youth being more susceptible to negative behavioral outcomes such as deviant behavior (Hughes et al., 2009). Yet, others indicate that youth who are aware of social inequities and discrimination have better educational and occupational outcomes, suggesting that

awareness of discrimination can serve as a buffer (Diemer, 2009). Research also shows that awareness of prejudice and discrimination can also negatively influence psychological well-being and contribute to psychological distress (Uba, 1994). Since mixed findings are documented in the literature, and since most of these previous studies utilized U.S.-born samples, this study specifically aimed to explore the impact of awareness of discrimination in a sample of Latino immigrant youth.

### **Psychological Distress and Educational Outcomes**

A growing body of research supports a relationship between mental health well-being and psychological distress with educational outcomes (Fletcher, 2008; McLeod & Kaiser, 2004; McLeod, Uemura, Rohrman, 2012; Needham, Crosnoe & Muller, 2004). These studies find that youth who experience multiple indicators of mental health problems, including psychological distress, perform less well in school and achieve lower educational outcomes (Fletcher, 2010; McLeod et al., 2012; McLeod & Kaiser, 2004; Needham et al., 2004). Depression, in particular, has been linked with lower educational outcomes (Basáñez, Warren, Crano, & Unger 2013; Hishinuma, Chang, McArdle, & Hamagami, 2012; Woodward & Fergusson, 2001; Zynchinski & Polo, 2012) and with a higher likelihood of failing classes (Needham et al., 2004). A study by Zynchinski and Polo (2012) explored the relationship between depressive symptoms and academic achievement in a sample of 131 low-income Latino youth, most of whom (84%) were born in the U.S. Results indicated that depression negatively impacted academic achievement, as measured by the students' grade point average and scores on a standardized achievement test. Similar findings were reported in a longitudinal study in

which depressive symptoms were linked lower educational outcomes, as measured by students' grade point average (Hishinuma et al., 2012).

A significant relationship between depression and academic achievement has also been observed among foreign-born Latino youth. In a study exploring the relationship between psychosocial stress, internalized symptoms, and the academic achievement of 171 Latino high school youth (67% of who were foreign-born), results indicated a significant negative relationship between depression and academic achievement (Alva & de los Reyes, 1999). Specifically, higher symptoms of depression were correlated with lower grades, as measured by the students' grade point average (GPA). Interestingly, symptoms of anxiety were not significantly associated with GPA in this population.

Since much of the research on the association of mental health with educational outcomes has primarily utilized measures of depression, McLeod and colleagues (2012) pointed to need for research to incorporate a broader array of emotional indicators besides depression as measures of psychological distress. Given that anxiety, depression, and posttraumatic stress disorder have been observed among immigrant populations (Duldulao et al., 2009), this study used these three indicators as to measure psychological distress.

### **Discrimination and Psychological Distress**

Consistent with the social-ecological framework (García Coll et al., 1996), which emphasizes the importance of discrimination on the development of racially and ethnically minority youth, discrimination and psychological distress were also explored in this study. Experiences of discrimination are often documented in research on immigrants (APA Presidential Task Force on Immigration, 2012; Deaux, Bikman, Gilkes,

Ventuneac, Joseph, Payne, & Steele, 2007; Dietz, 2010; Ko & Perreira, 2010; Ornelas & Perreira, 2011; Potochnick et al., 2012). Immigrants experience discrimination in a myriad of settings (Ornelas & Perreira, 2011) such as in the work place (Dietz, 2010), school settings (Ko & Perreira, 2010) and in other community service agencies (APA Presidential Task Force on Immigration, 2012). Particularly in the context of the country's current anti-immigrant climate, xenophobia affects Latino immigrants (APA Presidential Task Force on Immigration, 2012). Discrimination might be experienced based on legal status, skin color, English-speaking abilities, and socioeconomic status (López, Morin, & Taylor, 2010). In a study on the migration experiences of Latino immigrant parents, almost a third of the sample reported experiencing discrimination and being treated as less competent and being made to feel unwelcome post-migration (Ornelas & Perreira, 2011).

Discrimination has a significant and negative influence on mental health (Brown, Williams, Jackson, Neighbors, Torres, Sellers, & Brown, 2000; Ornelas & Perreira, 2011; Torres, Yznaga, & Moore, 2011; Pascoe & Smart Richman, 2009; Williams, Neighbors, & Jackson, 2003). A meta-analysis exploring the relationship between perceived discrimination and health found that perceived discrimination was associated with higher levels of stress (Pascoe & Smart Richman, 2009; APA Presidential Task Force on Immigration, 2012) and mental health difficulties such as depression, distress, and anxiety (Brown et al., 2000; Williams et al., 2003). Higher reports of perceived discrimination are correlated with higher daily symptoms of depression and anxiety (Potochnick et al., 2012). In a study on Latino immigrant parents, discrimination was

associated with higher depressive scores on measures of depression (Ornelas & Perreira, 2011).

A recent study of Latino adults, which included adult samples of college students and non-college enrolled community members, found a strong relationship between discrimination and psychological distress. Over a third of the Latino adults in the sample (34%) experienced psychological distress (Torres, Driscoll, & Voell, 2012). Similar findings have also been reported in other studies with Latino college students. Torres found that among Latino college students, attributions of discrimination to ambiguous events were associated with increases in symptoms of depression (Torres, 2009).

### **Social Support and Psychological Distress**

Social support is a critical element in helping immigrants overcome the risks and adversity associated with their migration to the U.S. (Fernandez-Kelly, 1995; Perreira & Ornelas, 2011) and promoting healthy adolescent adaptation (Katsiaficas et al., 2013). Social support can take multiple forms and can be defined in a number of ways (Witkow & Fulingi, 2011). Generally, social support involves perceptions of supportive behaviors (Malecki & Demaray, 2006) and supportive actions from others, such as advice (Fulingi, 1997; Mackinnon, 2012; Plunkett & Bámaca-Gómez, 2003), reassurance (Mackinnon, 2012), and caring (Sands & Plunkett, 2005). In a study exploring the relationship between acculturative stress, perceptions of social support, and psychological well-being among racially/ethnically diverse adolescents of different generational levels, social support was found to mediate the relationship between acculturative stress and internalizing symptoms of depression and anxiety, especially for immigrants (Katsiaficas et al., 2013). These findings suggest that social support acts as a protective factor against

psychological distress. Protective factors such as family, coping strategies, and social supports minimize the impact of acculturative stress (Gonzales, Knight, Morgan-López, Saenz, & Sirolli, 2002; Gonzales et al., 2009; Umaña Taylor & Alfaro, 2009). Similar findings have been noted in adult immigrant samples. For example, in a recent study on Latino immigrant adults, Perreira and Ornelas (2011) found that social support was inversely associated with depressive symptoms.

High levels of reported support have been associated with lower depressive symptomology (Brown et al., 2009; Falcón, Todorova, & Tucker, 2009; Hovey, 2000a; 2000b; Potochnick & Perreira, 2010). Existing literature suggests that family support is associated with mental health and well-being among Latino families. When people have a strong family base, they are less likely to experience depressive symptomology (Pérez, Araujo Dawson, & Suárez-Orozco, 2011). Latino youth who report more positive relationships with their parents are less likely to endorse symptoms of depression or anxiety (Potochnick et al., 2012). In a study exploring the migration experiences of adult Latino immigrants, social support acted as a buffer against depressive symptomology, with immigrants who reported higher levels of social support found to have lower levels of stress and fewer depressive symptoms (Ornelas & Perreira, 2011). Findings on Latino immigrant youth suggest that the higher students' perceived parental and teacher support, the lower their reported internalizing symptoms (Potochnick & Perreira, 2010).

Positive social interactions with teachers, and in particular feeling respected by them, are also positively associated with increased well-being and lower levels psychological distress. In contrast, negative social interactions at school were associated with higher levels of anxiety and depressive symptomology (Potochnick et al., 2012).

Many Latino immigrant youth cope by relying on supportive networks (Ko & Perreira, 2010).

### **Social Support and Educational Outcomes**

A synthesis of the research on Latino immigrants strongly suggests that support systems act as protective factors, and that perceived support from support systems is positively related to academic achievement and engagement (Alfaro et al., 2006; Peguero & Bondy, 2011; Pérez et al., 2009; Plunkett, Behnke, Sands, & Choi, 2009). Parental, teacher, and peer support have been identified as protective factors of academic success (Alfaro et al., 2006; Peguero & Bondy, 2011; Pérez et al., 2009; Plunkett et al., 2009). In a longitudinal study exploring the relationship between support and school achievement among students of ethnically and racially diverse backgrounds, those who reported higher levels of support were more likely to obtain higher SAT scores and less likely to report feelings of loneliness (Levitt, Guacci-Franco, & Levitt, 1994). The relationship between perceived support and SAT scores was positively related for Latino youth at significant levels. These findings contributed to the growing body of literature on the important influence of social factors on academic outcomes (Levitt et al., 1994). In the sections that follow, the literature linking parental and teacher support to youth's academic achievement is reviewed.

**Parental Support and Academic Outcomes.** Immigrant parents cite being able to provide better educational opportunities for their children as one of the reasons for migrating to the U.S. (Suárez-Orozco, Suárez-Orozco, & Todorova, 2008), and they report aspirations for their children to graduate from college (Fuligni & Witkow, 2004). The critical role that parental support plays in the academic success of children is well

documented in the literature. Parental support is positively associated with academic success (Woolley, Kol, & Bowen, 2009), academic engagement (Garcia-Reid, Hamme Peterson, & Reid, 2013; Plunkett, & Bámaca-Gomez, 2003), and higher academic motivational levels (Alfaro et al., 2006; Anguiano-Viramontez, 2004; Kuperminc, Darnell & Alvarez-Jimenez, 2008; Plunkett, Henry, Houlberg, Sands, & Abarca-Mortensen, 2008). Like social support, parental support can also take many forms. Consistent with the literature, parents support is defined as meaningful, caring and supportive relationships that can include talking about school, future educational plans (Plunkett, & Bámaca-Gomez, 2003; Rothon, Goodwin, & Stansfeld, 2011; Witkow & Fulingi, 2011), and that make children feel that their parents care about them and expect them to do well (Garcia-Reid et al., 2013).

A study of 273 high school students of Mexican backgrounds examined the relationship between academic outcomes and parenting, and found a positive relationship between parental support and adolescents' academic motivation (Plunkett & Bámaca-Gomez, 2003). Academic motivation consisted of the youth's exerted efforts in school, the extent to which they finished homework on time, their liking their school in general, and the perceived importance of grades and education. Parents demonstrated their support by engaging in supportive interactions and monitoring their children's education (Plunkett & Bámaca-Gomez, 2003). Parental support is also associated with higher GPA outcomes (Suárez-Orozco et al., 2009).

With respect to academic motivation, a study of 310 Latino adolescents found that parental support was positively related to academic motivation for both boys and girls (Alfaro et al., 2006). Similar findings were observed in a sample of families of Mexican

origin (Plunkett et al., 2008), in which support, defined as caring, assisting, inspiring, or guiding youth on their academic activities, was associated with both academic motivation and grades (Plunkett et al., 2008).

In addition to the literature on support from parents, studies have also explored the role of family support in general. Academic support from family members is also positively associated with academic performance and GPA levels (Díaz Soto, 1989; Newman, Lohman, Newman, Myers, & Smith, 2000). A study exploring Puerto Rican elementary school-aged students found that students who reported high levels of family support obtained higher GPAs (Díaz Soto, 1989). Similarly, a qualitative study exploring the transition to high school among a sample of 29 low-income minority adolescents found that students who reported more support from their immediate family also reported higher GPAs than students with lower levels of family support (Newman et al., 2000).

Given that cultural factors characteristic of Latino families include a value for *familismo*, some of the literature has utilized measures of familism to assess family support (Esparza & Sanchez, 2008; Stein, Gonzalez, Cupito, & Supple, 2013). *Familismo* is a concept characterized by strong emotional ties with immediate and extended family, shared identity, and loyalty and obedience to family (Delgado-Romero, Galván, Hunter, & Torres, 2008; Marin & Marin, 1991; Santiago-Rivera, Arredondo, & Gallardo-Cooper, 2001). Familism may serve as a type of social support (Kuperminc et al., 2009). Esparza and Sanchez (2008) noted that higher familism values are associated with greater academic efforts, and that for participants whose mothers had low educational attainment levels (high school or less), familism was positively associated with GPA.

**Teacher Support and Academic Outcomes.** Like the value of parental support, teacher support is also important to the academic success of students (Alfaro et al., 2006; Woolley et al., 2009). Teacher support can take many forms. Generally, teacher support involves caring feelings (Plunkett et al., 2008; Rosenfeld et al., 2000; Sands & Plunkett, 2005), encouraging, or inspiring youth toward current and future educational outcomes (Sands & Plunkett, 2005; Plunkett et al., 2008), demonstrating an interest in youth's education outcomes (Alfaro et al., 2006), and providing emotional, informational, and tangible support (Malecki & Demaray, 2006; Rosenfeld et al., 2000; Suárez-Orozco et al., 2009). Teacher support is associated with students' academic motivation (Alfaro et al., 2006; Newman et al., 2000). A study of 310 Latino adolescents found that teacher support is positively related to academic motivation for both boys and girls (Alfaro et al., 2006). Academic support from teachers is also positively related to academic performance and academic satisfaction (Kao & Tienda, 1995; Plunkett et al., 2008). A study exploring academic support by significant others and its relation to academic resilience found that academic support from teachers was the strongest predictor of GPA for both males and females (Plunkett et al., 2008), more so than parental or peer support. Perceived support from teachers is also important in promoting academic success (Kao & Tienda, 1995; Plunkett et al., 2008). In a mixed-methods study examining the significance of relationships with respect to the academic engagement and achievement of immigrant youth, supportive relationships at school were associated with academic performance, measured by GPA, among immigrants of Chinese and Latin American backgrounds (Suárez-Orozco et al., 2009).

Supportive networks, including supportive teachers and parents, appear to have a strong influence on the education aspirations and achievement levels among Latino students, including Latino immigrants (Alfaro et al., 2006; Altschul, 2011; Kao & Tienda, 1995; Levitt et al., 1994; Pérez et al., 2009; Plunkett & Bámaca-Gomez, 2003; Suárez-Orozco et al., 2009). Such a relationship is consistent with the guiding frameworks of the study, however, less is known about whether this support moderates the relationships between migration stress, psychological distress, and academic achievement. Consequently, the present research aimed to explore this moderating relationship.

Based on prior research, I expected to find significant relationships between migration stress, psychological distress, discrimination, awareness of discrimination, and educational outcomes. I also expected that both psychological distress and awareness of discrimination would have mediating roles in the model. Lastly, based on prior research documenting the important role that support systems play with respect to educational outcomes, I hypothesized that these relationships would differ for immigrant youth, depending on the levels of support they perceived.

### **Purpose of the Study**

The purpose of this project was to contribute to the literature on the educational outcomes of Latino immigrant youth. In particular, this study tested a model predicting educational aspirations, educational expectations, and GPA in a Latino immigrant youth population. Specifically, I explored whether migration stress, psychological distress, personal experiences of discrimination, and awareness of discrimination influenced

educational outcomes. I also examined the impact that stress associated with migrating to the U.S. had on the development of psychological distress.

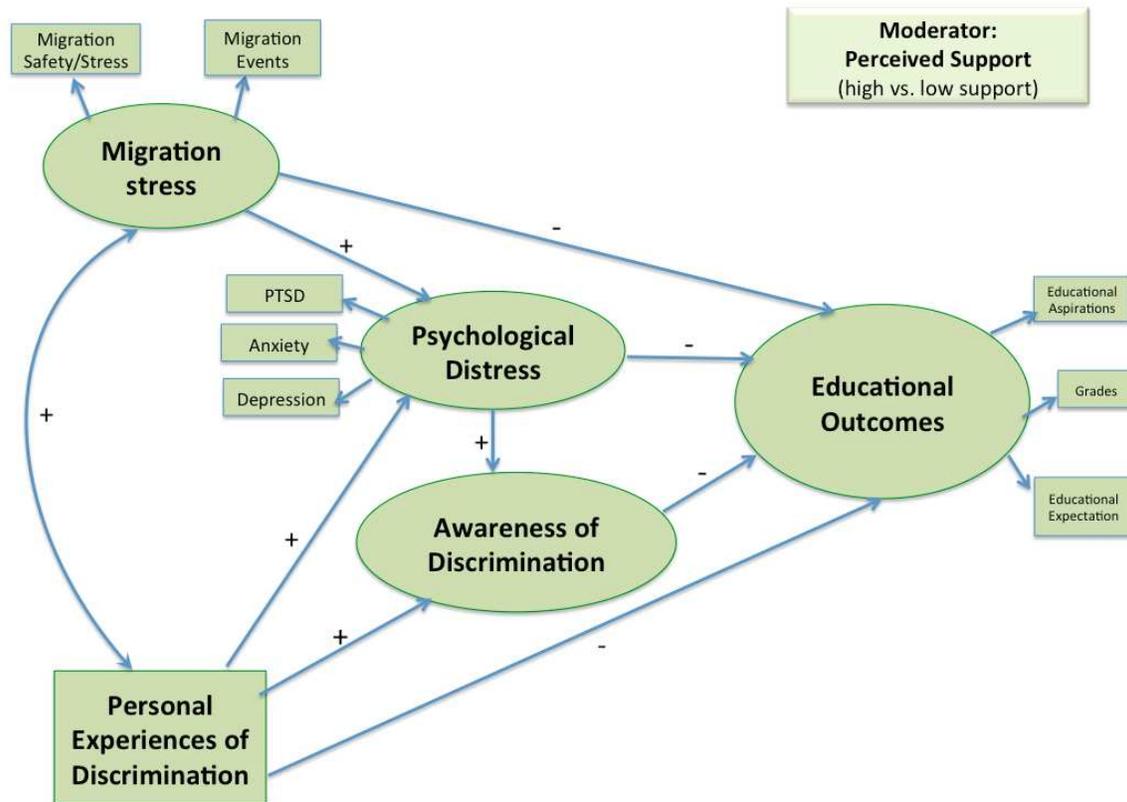
This study also explored risk and protective factors (i.e., support systems) among immigrant youth. Using existing data, I examined whether psychological distress and awareness of discrimination mediated the relationships between migration stress, experiences of discrimination, and educational outcomes. The theoretical model tested in this study is depicted in Figure 1. I also tested a model to explore whether support systems moderated the relationship between migration stress, psychological distress, experiences of discrimination, awareness of discrimination and educational outcomes. Of particular interest in this research study was to better understand: (1) the role that perceived support (i.e., family support, teacher support, and social support) plays with respect to educational outcomes; and (2) the degree to which support systems moderate the relationship between educational outcomes and migration stress, discrimination, and psychological distress. I hypothesized that the impact of migration stress on educational outcomes and psychological distress would be lower for people who perceived more support.

Both the cultural-ecological and the Stages of Migration frameworks, along with the literature reviewed suggested the proposed model should work. This particular model has not been tested before. The study is unique in nature because it is the first to use a strictly foreign-born Latino youth population in exploring the relationships between the variables of interest. This study used existing data to address the following questions, all of which are reflected in the model depicted in Figure 1:

1. Do migration stress, psychological distress, personal experiences of

- discrimination, and awareness of discrimination influence educational outcomes?
2. Does migration stress influence psychological distress?
  3. Does psychological distress mediate the relationship between migration stress and educational outcomes, and between personal experiences of discrimination and educational outcomes?
  4. Does awareness of discrimination mediate the relationship between psychological distress and educational outcomes?
  5. Do personal experiences of discrimination influence psychological distress?
  6. Does perceived support moderate the relationship between migration stress and psychological distress, and between psychological distress and educational outcomes?
  7. Does perceived support moderate the relationship between experiences of discrimination and psychological distress and between personal experiences of discrimination and educational outcomes?

Figure 1. Overall Conceptual Mediation Model



*Note.* Under conditions of high support, the following paths are expected to have coefficients of lower magnitude: (1) the path between migration stress and educational outcomes, (2) the path between migration stress and psychological distress, (3) the path between psychological distress and educational outcomes, and (4) the path between personal experiences of discrimination and educational outcomes. Under lower support, the following paths are expected to have coefficients of higher magnitude: (1) the path between migration stress and educational outcomes; (2) the path between migration stress and psychological distress, (3), the path between personal experiences of discrimination and psychological distress, and (4) the path between personal experiences of discrimination and educational outcomes.

## CHAPTER III

### METHODS

The research design used in this study was a non-experimental, cross-sectional research design. An existing data set obtained from the Latino Adolescent Migration Health and Adaptation (LAMHA) Project was used.

#### **Participants**

A total of 281 Latino immigrant youth participated in the study. Of the 281, 45% were boys ( $N = 126$ ) and 55% were girls ( $N = 152$ ). Participants ranged in age from 12 to 19 years old ( $M = 14$ ). Approximately three fourths (73%) of the participating youth were of Mexican origin, 22% were from Central American or Caribbean countries, and 4% were from South American countries. The majority of the participants were not U.S. citizens (95%), and more than half (65%) had lived in the U.S. for five years or less. Despite their limited number of years in the U.S., 70% of the youth had high levels of English language proficiency. When asked in which language they thought, 36% stated they thought in English and Spanish equally. Another 18% endorsed thinking more in Spanish than in English, and 15% reported thinking more in English than in Spanish. Identical statistics were noted when participants were asked in what language they spoke with friends (36% said both languages equally; 18% said more Spanish than English; 15% said more English than Spanish).

Demographics for their age at arrival indicated that most (66%) migrated to the U.S. between the ages of 6 and 12 years old (15% migrated before age 6, and 20% migrated at age 13 or older). A little more than half of the participating students (55%) lived with both biological parents at the time of the data collection. Approximately four

out of five participants stated that moving to the U.S. was the best thing for their family (82%) and for themselves (80%).

With respect to academic aspirations, 68% had aspirations of a post-secondary education. Specifically 37.9% aspired to obtain a graduate degree and 30.1% aspired to a bachelor’s degree. Compared to the high percentage reported for educational aspirations, their educational expectations were much lower, with only 56% of participants who actually expected to achieve their educational aspirations (see Table 1).

Table 1

Demographic Information

	Percentage	N
<b>Gender</b>		
Male	49%	138
Female	51%	144
<b>Educational Aspirations</b>		
Graduate degree	37.9%	107
Bachelor's degree	30.1%	85
Vocational/Trade school	5.7%	16
High school	17.4%	49
Less than high school	1.1%	3
<b>Educational Expectations</b>		
Graduate degree	26.2%	74
Bachelor's degree	22.7%	64
Vocational/Trade school	11%	31
High school	26.6%	75
Less than high school	3.2%	9

Year in School/School Type		
Middle school	45%	127
High school	55%	155
Grades Obtained in School		
Mostly A's and B's	42.9%	121
Mostly B's and C's	35.1%	99
Mostly C's	8.9%	25
Mostly C's and D's	4.6%	13
Mostly D's and F's	2.5%	7
Age at Arrival		
Before age 6	19.50%	53
6 years old to 12 years old	58.50%	159
13 years old or older	22%	60
Citizenship Status		
Non-U.S. Citizen	95%	248
U.S. Citizen	5%	17

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## Procedures

The present study used data from the LAMHA Project, a population-based survey of mental health, migration, and acculturation among Latino immigrant youth and their parents in North Carolina.

The LAMHA research team collected survey data between August 2004 and November 2006 in a weighted sample of 281 parent-child dyads. Using a stratified random sampling, the LAMHA research team sampled Latino immigrant youth living in high-growth Latino communities in North Carolina. High-growth Latino communities were defined as communities which experienced  $\geq 394\%$  growth in their Latino

population between 1990 and 2000, and whose Latino population was of at least 5,000 people. Communities were divided into urban and rural strata, and high schools within these strata were randomly selected to participate in the study. For each high school selected in a community, its feeder middle school was also selected to participate. A total of 25 schools were invited to participate in the study from 4 different urban and 6 different rural school districts ( $n = 11$  high schools,  $n = 14$  middle schools).

For each school selected, a roster of all its students who self-identified as “Hispanic/Latino” or students whose last names were of Hispanic/Latino origin was obtained. These youth were then contacted by the research team and screened for eligibility. The inclusion criteria for the study required that youth be foreign-born and that their parents be foreign-born as well. To be eligible for the study, the youth also had to be between the ages of 12 and 18 on October 1, 2004, and they had to be enrolled in any grade between 6<sup>th</sup> and 12<sup>th</sup> for the 2004-2005 academic year. Of the students who were identified to be eligible for inclusion, a number of them were randomly selected from each school. The number of students selected from each school was proportional to the size of the school’s Latino student population. The response rate was 69%, and those who declined to participate almost uniformly reported that they did not have enough time to participate.

The participants were administered a survey in their preferred language. No information is provided about the process by which measures were translated in cases in which the participant’s preferred language was Spanish. A research team member was present when the participants completed the survey to show them how to complete the measures. After completing a few pages together in an interview format, the participants

were allowed to fill out the rest of the survey on their own. When participants did not feel comfortable completing the survey on their own, the research team member read the complete survey to them. Specific data documenting the percentage of participants who completed the surveys in Spanish versus English was not available. Additionally, no information regarding the number of participants who completed the measure on their own (vs. those who required assistance) was available. Data used in this study come from the survey responses for the 281 youth who were recruited.

## **Measures**

In this section, I describe each of the instruments used in the study. A copy of the measures is presented in the Appendix. The current study used self-report data obtained from foreign-born, Latino immigrant youth.

**Family Support.** Family support was assessed using 30 items from the Family Adaptation and Cohesion Scale (FACES II; Olson & Gorall, 2003). The FACES II consists of two subscales (i.e., cohesion and flexibility subscales), which assess the extent to which families are flexible and connected. Each sub-scale is comprised of 15 items. Odd items in the measure comprise the cohesion subscale. Items measuring cohesion include: “In my family, we do things together,” “Family members feel very close to each other,” and “Family members consult other family members about personal decisions.” Even items in the measure comprise the flexibility subscale. Items measuring flexibility include: “We shift household responsibilities from person to person,” and “We try new ways to deal with problems.” For the purposes of this project, the whole measure will be used to measure family support. The 5-point Likert scale response options range from 1 (*almost never*) to 5 (*almost always*). Extremely low scores represent rigid or disengaged

family patterns. Extremely high scores represent enmeshed or chaotic family patterns. Internal consistency reliability for the cohesion subscale was  $\alpha = .87$  and  $\alpha = .78$ , when used with samples of predominately white, middle-class families with adolescents, married couples without children, as well as samples of university and high school students (Olson, Portner, & Bell, 1982). Concurrent validity for FACES II was high (.93) when correlated with the Dallas Self-Report Family Inventory (Hampson, Hulgus, & Beavers, 1991). There is also good evidence that the FACES II measure has face validity and content validity (Olson, 1992). Internal consistency reliability for this sample was  $\alpha = .83$ .

**Familism.** The Familism Scale (Olson et al., 1982) is a 7-item measure assessing family cohesion and loyalty. The 5-point Likert scale response options range from 1 (*strongly agree*) to 5 (*strongly disagree*). Sample items include: “Family members respect one another,” “We can express our feelings with our family,” and “We are proud of our family.” The responses for this scale were reverse coded such that 1=*strongly disagree* and 5=*strongly agree*. In this way, higher scores represented higher levels of familism. This measure has been observed to have construct validity (Gaines, Marelich, Bledsoe, Steers, Henderson, Granrose, Barajas, et al., 1997). The internal consistency reliability for this scale was  $\alpha = .89$  when used with a Latino adolescent sample (Gil et al., 1994). Internal consistency reliability for this sample was higher, with  $\alpha = .93$ .

**Teacher Support.** Teacher support was assessed using the 11-item Teacher Support subscale of the School Success Profile (Bowen & Richman, 1997). The Teacher Support measure assesses students’ perceptions of teachers’ behaviors and attitudes towards them, including teacher praise, encouragement, and academic expectations.

Sample items include: “My teachers care about the grades I make,” and “I receive a lot of encouragement from my teachers.” All items are stated positively. The dichotomous response options are 0 (*false*) and 1 (*true*), with total scores ranging from 0-11. Higher counts of “yes” items represent higher levels of teacher support. Internal consistency reliability was  $\alpha = .86$ , when used with racially and ethnically diverse samples of middle school and high school-aged students of financially disadvantaged backgrounds (Bowen, Rose, & Bowen, 2005). The validity of the Teacher Support subscale has been supported in previous work and factor loadings for items on this subscale ranged from .49 to .72 (Bowen et al., 2005). Internal consistency reliability for this sample was  $\alpha = .79$ .

**General Social Support.** Social support was assessed using the Social Support subscale within the School Success Profile measure (Bowen & Richman, 1997). The scale is comprised of eight dichotomous items assessing students’ perceptions that there are people they can turn to for various types of social support and assistance. Sample items include: “Are there people you talk to at least weekly who encourage you to do well?,” “Are there people you talk to at least weekly who comfort you and tell you they are on your side?” and “Are there people you can talk to at least weekly who help in practical ways, such as by giving you a ride or helping with your homework?” The dichotomous response options are 0 (*no*) and 1 (*yes*), with total scores ranging from 0-8. All items are stated positively. Higher counts of “yes” items indicate greater social support. This measure has been observed to have construct validity (Bowen et al., 2005). Individual factor loadings for items on this subscale were measured to range from .50 to .73 (Bowen et al., 2005). Internal consistency reliability was  $\alpha = .81$ , when used with

racially and ethnically diverse samples of middle- and high school aged students (Bowen et al., 2005). Internal consistency reliability for this sample was  $\alpha = .57$ .

**Psychological Distress.** Psychological distress was assessed using three subscales of the Trauma Symptom Checklist for Children (TSCC-A; Briere, 1996). The 44-item measure assesses post-traumatic stress (PTSD) and related symptomatology and is composed of seven sub-scales. The 4-item response options range from 1 (*never*) to 4 (*almost all the time*). Respondents indicate which of the statements they sometimes think of, feel, or do, including “feeling afraid something bad might happen,” “pretending I’m somewhere else,” and “worrying about things.” In this study, three subscales within the Trauma Symptomology measure will be explored: (1) anxiety, (2) depression, and (3) post-traumatic stress. Internal consistency reliability was  $\alpha = .82$  for the anxiety subscale;  $\alpha = .86$  for the depression subscale, and;  $\alpha = .87$  for the post-traumatic stress subscale, when used with a sample of children and adolescents from a range of racial and socioeconomic backgrounds, including inner-city, urban, and suburban environments (Briere, 1996). Briere and colleagues (2001) report that this measure has predictive validity. Internal consistency reliability for this sample was  $\alpha = .79$  for the anxiety subscale;  $\alpha = .83$  for the depression subscale, and;  $\alpha = .82$  for the post-traumatic stress subscale.

**Migration Stress.** Consistent with how migration stress has been measured in a previous study of an adult sample (Ornelas & Perreira, 2011), stress during the migration process for the Latino immigrant youth in this sample be assessed via items describing different aspects of the migration experience (Chapman & Perreira, 2004). First, participants were asked if they were ever concerned for their safety during their travels to

the U.S. An indicator variable was created such that a 0 = *no* and 1 = *yes*. Second, participants were asked how stressful their move to the U.S. was. A second indicator variable was created for the Likert-scale response, such that 0 = *not at all stressful*, 1 = *somewhat stressful*, and 2 = *very stressful*. Together, these two items made up “Migration Safety/Stress.” Then, participants were asked whether they experienced any of the following traumatic events during their journey to the U.S.: robbery, physical attack, accidental injury, or an illness. A third indicator variable was created to note whether participants experienced any traumatic event during their migration process. For each traumatic event listed, an indicator variable was created such that a 0 = *no* and 1 = *yes*. Finally, participants were asked if they traveled with their “mother and/or father” during their migration experience. An indicator variable was created such that a 0 = *yes* and 1 = *no*. Together, the two items assessing traumatic experiences and travel experiences with parents were combined to form “Migration Events.” Migration stress was then assessed using the total sum of “Migration Safety/Stress” and “Migration Events,” with higher scores documenting higher migration stress. Internal consistency reliability for this sample was calculated to be  $\alpha = .55$ . No other psychometric data has been reported for this construct in the literature.

**Awareness of Discrimination.** Awareness of discrimination is comprised of a series of six items in the survey (Chapman & Perreira, 2004). The 4-point Likert scale response options range from 1 (*agree a lot*) to 4 (*disagree a lot*). Four of the six items are worded negatively. These were recoded such that higher scores demonstrate higher perceived awareness of discrimination (1 = *disagree a lot*, 4 = *agree a lot*). Sample items include: “Racial discrimination limits economic opportunity in the United States” and

“There is much conflict between different racial and ethnic groups in the U.S.” No reliability or validity information for these items is reported in the literature. Internal consistency reliability for this sample was  $\alpha = .44$ .

**Personal Experiences of Discrimination.** Personal experiences of discrimination was assessed with two items (Chapman & Perreira, 2004). The first item asks participants if they had ever felt discriminated against in the U.S. An indicator variable was created for this item (0= *no*, 1 = *yes*). The second item asks “by whom,” to identify the source of the discrimination. In this item, participants are asked to “mark all that apply,” and note whether they have experienced discrimination from a teacher or school administrator, kids at school, someone they work with, someone at the doctor’s office, a police officer, their landlord, someone at a store, or some “other” person. Items marked will equal a “1” and items not marked will equal a “0”, such that higher overall scores in the 2-items used to assess experiences of discrimination will signify higher levels of discrimination experienced, and lower scores will denote lower experiences of discrimination. No reliability or validity data was found for this measure in the literature.

**Educational Outcomes.** Finally, participants self-reported their sex, age, and grade in school. Participants also indicated the highest level of education they would like to achieve, the highest level of education they thought they would actually achieve, and the types of grades they obtained in their last report card (Chapman & Perreira, 2004).

**Demographic Variables.** As part of the LAMHA data being used (Chapman & Perreira, 2004), several demographic variables were assessed, including age, gender, grade in school, and length of residence in the U.S., measured in years (see Table 1, p. 29).

## CHAPTER IV

### RESULTS

This chapter describes the study findings. I describe the results of the preliminary analyses, testing of the measurement model, and testing of the final structural model. Contents are presented in the following order: data screening and missing data, descriptive information and statistical assumptions, bivariate and spearman correlations, EFAs for the Awareness of Discrimination and Migration Stress latent constructs, test results of the hypothesized model, and results of the three separate multi-group analyses with perceived support, gender, and type of school as the grouping variables, respectively.

#### **Data Screening and Missing Data**

Table 1 (see p. 29) presents demographic information for the participants in the study. All preliminary analyses, including data screening and examination of missing data, were conducted using Predictive Analytics Software 21.0 for Windows (IBM PASW SPSS Inc., 2012). Inspection of data ranges indicated that all data were within the prescribed ranges. Missing data were examined. Between .02% and 16.3% of the data was missing for each variable. Little's missing completely at random test (MCAR) indicated that missing items were missing completely at random,  $\chi^2 (191) = 237.75, p = .01$ . To address missing data, the full information maximum likelihood (FIML) method was used to estimate variable parameters taking into account all available information (Olinsky, Chen, & Harlow, 2003).

## **Descriptive Statistics and Statistical Assumptions**

As indicated in Table 1, the majority of the participants reported high academic aspirations with 68% aspiring to achieve a post-secondary degree. Specifically, 30% of the youth indicated they would like to obtain a bachelor's degree and 38% reported wanting a graduate degree (e.g., master's, PhD, MD). In contrast, their educational expectations were lower than their aspirations. Less than half (49%) believed they could obtain a post-secondary degree. More participants believed that the highest level of education they could complete would be high school (26%), compared to how many believed they could realistically obtain a bachelor's degree (23%). With respect to their academic achievement, the majority of the immigrant youth sampled (43%) reported they obtained mostly As and Bs in their last school report card. Another 35% reported they were mostly getting Bs and Cs. In contrast, only a small percentage (2.5%) reported getting mostly Ds and Fs, suggesting this was a generally high-achieving sample.

With respect to stress encountered during their migration experience, almost 70% of participants endorsed some level of stress. Specifically, over half of the sample (51%) reported being concerned for their safety during their travels to the U.S. Approximately one out of five participants described their move to the U.S. as having been "very stressful," while another 38% describing it as being "somewhat stressful." A number of migration stressors were reported during their migration travels. For example, 5% of participants endorsed they were robbed, 12% stated they were accidentally injured, 15% reported they became sick, and four participants reported they were physically attacked. The overall migration stress level reported was not high, given a mean of 2.08 ( $SD= 1.06$ ,

range 0-8). The majority of them reported they had not experienced any discrimination in the U.S. (52%), while 43% endorsed they had.

Descriptive statistics for all variables were examined, including mean, standard deviation, and frequency distributions, to describe the sample and to examine the tenability of assumptions required for the proposed statistical analyses. The mean, standard deviation, and alpha coefficients for each variable are presented in Table 2. Alpha reliability coefficients ranged from .44 to .83 (see Table 2). The latent construct *Awareness of Discrimination* had the lowest reliability coefficient ( $\alpha = .44$ ). Given that alpha coefficients below .50 are considered unacceptable (George & Mallery, 2003; Kline, 2000), I conducted an exploratory factor analysis to explore the proposed construct. Specifically, I conducted an exploratory factory analyses on *Awareness of Discrimination* using the Principal Axis Factoring extraction method in order to examine the extraction communalities. Five of the six items within this construct had communalities were below .30, suggesting that the items did not constitute a cohesive factor (Floyd & Widaman, 1995). Consequently, it was determined that *Awareness of Discrimination* would not be included in the model.

Table 2

Means and Standard Deviations

Variable	<i>M</i>	<i>SD</i>	<i>N</i>	$\alpha^1$
1. Grades in school	4.18	0.98	265	
2. Educational Aspirations	4.03	1.21	272	
3. Educational Expectations	3.57	1.35	263	

4. Personal Exp of Discrimination	1.17	1.47	269	
5. Traveled with parent	0.39	0.49	281	
6. Concerned for safety	0.57	0.5	253	
7. Robbed during journey	0.05	0.22	277	
8. Were physically attacked	0.01	0.12	277	
9. Accidentally injured during journey	0.12	0.33	275	
10. Became sick during journey	0.15	0.36	275	
11. Degree of stress	0.91	0.75	249	
12. Anxiety Subscale	3.99	3.38	269	0.79
13. Depression Subscale	13.6	7.11	282	0.83
14. Post-Traumatic Stress Subscale	4.56	3.84	266	0.82
15. Migration Stress	2.08	1.06	236	0.55
16. Awareness of Discrimination	2.61	0.52	205	0.44
17. Familism (Support)	24.88	5.86	281	0.93
18. Teacher Support	9.55	2.12	280	0.79
19. Social Support	5.77	1.71	278	0.57

*Note.* Range for variable 1 (Grades) was 1-5. Range for variables 2 (Ed Asp) and 3 (Ed Exp) was 1-6. Range for variable 3 (Personal Exp of Discrimi) was 0-9. Range for variables 5 through 10 was 0-1. Range for variable 11 (Degree of stress) was 0-2. Range for variables 12 (Anxiety) and 12 (Depression) was 0-27. Range for variable 14 (Post-Traumatic stress) was 0-24. Range for variable 15 (Migration Stress) was 0-8. Range for variable 16 (Awareness of Dis) was 1-16. Range for variable 17 (Familism) was 1-35. Range for variable 18 (Teacher support) was 0-11. Range for variable 19 (Social Support) was 0-8.

<sup>1</sup> Alphas were not calculated for single items.

Histograms and skew and kurtosis values were examined for each variable to assess the normality assumption. The majority of study variables were found to be within the recommended limits of  $-3.0$  to  $3.0$  for skew values, and  $-10.0$  to  $+10.0$  for kurtosis values (Kline, 2005). However, values for the depression subscale within the *Psychological Distress* latent construct were not within recommended limits (*skew* =  $4.66$ ; *kurtosis* =  $28.88$ ). Additionally, a visual inspection of histograms indicated that data distributions were normal for all indicator variables except for the following three: anxiety, depression, and post-traumatic stress. The violation of normality was addressed with the recommended approach of using maximum likelihood with robust standard errors during structural equation modeling, as this method allowed for an accurate estimate of the model, despite the non-normal distribution found in some of the indicator variables (Kline, 2005; Muthén & Muthén, 1998-2012).

### **Correlations**

Correlations between variables were calculated with a Pearson product moment correlation for most variables and a spearman correlation for the count-based indicators. Correlations were found to be small to moderate ( $<.70$ ), providing evidence that multicollinearity was not a problem. The correlation matrix of study variables is presented in Table 3. As expected, higher grades in school were significantly related to higher educational aspirations and higher educational expectations. Indicator variables for the Migration Stress latent factor were correlated with indicator variables for the Educational Outcomes latent construct in the expected direction, though some coefficients were of small magnitude or non-significant. As expected, a higher degree of stress experienced during migration was significantly related to lower academic

grades. Not traveling with a parent was significantly related to being more concerned for one's safety, being attacked, becoming accidentally injured during migration, and depression. As expected, the degree of stress experienced during the migration journey was significantly related to anxiety, depression, and post-traumatic stress indicators, such that the more stressful the move was, the more anxiety, depression, and PTSD symptoms were endorsed. Also observed was the expected significant relationship between anxiety, depression, and post-traumatic stress indicators.

Unexpectedly, the majority of the indicator variables of the Psychological Distress latent construct were not significantly correlated with any of the indicators of the Educational Outcomes latent construct or with personal experiences of discrimination. The only exception was depression, which was negatively correlated with grades, such that higher levels of depression were associated with lower grades in school. Also unexpectedly, personal experiences of discrimination were not significantly correlated with grades in school, educational aspirations, or educational expectations. Personal experiences of discrimination were also not significantly correlated with any of the indicators of the Psychological Distress latent construct.

### **Model Testing**

Given that the count-based indicators of psychological symptoms (i.e., depression, anxiety, posttraumatic stress) were rather strongly positively skewed, reflecting relatively low levels of depression, anxiety and posttraumatic stress, there were two options for the data analysis. One option was to treat the variables as count-based, in which case Mplus would account for skew through the use of the Poisson distribution for count variables. The drawback to this option was that Mplus would not provide model fit

indices or standardized estimates of model paths. The other option was to consider the variables to be normal but use Robust Maximum Likelihood, which applies the Huber-White sandwich estimator (Muthén & Muthén, 2008) to adjust standard errors to account for non-normality. The advantage to this approach is that fit indices and standardized estimates are calculated and provided. Thus, this option was chosen.

The hypothesized model depicts the influence of migration stress, psychological distress, and personal experiences of discrimination on educational outcomes.

Table 3

Correlations Among Measured Variables for Whole Sample

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Grades	-													
2. EdAsp	.28**	-												
3. EdExp	.30**	.70**	-											
4. PDiscri	-.02	.11	.04	-										
5. NoParent	-.04	-.11	.19**	-.05	-									
6. SafetCon <sup>1</sup>	-.13	-.09	-.09	.01	.29**	-								
7. Robbed	-.01	-.03	-.09	-.15	.09	.17**	-							
8. Attacked	-0.02	-.06	-.02	-.20*	.15*	0.96	.39**	-						
9. Injured	.04	-.02	-.04	-.08	.14*	.15*	.27**	.14*	-					
10. Sick	-.01	-.05	.03	-.02	.11	.08	.09	.29**	.23**	-				
11. StressDeg	-.17**	-.11	-.09	.07	.06	.37**	.28**	0.1	.19**	.17**	-			
12. Anxiety <sup>1</sup>	-.10	.00	-.00	.15	.08	.09	.02	.25**	.14*	.22**	.20**	-		
13. Depressn <sup>1</sup>	-.13*	.02	-.02	-.06	.12**	-.02	.04	-.00	.16**	.18**	.21**	.66**	-	
14. PTSD <sup>1</sup>	-.06	.03	-.00	.11	.03	.08	.05	.13*	.05	.17**	.26**	.70**	.67**	-

Note: EdAsp = educational aspirations; EdExp = educational expectations; PDiscri = personal experiences of discrimination; NoParent = did not travel with parent; SafetyCon = concerned for safety; Robbed = robbed during journey; Attacked = attacked during journey; Injured = accidentally injured; Sick = became sick; StressDeg = degree of stress experienced; Anxiety = Anxiety Subscale; Depressn = Depression Subscale; PTSD = PTSD subscale. Variables 5 through 11 are the individual items that make up the latent variable of “Migration Stress.” Items marked with a superscript “<sup>1</sup>” (i.e., SafetyCon, Anxiety, Depression, and PTSD) denote the use of Spearman’s correlations reported, which were calculated to account for the rank-order, count-based data. All other correlations presented above are Pearson Product Moment correlations.

\* $p < .05$ , \*\* $p < .01$  (2-tailed)

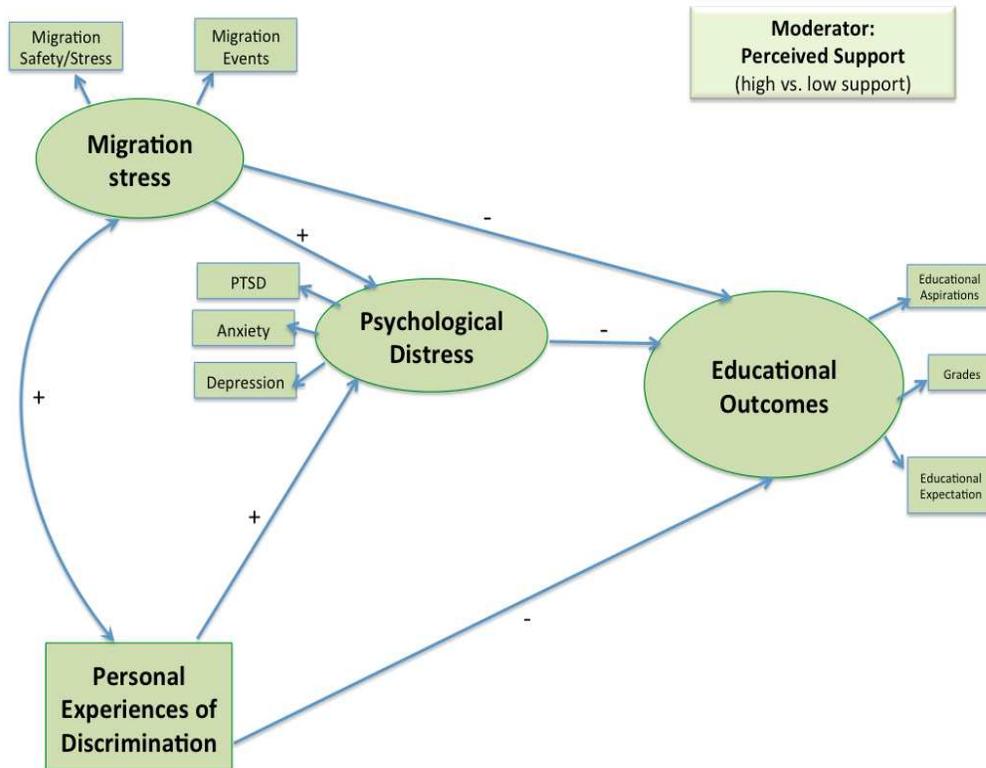
Specifically, migration stress, psychological distress, and personal experiences of discrimination adversely affect educational outcomes. It was also hypothesized that migration stress would be positively related to psychological distress, and that psychological stress would mediate the relationship between migration stress and educational outcomes. Finally, moderation effects were hypothesized for perceived support, such that the relationship between migration stress and educational outcomes would differ for participants with high versus low perceived support.

**Measurement Model.** The theoretical model summarized in Figure 2 was tested with Mplus 7.0 software (Muthen & Muthen, 1998-2012), using structural equation modeling. A maximum likelihood estimator with robust methods (MLR) was used in order to adjust standard errors to account for non-normality (Muthen & Muthen, 2008-2012). Specifically, this approach was needed to adjust for the non-normality of the count-based indicators of psychological symptoms (i.e., Anxiety, Depression, and PTSD), which were positively skewed.

First, a series of confirmatory factor analyses (CFA's) were used to evaluate the measurement model by exploring the fit of the indicators to their proposed latent constructs. Kline (2011) suggested examining goodness of fit using the following fit indices: Comparative Fit Index (CFI), Tucker Lewis Index (TLI), the root mean square error of approximation (RMSEA), and chi-square. Good model fit was determined by examining a combination of indices such as a non-significant  $\chi^2$ , CFI values greater than or equal to .95, TLI values greater than .90, and RMSEA of .06 or less. Specifically, CFI values above .95 were considered to be indicative of very good model fit, whereas CFI values of .90 to < .95 represented adequate fit (Hu & Bentler, 1999). With respect to

RMSEA, values less than .06 were considered good fit (Kline, 2011) and values less than .05 represented a very close fit (Hu & Bentler, 1999).

Figure 2. Theoretical Model Tested



The hypothesized model is presented in Figure 2. The exogenous variable was the Migration Stress latent factor. The endogenous variables were the Psychological Distress and the Educational Outcomes latent constructs. The confirmatory factor analyses took place in steps. At each step, fit indices and indicator loadings were examined. First, a confirmatory factor analysis was conducted for the *Educational Outcomes* latent construct. Factor loadings were all above the recommended .30. Specifically, the CFA produced loadings of .35 (grades), .83 (ed aspirations), and .85 (ed expectations). Next, a CFA for

the *Psychological Distress* latent construct was conducted. Loadings observed were .90 (anxiety), .87 (PTSD), and .87 (depression). Lastly, for the latent construct *Migration Stress*, factor loadings were .59 (migration safety/stress) and .56 (migration events). All factor loadings for all latent constructs were above .35 (see Table 4) and were also all significant at the  $p < .001$ . The CFA analyses indicated that no modifications needed to be made to any of the latent constructs.

After CFAs were conducted, the measurement model was tested and the relationship between the latent constructs was explored. Fit indices suggested very good model fit (see Table 4). Specifically, the CFI (.99), TLI (.98), and RMSEA (.04) all suggested good model fit, and the chi-square statistic value was not significant  $\chi^2 (17) = 25.70, p = .08$ .

Table 4

CFA Loading Estimates for Each Individual Latent Construct and Correlations Observed within the Measurement Model

	CFA		
	Loading	S.E.	<i>p</i>
	Estimate		
<b>Educational Outcomes <b>BY</b></b>			
Grades	0.35	0.07	.00**
Educational Aspirations	0.83	0.07	.00**
Educational Expectations	0.85	0.07	.00**
<b>Psych Distress <b>BY</b></b>			
Anxiety	0.90	0.03	.00**
Depression	0.87	0.03	.00**

PTSD	0.87	0.03	.00**
<b>Migration Stress BY</b>			
Migration Safety/Stress	0.60	0.10	.00**
Migration Events	0.56	0.10	.00**

---

$\chi^2 (17) = 25.70, p = .08, CFI = .99, TLI = .98, RMSEA = .04$

**Structural Model.** Next, the relationship among the model’s latent constructs and observed variables was explored by testing the structural model. The structural model showed very good fit,  $\chi^2 (22) = 32.34, p = .07$ . Goodness of fit indices demonstrated good fit (CFI = .99; TLI = .98; RMSEA = .04). Two paths were significant in the structural model. Table 5 provides parameter estimates (standardized and unstandardized) and *p*-values for the model. As expected, the Migration Stress latent construct significantly predicted the Psychological Distress latent construct ( $\beta = .36$ ) and the Educational Outcomes latent construct ( $\beta = -.23$ ) at the  $p < .001$  level. Specifically, migration stress positively predicted psychological distress and negatively predicted educational outcomes.

Figure 3 presents the final structural model. Contrary to expectations, the following paths were not significant: (1) the Migration Stress latent factor did not predict Experiences of Discrimination ( $\beta = .11, ns$ ); (2) the Psychological Distress latent factor did not predict Experiences of Discrimination ( $\beta = .15, ns$ ) or (3) the Educational Outcomes latent factor ( $\beta = .15, ns$ ). Additionally, the path from Experiences of Discrimination did not predict Educational Outcomes ( $\beta = .07, ns$ ). Thus, there were no significant indirect effects (i.e., mediation effects) in this model.

Figure 3. The Final Structural Model

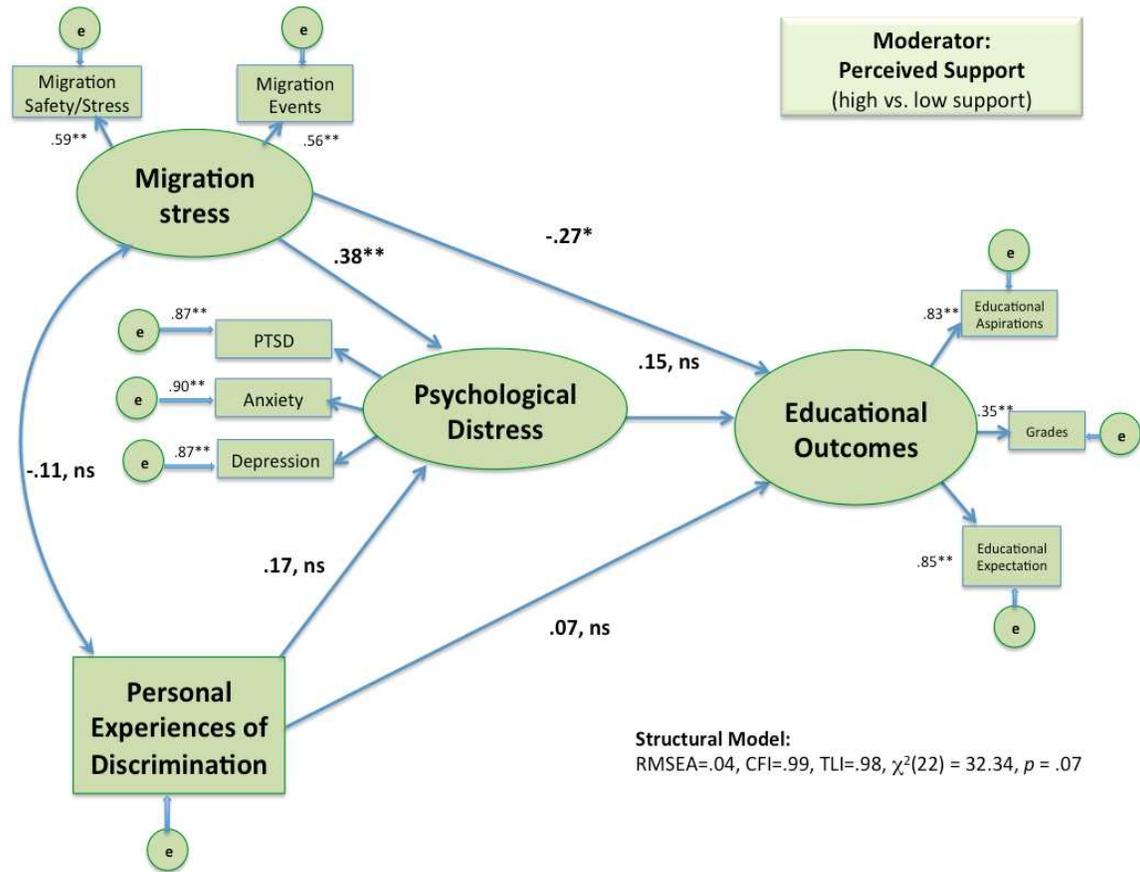


Table 5.

Observed Relationships between Migration Stress, Psychological Distress, Personal Experiences of Discrimination, and Migration Stress within the Structural Model

	Estimate	S.E.	<i>p</i>
Psych Distress <b>ON</b> Migration Stress	.38	0.09	0.00**
Education Outcomes <b>ON</b> Psych Distress	.15	0.09	0.08
Education Outcomes <b>ON</b> Migration Stress	-.27	0.13	0.03*
Psych Distress <b>ON</b> Personal Exp of Discrimination	.17	0.09	0.07

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Educational Outcome <b>ON</b> Personal Exp of			
Discrimination	.07	0.10	0.51
Personal Exp of Discrimination <b>WITH</b> Migration			
Stress	-.11	0.15	.46

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$\chi^2(22) = 32.34, p = .07, CFI = .99, TLI = .98, RMSEA = .04$

### **Moderation Testing for Perceived Support**

A multiple group analysis was conducted to test for moderation effects across perceived support. The moderating analysis of perceived support required samples to be split before proceeding to actual analysis. Sample splitting is achieved by splitting the median to separate the data set (Durvasula, Craig, Lysonski, & Netemeyer, 1993). The goal of multi-group analysis was to obtain two data sets; one consisting of participants reporting higher support and one consisting of those reporting lower support. In preparing for the analyses of social support as a moderator, it became evident that it would be inappropriate to apply median splitting to all of the measures of support. While the measures of familism, teacher support, and social support all allowed for median splitting in preparation for multi-group analysis, family support did not. The family support measure, FACES II, was found to be inappropriate for moderation testing due its non-linear distribution. Extremely low scores represented rigid or disengaged family patterns, while extremely high scores represented enmeshed or chaotic rather than highly supportive family patterns. Thus, this measure of support was excluded from the measures of support used to determine higher vs. lower support groups of participants. Only the scores obtained from the familism, teacher, and social support scales were used to derive the higher and lower support groups.

As an initial step, items that contributed to the measurement of perceived support were combined to form an aggregate score. Scores on the familism, teacher support, and social support scales were added up to form the total perceived support score. The range of this aggregate score 11-49. The median was 42 ( $M = 40.24$ ,  $SD = 7.32$ ). Using the median value obtained for perceived support, two groups were then created and used for multi-group analysis in Mplus. First, the group with values above the median made up the “higher” perceived support group ( $n = 127$ ). Then, the group with values below the median made up the “lower” perceived support group ( $n = 150$ ).

Next, I performed a multiple group analysis to test for moderation effects across higher and lower levels of perceived support. This analysis compared two models. First, it compared a model in which the parameters were allowed to vary across higher and lower levels of perceived support. Then, it compared one in which the parameter values were constrained to be equal between the two groups (Byrne, 2001; Bollen, 1989; Kline, 1998; Muthen & Muthen, 2008). When conducting moderation analyses, a statistically significant chi-square value suggests that the parameter estimates vary across groups. The chi-square difference test indicated there were no statistically significant differences in the path coefficients between higher and lower levels of perceived support. That is, results indicated the structural model did not vary as a function of perceived support ( $\chi^2(6) = 3.92$ , ns).

### **Post Hoc Analyses**

Post hoc multiple group analyses were conducted to test for moderation effects for gender and type of school attended (i.e., middle school vs. high school). First, with respect to gender, findings from studies on Latino youth have noted gender variations

with respect to educational aspirations and academic achievement (Colón & Sánchez, 2010; Blair & Cobas, 2006; Kao & Tienda, 1998). The purpose of the post hoc analysis was to see if gender variations were also observed in an all foreign-born Latino immigrant sample. For the multiple group analysis of gender differences, participants were grouped by gender with males being in one group (n=126) and females being in a second group (n=152). The chi-square difference test indicated there were no statistically significant differences between males and females. That is, the structural model did not vary as a function gender ( $\chi^2 (6) = 10.95$ , ns).

It also felt important to explore descriptive information regarding any possible differences that might be observed among middle school youth versus high school adolescents. Research on immigrant youth suggests that younger children may adjust more easily, compared to older adolescents, who might experience more complicated issues within the school setting (Zagelbaum, 2011). Academic achievement might also be lower in high school since that is when immigrant youth might develop greater awareness of the challenges that being an immigrant might pose in their educational goals (Perez et al., 2009). To further explore the possible moderating impact that being in middle school versus high school might have on the educational outcomes of the participants in this study, a second post hoc multiple group analysis was conducted to test for model moderation effects level of school (i.e., middle school vs. high school). The chi-square difference test indicated that the model did not vary as a function of school level ( $\chi^2 (6) = 4.71$ , ns).

## CHAPTER V

### DISCUSSION

This study aimed to contribute to the literature on educational outcomes and risk and protective factors in the lives of foreign-born, Latino immigrant youth with a special emphasis on how these were related to their migration experiences. The relationships between migration stress, psychological distress, experiences of discrimination, and awareness of discrimination were explored in relation to educational outcomes in a sample of 281 Latino immigrant youth. These relationships were then examined to see if they differed as a function of perceived support, gender, and school type (i.e., middle school versus high school).

This chapter discusses the findings of the study, research and clinical implications, and study limitations and strengths. First, I describe the findings related to the measurement and structural models tested. Next, I discuss the role of perceived support, gender, and level of school in the study results. Finally, I review the limitations and strengths of the study, and offer suggestions for future research.

Based on prior research, I expected to find significant relationships between experiences of discrimination, psychological distress, migration stress, and educational outcomes, and that psychological distress and awareness of discrimination would have mediating roles in the model. Additionally, I hypothesized that these relationships would differ for immigrant youth depending on the levels of support they perceived.

#### **Major Findings in the Final Model**

The final model reflected minor changes to the original hypothesized model. Specifically, *Awareness of Discrimination* was removed as a latent construct from the

model due to poor inter-item reliability and lack of a clear unifactorial factor structure. The revised hypothesized structural model was found to be a good fit for the data. This model examined the relationships between the latent factors of *Migration Stress*, *Psychological Distress*, and *Personal Experiences of Discrimination* and educational outcomes (the outcome variable). Educational outcomes consisted of academic grades earned, educational aspirations, and educational expectations. After an overview of the major findings, each set of relationships is discussed in the context of current literature.

**Migration Stress and Educational Outcomes.** As expected, migration stress significantly predicted educational outcomes. Participants who endorsed experiencing more stressors related to their migration experience (e.g., those who reported being concerned for their safety, becoming sick, accidentally injured, or having been attacked or robbed during their journey) were more likely to report lower academic grades and endorse lower educational aspirations and expectations. In contrast, participants who felt less concern and stress associated with their migration into the United States reported more positive educational outcomes. These students were more likely to report having higher educational aspirations, higher educational expectations, and also more likely to report higher grades in school. To my knowledge, no previous studies had explored the extent to which migration stress predicts educational outcomes. However, given the traumatic component that the act of migrating can have (Desjarlais et al., 1995; Perez Foster, 2001), the findings observed between migration stress and educational outcomes seemed consistent with other studies that document a significant relationship between trauma and school achievement (Goodman, Miller, & West-Olatunji, 2011; National Child Traumatic Stress Network, 2008).

**Migration Stress and Psychological Distress.** As expected, there was a significant positive relationship between migration stress and psychological distress. Specifically, migration stress predicted higher psychological distress levels as measured by symptoms of anxiety, depression, and posttraumatic stress. These findings are consistent with existing research about a positive relationship between migration stress and mental health (Ornelas & Perreira, 2011; Perez Foster, 2001; Thronson, 2010; Vega et al., 1987). To my knowledge, no other study has explored anxiety, depression, and posttraumatic stress together as a latent construct within the context of a structural equation model. At the same time, previous studies do support a relationship between migration stress and depressive symptoms in Latino adult immigrants (Ornelas & Perreira, 2011) and higher reports of both anxiety and depression associated with higher migration stressors for Latino immigrant youth (Potochnick & Perrerrira, 2010).

**Psychological Distress and Educational Outcomes.** Despite prior evidence that psychological distress would predict educational outcomes (Fletcher, 2008; McLeod & Kaiser, 2004; Needham et al., 2004), my findings did not support this hypothesis. While there was a significant negative relationship between migration stress and educational outcomes and a significant positive relationship between migration stress and psychological distress, psychological distress was not significantly correlated with educational outcomes. These findings did not support the study hypothesis and were inconsistent with the literature, as psychological distress typically is negatively correlated with and predictive of educational outcomes (McLeod & Kaiser, 2004; Needham et al., 2004).

Although the relationship between migration stress and educational outcomes was consistent with my hypotheses, it was especially notable in light of the lack of significance between psychological distress and educational outcomes. One explanation for this might be that the psychological distress experienced by this sample was not of sufficient magnitude to have an impact on educational outcomes. Scores on measures of anxiety, depression, and posttraumatic stress were all positively skewed, indicating that participants reported low levels of each condition. A great majority of the participants scored low on anxiety, posttraumatic stress, and depression. That is, the majority of the sample did not endorse clinically significant levels of any symptom that would have been indicative of psychological distress.

**Personal Experiences with Discrimination.** Surprisingly, none of the study variables were related to personal experiences with discrimination. This was unexpected given that several studies have provided substantial evidence of a link between personal experiences with discrimination and psychological distress (Brown et al., 2000; Torres et al., 2011; Williams et al., 2003) and educational outcomes (Alfaro et al., 2009; Benner & Graham, 2011). Many researchers have found that discrimination has a significant and negative influence on mental health (Brown et al., 2000; Torres et al., 2011) and that perceived discrimination is associated with higher levels of stress (Pascoe & Smart Richman, 2009; APA Presidential Task Force on Immigration, 2012), depression, distress, and anxiety (Brown et al., 2000; Williams et al., 2003). Previous research has also found strong evidence for a link between perceived or experienced discrimination and academic performance (Alfaro et al., 2009; Benner & Graham, 2011). For example, higher levels of experiences of discrimination were associated with lower grades and a

lower likelihood that the youth would stay in school in a sample of Latino youth (Martínez et al., 2004). It was also hypothesized that personal experiences of discrimination would be positively related to migration stress, but this was also not supported. Instead, a negative relationship between the two was observed whereby higher levels of migration stress were associated with fewer personal experiences of discrimination.

One possible explanation for the lack of relationships associated with this variable could be the way it was measured. In this study, personal experiences of discrimination was measured with a two-part question that asked people if (1) they had ever felt discriminated against, and (2) if they had, by whom. In contrast, other studies that have included measures of discrimination in their research have tended to use established scales with multiple items and strong psychometric properties. For example, Alfaro and colleagues utilized a 10-item scale, the Perceived Discrimination Scale, with established psychometric properties demonstrating Cronbach's alpha of .90 (2009). It is possible that the two-part item was not a valid way of accurately assessing for personal experiences of discrimination.

Participants in the present sample reported similar levels of perceived discrimination, suggesting little variation. More than half of the sample (55%) reported no experiences of discrimination. Among those who did endorse personal experiences of discrimination, little variability was observed, with the majority of the participants indicating few instances of discrimination experienced. This limited variability might also help explain why the personal experiences of discrimination were not significantly correlated with either psychological distress or educational outcomes. It is also worth

noting that the field notes from the LAMHA research team, who collected the data, indicated that some of the youth had difficulty understanding the term “discrimination” and that they needed more clarity on what was meant by “racial and ethnic groups.” It is possible that the lack of clarity about these terms also account for the low levels of discrimination that were reported.

Another possible explanation for the lack of significant findings might be related to acculturation and amount of exposure to discrimination. Research suggests that generational status plays an influential role in academic achievement, leaving the second and third generation more susceptible to discrimination compared to their foreign-born peers (Valenzuela, 1999). A good deal of evidence suggests an immigrant advantage, often referred to as the “immigrant paradox,” whereby immigrants outperform their U.S.-born peers (APA Presidential Task Force on Immigration, 2012). The lack of a significant path between personal experiences of discrimination and educational outcomes might be related to a generational status advantage of the foreign-born youth that constitute this sample. It is also worth noting that much of the research that focuses on the relationship between discrimination and educational outcomes has been conducted with samples of U.S. natives (Benner & Graham, 2011; Eccles et al., 2006; Lee & Ahn, 2012).

**Perceived Support.** It was expected that the relationship between the *Migration Stress, Psychological Distress, and Personal Experiences of Discrimination* latent factors and educational outcomes (the outcome variable) would differ for participants based on levels of perceived support. Specifically, I expected that perceived support would act as a moderator, such that participants with higher levels of support from families, teachers,

and social support in general would have weaker paths between the following: (1) migration stress and educational outcomes, (2) migration stress and psychological distress, (3) psychological distress and educational outcomes, and (4) personal experiences of discrimination and educational outcomes. That is, my hypothesis was that the impact of migration stress on educational outcomes and psychological distress would be lower for people who perceived more support. No perceived support group differences were found for the structural model. That is, the strength of the relationships between the variables tested was not weaker among students who endorsed higher levels of perceived support compared to those who endorsed lower levels of perceived support. This was surprising given that support from parents, teachers, and support in general are often described as protective factors with respect to psychological distress (Katsiaficas et al., 2013; Ko & Ferreira, 2010; Potochnick et al., 2012; Umaña-Taylor & Alfaró, 2009) and are positively correlated with academic achievement (Alfaró et al., 2006; Altschul, 2011; Suarez-Orozco et al., 2009; Plunkett et al., 2008).

One possibility for the lack of moderating effects is that perhaps social support does not have the same moderating effects with foreign-born youth. For instance, in one previous study exploring the relationship between discrimination and depression among a diverse group of minority students, social support did not moderate the relationship between symptoms of depression and perceived discrimination (Tummala-Narra & Claudius, 2013). Instead, nativity status moderated the relationship between the two. Although Latinos made up a small percentage of that sample, the findings seem to suggest that there is less of a relationship between perceived discrimination and symptoms of depression endorsed among minority students who are foreign-born

(Tummala-Narra & Claudius, 2013). Similarly, in a study exploring the relationships between perceived discrimination, acute stress, and the moderating role of social support among African American women, social support did not moderate levels of discrimination on acute stress. Instead, the authors argued that social support played more of a coping function than a “leverage” function in the lives of minorities (Ajrouch, Reisine, Lim, Sohn, & Ismail, 2010).

Additionally, in a recent study exploring internalizing symptoms and perceived support in a sample of ethnically and racially diverse first and second generation youth, perceived support played a mediating role in symptoms of anxiety and depression, but generation status was the factor that moderated the relationship between perceptions of support and symptoms of depression and anxiety (Katsiaficas et al., 2013). Interestingly enough, in that particular study, perceived support played a more critical role for immigrants than for U.S.-born youth (Katsiaficas et al., 2013). Given that 100% of the participants in this sample were foreign-born, it had been hypothesized that similar findings would be observed in this this particular study. Despite the lack of moderation effects found, the literature supports the idea that Latino immigrant youth rely on support systems to overcome the challenges of migration (Potochnick & Perrerrira, 2010). Another possible explanation for the lack of moderating effects observed in this study might relate to the measures used to assess perceived support. It is possible that measurement issues influenced the unexpected outcome. This possibility is further explored in the limitations section.

It is also important to acknowledge that the sample used in this study reported relatively high levels of support, and was high-functioning with respect to their

academics and psychological well-being. The majority of the immigrant youth self-reported they obtained mostly As and Bs in school. Also, the overall low levels of migration stress reported and the non-clinically significant symptoms of anxiety, depression, and post-traumatic stress endorsed suggest they were also high-functioning with respect to their overall mental health well being. In these ways, they were different from other Latino youth represented in the literature, who tend to have higher variability in terms of their academic achievement and psychological well-being.

Finally, post-hoc analyses were conducted to see if any gender or school group differences (i.e., middle school versus high school) existed. Findings revealed that when the relations between migration stress, psychological distress, personal experiences of discrimination, and educational outcomes were explored as a function of gender or school level, no group differences were found between males and females or between middle school and high school students. This was surprising given findings from other studies of Latino youth, in which gender has been identified as having a moderating effect on academic achievement (Blair & Cobas, 2006; Colón & Sánchez, 2010; Fin & Ishak, 2012; Kao & Tienda, 1998).

### **Implications for Practice**

Taken together, the findings of this study have several implications for clinical practice with Latino immigrant populations. The migration experience itself can act as a catalyst for the development of psychological distress (APA Presidential Task Force on Immigration, 2012) and this study suggests that migration stress predicts educational outcomes. Attending to migration stress may help reduce psychological distress associated with anxiety, depression, and post-traumatic stress, and may also reduce the

adverse effects of migration stress on education outcomes. First, it is recommended that practitioners who work with immigrant youth consider not just their clients' nativity status, but also the migration experiences that their foreign-born clients experienced. Specifically, it is recommended that clinicians assess for any safety concerns and/or stressors experienced during migration when working with immigrant populations, as these might have long-lasting effects. Additionally, in line with the Stages of Migration framework (Sluzki, 1979), therapists should also consider pre-migration and post-migration experiences, as experiences of traumatic events are not limited to the actual crossing the border experience (Desjarlais et al., 1995; Ko & Perreira, 2010; Suzuki, 1979). Eliciting information about migration experiences may be done by utilizing narrative approaches and incorporating *cuentos* (stories) therapy, as these allow clients to tell their story (Zagelbaum, 2011). Narrative approaches and *cuentos* therapies are offered as possible models, as these are frequently used when working with immigrant families (Falicov, 2007; Zagelbaum, 2011). Therapists may also consider incorporating psycho-educational interventions covering the impact of trauma and the challenges associated with transitions/adjusting to a new environment. Additionally, when working with Latino immigrant families, clinicians should aim to involve parents and other family members in whatever work they engage in with the immigrant youth, as including family can demonstrate cultural competence and awareness of the values Latinos have for *familismo* and *respeto* (Dingfelder, 2005; Santiago-Rivera et al., 2001; Zagelbaum & Carlson, 2011).

Ideally, clinicians should also have some awareness of the percentage of immigrants within their communities and also be familiar with some of the most common

methods they use “transportation” during their migration to the U.S. Having an awareness of whether immigrants in the community arrive to the U.S. via planes or by foot while crossing the border could give insight as to the level of stress they might have experienced during migration (Sluzki, 1979; Zuniga, 2002), including how unsafe it might have been.

Secondly, because immigrants are less likely to utilize traditional mental health services (APA Presidential Task Force on Immigration, 2012), school interventions aimed to attend to migration stress may be especially helpful when working with immigrant youth. School districts located in dense immigrant communities might consider setting up special tutoring services to provide additional support to students who might be having trouble concentrating in school due to stressors associated with having recently migrated to the U.S.

Also, while it is important to avoid making assumptions about anyone’s legal status, school personnel should acknowledge a possible lack of legal status for the children or for a family member, especially in communities with a high percentage of immigrant settlement. The literature suggests that both undocumented immigrants and U.S.-born children of adult undocumented immigrants are susceptible to experiencing psychological distress if there are members within their families who are undocumented (Chaudry et al., 2010; Potochnick & Perreira, 2010). It is recommended that teachers and other school staff participate in special trainings that help them understand some of the unique stressors that immigrants face. These specialized trainings could help increase cultural sensitivity when working with immigrant populations (Rhodes, 2005).

In addition to educating teachers and school administrators and promoting the development of interventions within schools, it is recommended that professionals also help design services within their communities in order to attend to the possible migration stress that may be experienced by their community residents. For example, support may be provided to the families of immigrant youth in the form of outreach programming in the community. This type of outreach could include psycho-educational information about the legal rights of immigrants, community resources, as well as information about the school system in the U.S. and possible challenges their children might experience (e.g., financial challenges in their pursuit of higher education). Community outreach efforts can also help parents unfamiliar with the U.S. educational system identify ways of further supporting their children throughout their educational trajectories.

At the same time, professionals should recognize that depending on the state, certain laws might significantly reduce the likelihood that families will seek services for themselves and their traumatized children out of fear that this might jeopardize their families. There might also be financial barriers, language barriers, and transportation barriers that impact access to mental health services (APA Presidential Task Force on Immigration, 2012; Wallace, Torres, Sadegh-Nobari, Pourat, & Brown, 2012). Given the influence that the context can have on how safe families feel accessing services, efforts should be made to offer outreach interventions in settings in which Latino immigrants might feel more safe. For example, workshops and other outreach events may be organized at the local church, in collaboration with the church clergy and other community members, as a way of making immigrant families feel a little safer.

## **Implications for Research**

Longitudinal studies are strongly recommended for understanding not just long-term effects of migration stress, but also for understanding sources of support and other protective factors at different ages. Although no moderation effects were observed for perceived levels of support, it is possible that as immigrant Latino youth continue to grow, different support systems might play different protective roles. For example, immigrant youth might rely most on parental and other family support during elementary and middle school, and perhaps rely more on teacher support as they enter high school. Thus, incorporating measures of parental and teacher support in longitudinal studies is recommended to better understand the roles that different groups play as youth get older.

In addition to further exploring support systems, it is recommended that future research also consider the ways in which parental *involvement* might look differently among Latino immigrant populations. Parental involvement is a broad construct used to assess parenting behaviors; these can range from school-based and home-based involvement (Altschul, 2011; Pomerantz, Moorman, & Litwack, 2007). In a study of 1,609 Mexican-American youth, parental involvement in the home was associated with higher academic outcomes, as measured by scores on standardized tests in reading, math, science, and history (Altschul, 2011). Parental involvement in the home was measured as engaging in activities together and discussing school related matters (Altschul, 2011). Future researchers should keep in mind that not all forms of parental involvement are the same and that different parents have different experiences when interacting with their children's schools (Olivos & Ochoa, 2006; Olivos, Ochoa, & Jiménez-Castellanos, 2011). For instance, language, financial, and other cultural barriers between parents and

teachers can impact parental involvement at school (Reese, 2002). Consequently, it would be important to further explore the not just the role that parental involvement plays among immigrant youth, but also how this type of involvement might be different for families who are undocumented.

Additionally, although personal experiences of discrimination were not significantly predictive of either psychological distress or educational outcomes within this sample, it would be interesting to see how the effects of experiences of discrimination change over time. It is possible that as immigrant youth get older, they might become just as susceptible to the effects of discrimination as their second/third-generation peers.

It is also recommended that researchers explore not just the immigrant youth's possible undocumented status, but also explore how documentation status changes on an individual and family level over time. For example, it would be helpful to know how psychological distress and educational outcomes change over time as youth obtain legal residency or citizenship status in the U.S. It would also be important to explore how educational outcomes and psychological distress vary among youth who are documented, but whose parents are undocumented. Since fear of family separation can take a toll on immigrant's psychological well-being (Chaudry et al., 2010), future research should take into consideration post-migrations stressors such as fear of family separation and deportation when not all family members have an authorized status in the U.S. Researchers are encouraged to consider the impact that legal status changes over time can have on psychological distress and educational outcomes. It is also recommended that researchers take into account participants' socioeconomic status, as this can offer

additional insight with respect to addition pre-migration and post-migration stressors that might be a part of their lived experiences.

Finally, because of the limited number of measures developed that are both culturally appropriate and have good internal consistency when administered with foreign-born youth, existing measures should be translated, back-translated, and further assessed with respect to their validity and reliability. While many measures have been normed on minority samples that included Latinos, it is important to also consider their validity and reliability with Spanish-speaking immigrant populations. In addition to translating measures, there is a need for developing more measures that can be used when conducting research with Spanish-speaking immigrant populations. It is recommended that bilingual and bicultural researchers be consulted with, if not directly involved in efforts to develop better measures. Another recommendation is that future studies approach research with immigrant samples from a participatory action research focus. This would allow for the development of more trusting relationships between immigrant youth and researchers, as well as foster supportive outreach efforts within the communities in which the research is being conducted (Gildersleeve, 2011; van der Velde, Williamson, & Ogilvie, 2009).

### **Limitations**

Limitations to the current study must be considered when interpreting the study findings. First, the data used to assess model fit relied only on cross-sectional, youth self-report methodologies. The youth in this study self-reported not just their current grades in school, but also retrospectively reported their migration experiences that took place when they were younger. Over 70% of the participants migrated before the age of 12, with

close to one in five indicating that they moved to the U.S. before the age of 6. It is worth noting that perhaps aspects of their migration experience might have been difficult to recollect due to how young they were when they moved to the U.S. Additionally, because the majority of the sample moved during their childhood, it is possible that rather than responding to items asking about their migration experience based on what they personally remembered or experienced, some of what they endorsed might have been based on what they recalled or heard their family share about their migration story. The family story of crossing may be as influential as actual memories. By relying solely on the reports of the immigrant youth, this study suffered from mono-method bias. Subsequent studies can build upon these findings by including additional raters. For example, it would be helpful to obtain additional reports regarding the migration experience from other adults or people who might have accompanied the participating youth in their migration journey. Additionally, having school records of their academic grades would have enriched the way the *Educational Outcomes* latent construct was measured.

Another limitation to the study relates to the measures that were used. As mentioned earlier, it is unknown whether translation back-translation procedures were utilized for the existing measures when administering the questionnaires to the participants. It is also unknown the percentage of participants who were administered the measures in English versus Spanish. Thus, the translation of measures might have compromised the face and content validity and thus, the ability to fully see the role that perceived support might have had in moderating the relationship between the variables. The lack of translation back-translation procedures and the possible lack of evaluation of

the measures with immigrant populations might have also compromised the internal consistency reliability of the social support measure. While this measure had been found to have an internal consistency reliability of .81 when used with ethnically diverse samples, it had an internal consistency reliability of .57 with this sample. Information from published work about whether these measures were previously evaluated with new immigrant populations was not available. Thus, it is possible that the psychometric validity of the measures might not have been as strong when used with immigrant populations. Additionally, some of the measures used in these analyses (e.g., questions used to assess migrations stress, awareness of discrimination, and personal experiences of discrimination) came from measures that had never been used before and, consequently, there were no previously established psychometric properties for them. It would have been more appropriate to use well-known, valid measures with psychometric properties demonstrating high internal consistency when used with immigrant populations. To my knowledge, measures such as those have not yet been developed.

Another limitation was the way in which *Migration Stress* was measured. A better measurement of migration stress would have also included information about the transportation methods that were used to migrate to the U.S. Future studies should take into consideration the methods that the youth used to migrate. For example, migration stress would be considerably different for someone who entered the U.S. with a valid visa, compared to how it would be experienced for someone else who entered the country without any sort of documentation. Levels of migration stress would likely also differ for a 10-year-old child pretending to be someone else while using that other person's American passport, compared to how they would be for a toddler who is using someone

else's passport and is less aware of potential stressors. Collecting information on the method of transportation used could shed light on the migration experience and add valuable information to the level of stress that might have been experienced. For example, migrating to the U.S. by crossing the border on foot might be experienced differently than coming into the country by car or plane (Sluzki, 1979; Zuniga, 2002).

The latent construct of *Migration Stress* would have also been measured more appropriately if it had included information about each participant's legal status. While asking about someone's legal status could raise safety concerns for participants, the ability to measure whether someone came into the U.S. with or without legal authorization would provide additional rich insight with respect to how stressful someone's migration experience was (Sullivan & Rehm, 2005; Vega, Kolody, & Valle, 1987). Research focusing on undocumented immigrants suggests they are more likely to experience traumatic events during their migration journeys (Sullivan & Rehm, 2005). Specifically, immigrants who report migrating without documentation describe dangerous border crossing experiences (McGuire & Georges, 2003; Vega et al., 1987). Some experience physical dangers such as rape, deprivation, and death (Vega, Hough, & Miranda, 1985).

Finally, we did not have access to other important factors such as acculturation and social class in the present study. Although the entire sample was foreign-born, acculturation levels might have varied, depending on the number of years the youth had lived in the U.S. or depending on their age at migration. Future research should aim to also include these variables in their research questions as they can help shed light on possible patterns related to years living in the U.S.

## **Strengths**

This study used data from the Latino Adolescent Migration, Health, and Adaptation Project (LAMHA), which utilized stratified random sampling of immigrant youth. One of the greatest strengths was its use of data collected from Latino immigrant youth. Whereas much of the research conducted on immigrants has targeted adult samples, this study explored educational outcomes and the impact of migration stress on psychological distress among a less commonly studied sample. By focusing on Latino immigrant youth, this study has contributed to the research on immigration and the experiences of immigrants. The use of stratified random sampling was strength because it allowed for diversity with respect to age and different communities in the sample. That is, by using stratified random sampling, this study was able to include both younger adolescents, who were in middle school, and older adolescents, who were in high school. Also, rather than surveying Latino immigrants in one specific neighborhood, it expanded the pool to include immigrant youth who had settled in different cities.

Additionally, while some research existed on the relationship between migration stress and mental health (Potochnick & Perreira, 2010; Ornelas & Perreira, 2011), this study contributed to that research by adding a focus on educational outcomes as the outcome variable of interest. Given the low educational attainment levels among Latinos in the U.S. and the large number of Latino immigrants in the U.S. (Fry & López, 2012; U.S. Census Bureau, 2012b) it was important to study the construct of educational outcomes by highlighting a group that is often overlooked in the literature. In the past, when studies have explored educational attainment levels among Latinos, those research

studies have tended to use convenient samples of the second/third generation. In contrast, this study offered a unique contribution by focusing solely on foreign-born youth.

## **Conclusion**

In summary, these results suggest that migration stress has a significant direct effect on psychological distress and on educational outcomes among Latino immigrant youth. Participants reporting high migration stress reported greater psychological distress and had poorer educational outcomes with respect to academic grades, educational aspirations, and educational expectations. This study contributed to the larger existing body of literature on the experiences of immigrants, extending the focus to immigrant youth. Additionally, it provided further support to the existing literature that suggests that migration stressors can impact future mental health and well-being. The youth who participated in this study tended to be high-achieving, high-functioning individuals, with respect to their academic achievement and psychological well-being, giving insight about the experiences of high-achieving Latino immigrant youth. In efforts to continue to explore the experiences of the Latino immigrant youth population, future research should attend to how their post-migration experiences also impact educational outcomes and their overall health. Future research with immigrants should give special consideration to how experiences might differ based on legal status.

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