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INFLUENCE OF CULTURAL STRENGTHS ON THE RELATIONSHIPS AMONG ACCULTURATIVE STRESS, RACISM, AND MENTAL AND PHYSICAL HEALTH IN LATINO IMMIGRANTS

A thesis defense submitted in fulfillment of the requirements for the degree of Master of Science at Virginia Commonwealth University

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Abstract

The Latino immigrant population in the United States has grown rapidly, now standing at over 56 million people. Due to this increase in Latino immigrants, investigation of their mental and physical health is crucial in addressing possible health disparities. Previous Latino immigrant health studies have focused solely on physical health or mental health or on one dimension of health care, such as health insurance coverage. Few studies have investigated conjointly both physical and mental health in Latino immigrant adults. Daily discrimination and acculturative stress have been found to affect the mental and physical health of Latino immigrants. However little is known about the impact of discrimination and acculturative stress on both the physical and mental health of Latino immigrants. Cultural strengths including social support, religiosity, and level of enculturation have been linked to Latino immigrant health. In the minority stress model, cultural strengths have been theorized to moderate relationships between discrimination and health. Thus, the purpose of this study was to examine the relationships among acculturative stress, discrimination, and mental and physical health among a sample of Latino immigrants living in the United States. A secondary aim was to examine whether the direct and indirect effects among these series of variables are moderated by social support, religiosity, and enculturation. A community sample of 204 Latino immigrants living in the Richmond area were recruited to complete questionnaires measuring these constructs. A series of moderated mediation analyses were run in order to test the study's research questions. Generally, bivariate associations between variables were congruent with previous research. Mental and physical health were negatively associated. In general, minority stressors were associated with mental health symptoms. The only variation was depression was not found to be associated with acculturative stress, which may be due to Latino somatic presentations of distress. Cultural

strengths were negatively associated with mental health symptoms as well as minority stressors.

Anxiety was found to mediated the effects of both acculturative stress and discrimination on physical health. Depression was found to mediate the effect of discrimination on physical health but not of acculturative stress on physical health. Social support was found to moderate indirect effect of discrimination on physical health through depression, wherein higher levels of social support weakened the effect. Religiosity was found to moderate the indirect effects of discrimination on physical health through both anxiety and depression symptoms, such that higher levels of religiosity strengthened the indirect effect, contrary to hypotheses. Religiosity also moderated the indirect effect of acculturate stress on physical health through anxiety, such that higher levels of religiosity strengthened this effect, also contrary to the hypothesis. Enculturation moderated the indirect effects of both acculturative stress and discrimination on physical health through anxiety, such that higher levels of enculturation weakened these indirect effects. Results from this study indicate that minority stressors can impact physical health through mental health, and these relationships can be buffered by links to cultural strengths including social support and enculturation.

INFLUENCE OF CULTURAL STRENGTHS ON THE RELATIONSHIPS AMONG ACCULTURATION, RACISM, AND MENTAL AND PHYSICAL HEALTH AMONG LATINO IMMIGRANTS

Overview of Literature Review

This literature review will begin by discussing the status of Latino immigrants and the current political climate in the United States. This will be followed by a description of health care disparities in Latino Immigrants as well as both acculturation and acculturative stress. At times the process of acculturation in Latino immigrants leads to conflicts, resulting in acculturative stress, which has been associated with mental and physical health problems. In addition to acculturative stress, Latinos also experience discrimination based on ethnicity. Discrimination is described next including its impact on mental and physical health. This is followed by a discussion of the association between mental and physical health in Latino immigrants. A description of the Immigrant/Hispanic Paradox is provided, describing surprisingly low mortality rates in Latino immigrants despite low socioeconomic standing in the United States. This is followed by identification of cultural strengths found be linked to Latino mental and physical health. Social support, religiosity, and level of enculturation are discussed and provide support of the possible buffering role of cultural strengths in Latino immigrant mental and physical health. Due to the discrimination and acculturative stress experienced by Latino immigrants, the appropriateness of the Minority Stress Model is discussed next, providing insight into the impact of oppression of minority groups on the mental and physical health of ethnic minority populations. This is followed by the current study and hypotheses.

Status of Latino Immigrants in the United States

In the United States, Latinos represent the largest and fastest growing minority group, comprising approximately 17.8% of the population (United States Census Bureau, 2016). Latinos

account for more of the nation's overall population growth than any other race or ethnicity (Pew Hispanic Center, 2017). This growth is attributed to over three decades of Latino immigration to the United States from Central and South America (Takeuchi, Alegria, Jackson, & Williams, 2007). By 2030, the Latino population is predicted to represent 20% of the United States population (Caplan, 2007). Public opinion about immigration is polarizing, and recent historical events have exacerbated the divide in the United States (Valentino, Brader, & Jardina 2013). Arizona State Senate Bill 1070 passed in 2010 permitting police to check citizenship status of any individual suspected to reside in the United States illegally (Arizona State Senate, 2010). Presidential promises to build a Mexican-border wall and removed protection of immigrants in the Deferred Action for Childhood Arrivals (DACA) program intensify anti-immigrant tensions (CNN, June 22, 2017). Immigration to the United States can be a particularly stressful time for individuals in any time period immigrating from a multitude of countries of origin (Gerber, 2011). Support of immigrants living in the United States has never been widespread, and the current political climate has worsened the divide (Kinder, & Kam, 2009). Increases in anti-immigrant sentiment directed toward Latino immigrants has exacerbated the acculturative stress the community experiences (Dawson & Panchanadeswaran, 2016). The allostatic load experienced by Latino immigrants daily due to acculturative stress and constant discrimination may impact physical health expressed in health disparities.

Latino Health Disparities

The World Health Organization defines health disparities as "differences in health which are not only unnecessary and avoidable, but are considered unfair and unjust" (Carter-Pokras & Baquet, 2002, pg. 427). Health disparities are expressed by major gaps in life expectancy in the United States (Perez-Escamilla, 2011). Death rates for Latinos is lower than that for the U.S.

population, however, mortality levels decrease due to demographic and social factors including poverty, unstable employment, trauma, and social stressors (Vega, Rodriguez and Gruskin, 2009). Four risk factors explain the greatest proportion of variance in these disparities includes: smoking, high blood pressure, excessive body fat and high blood sugar concentrations (Danaei, et.al., 2010). The greatest disparity risk experienced by Latinos is diabetes (Vega, Rodriguez and Gruskin, 2009). Fernandez and Morales (2007) found an association between increased rates of diabetes and duration of residence in the U.S. This increase may be impacted by the trend for the immigrant Latino population living in the U.S. to be less likely to receive guideline-based health care, receive preventive health care nor have a clinic or usual source of health care (CDC, 2004). Perez-Escamilla (2011) found an association between acculturation and poor dietary quality and obesity providing evidence for ties between acculturation and type 2 diabetes, one of the four risk factors in health disparities. Ortega, et.al., (2007) investigated access to health care, uses of services and health care experiences in undocumented Latinos and found less usage, poorer experiences with heath care as compared to U.S. born Latinos. Similar results were found by Lum and Vanderra (2009) who extending findings by incorporating mental health outcomes relating immigrant status was negatively associated with levels of depression as well as difficulty with health insurance coverage. Lum and Vanderra (2009) reported similar ties between acculturation and health disparities specifically surrounding access to health insurance coverage. A factor contributing to Latino health disparities may include cultural factors including acculturation.

Acculturation

Acculturation is defined as the dual process of cultural and psychological change that takes place as a result of contact between two or more cultural groups and their individual

members (Berry, 2005). This acculturation process is a crucial adaption for migration to a new sociocultural environment (Rogler, Cortes, & Malgady, 1991). Acculturation into a new system includes acquiring the language, behavioral norms, and values of the host country (Rogler et al., 1983). As a process of cultural and psychological changes, acculturation requires several forms of mutual accommodation between both groups (Berry, 2003, 2005). These accommodations are a long-term process that may take years or even generations (Berry, 2005). Group-level changes are bidirectional, and a reciprocal process with change occurs in both groups (Redfield, Linton, & Herskovits, 1936). Changes in identification occurring during the process of acculturation are theorized to occur in two distinct dimensions, rather than one wherein individuals adapting to their host culture lose aspects of their cultural of origin (Gordon, 1964). Berry (2006) theorizes the reciprocal nature of acculturation may be moderated by national policies and climate regarding immigration.

The process of acculturation at the individual level involves co-occurring behavioral, social, and cognitive changes (Marin, 1992). In learning about one's host culture's traditions, changes in the type of food and media consumed are commonly first adapted (Marin & Gamba, 2003). Next, individuals may shift social interactions as expressed by changes in preferences in language, neighbors, or friends (Marin & Gamba, 2003). Lastly, most significant changes occur in shifts of one's values and norms to the host culture (Marin & Gamba, 2003). This process of acculturation varies as a function of migration experiences and reception experienced by immigrants (Lawton & Gerdes, 2014).

Latino immigrants tend to adopt American culture within a couple generations (Concah, Sanchez, Rosa, & Villar, 2013). Bodvarsson and Berg (2009) found compared to other ethnic groups, Latino immigrants' process of acculturation is slower. This difference between Latinos

and other ethnic groups may be due to higher levels of acculturative stress (Borjas, 2007). Schwartz, Unger, Zamboanga and Szapoczink (2011) found acculturation is not necessarily voluntary and may be due to power differentials and context circumstances wherein the dominant group's attitudes influence acculturation. These environmental conflicts and possible internal difficulties relating to cultural changes may implicate the presence and intensity of acculturative stress (Berry, 1997).

At times, the psychological and sociocultural adaptations of acculturation take place seamlessly, and other times a culture conflicts can form creating acculturative stress. As different groups and individuals experience acculturation in various manners, the variability found also suggests that research should investigate healthy adaptations (Berry, 2005). As these variations in acculturation are found within families and support networks, it is crucial to understand the stress experienced during this process (Lueck & Wilson, 2011) and its impact on Latinos' well-being.

Acculturative Stress

The process of acculturation within an individual is viewed as an adaption to the stress of assimilation and the development of coping mechanisms in response to that stress (Lazarus & Folkman, 1984). The losses experienced throughout the adjustment or integration into a new host culture is defined as acculturative stress (Hovey, 2000). Caplan (2007) postulates three dimensions of acculturative stress including; instrumental/environmental stressors, social/interpersonal stressors, and societal stressors, as interrelated rather than discrete entities. Instrumental/environmental acculturative stress is related to difficulties in obtaining day-to day necessities including financial needs, language barriers, unsafe neighborhoods, unemployment and dangerous working conditions (Caplan, 2007). Changes in relationships, gender roles,

behaviors and cultural norms resulting from acculturation are related to social/interpersonal acculturative stress (Caplan, 2007). Common among all Latino groups are experiences of discrimination and stigma related to undocumented status constituting societal acculturative stress (Caplan, 2007). These negative life events and persistent sources of strain are specific to acculturation and require discrete changes in routine and meaningful adaptation (Turner & Wheaton, 1995). Typical acculturative stressors are rooted in navigating between two different cultures in daily life, as well as managing intercultural conflict and opposing cultural values/roles (Araujo, Dawson, & Panchanadeswaran, 2010). If an individual is unable to cope with the chronic strain and negative experiences, the stress affects psychological functioning (Lazarus & Folkman, 1984). Experiences of acculturative stress vary across Latino ethnicities and individuals, and the impact of acculturative stress and health outcomes are highly complex and often misunderstood.

Acculturative Stress and Mental Health

Acculturative stress has been shown to be associated with mental health problems in the Latino immigrant population. Smart and Smart (1995) found at the very beginning of the acculturation process in Mexican immigrants, stress and anxiety may be acute. Acculturative stress has been associated with higher levels of anxiety and depressive symptoms among Mexican American college students (Crockett et al 2007; Wong, Correa, Robinson, & Lu, 2016). High acculturative stress has been associated with endorsement of lifetime anxiety and 12-month depressive disorders in Latino immigrants (Leong, Park, & Kalibatseva 2013). Latino intrapersonal well-being has also been found to be affected by acculturative stress: self-esteem was negatively affected by acculturative stress, which, in turn, led to decreased psychological well-being in Latino Immigrants (Leong, Park, & Kalibatseva, 2013). Low self-esteem was

found to exacerbate the negative effect of acculturation stress on first-generation Mexican immigrants' psychological well-being (Kim, Hogge, & Salvisberg, 2014). The effect of acculturative stress does not impact Latino individuals in a vacuum, as it also negatively impacts interpersonal relationships and familial roles. Increases in acculturative stress have been shown to be associated with higher levels of martial distress (Negy, Hammons, Reig, Ferrer, & Marino Carper, 2010). Among Mexican-American women, elevated prenatal maternal depressive symptoms were associated with acculturative stress during pregnancy (D'Anna-Hernandex, Aleman, & Flores, 2015). Acculturative stress has also been found to impact use of substances and exacerbate severe mental illness. Acculturative stress was positively associated with alcohol and drug use disorders in Latino immigrants (Savage & Mezuk, 2014), as well as associated with auditory hallucinations among Latinos wherein younger ages of immigration increased psychotic risk (DeVylder et. al. 2013).

Racial/Ethnic Discrimination

A related construct to acculturative stress is discrimination, which is typically defined as experiencing negative events that are based on group membership (Dawson & Panchanadeswaran, 2016). Approximately 50% of Latino adults report discrimination as part of their daily experience (Perez, Fortuna & Alegria, 2008). Latinos face daily discrimination due to race/ethnicity (Zarate et al., 2004), systemic racism (Stacey, Carbone-Lopez, & Rosenfeld, 2011), housing (Quillian, 2006), hate crimes (Lopez, 2012), financial disadvantages (Hunter, 2008), law enforcement (Howerton, 2006), medical care (LaVeist, Diala & Jarrett, 2000), and differential treatment in the workplace and in academia (Harrison, Reynolds-Dobbs, &Thomas, 2008, APA, 2012). A thick accent can often identify a Latino as an immigrant and predispose Latino immigrants to increased discrimination (APA, 2012). The daily level of discrimination

experienced by Latinos may range from acute events, such as a hate crime, to daily microaggressions of differential treatment at grocery stores (Ryan, Gee, & Laflamee, 2017). Approximately 60% of Latinos report that discrimination is a major problem (Lopez et al., 2010). The evidence of the impact of these daily experiences of discrimination on the mental and physical health of Latino populations is scarce, though growing.

Discrimination and Mental Health

A growing body of evidence shows an association between discrimination and mental health in the Latino immigrant population. Discrimination has been related to depression, anxiety, and substance abuse in Mexican-Americans (Leong, Park, & Kalibatseva, 2013; Otiniano Verissimo, Grella, Amaro, & Gee, 2014; Finch, Kolody, & Vega, 2000). Among Latino immigrant parents, racial/ethnic discrimination upon settlement in the United States has been strongly associated with depressive symptoms (Ornelas & Perreira, 2011; Ornelas, Perreira, Beeber & Maxwell, 2009), and with number of past-month drinking days and past-month binge drinking (Tran, Lee & Burgess, 2010). Psychological distress and overall stress levels have been found to be associated with discrimination: a positive relationship was found between major racist events, everyday discrimination, and stress levels among Dominican immigrant women (Dawson, 2009). Bekteshi, van Hook, and Matthew (2015) studying Puerto Rican-born women residing in the United States found racial discrimination was positively associated with psychological distress. A negative effect of discrimination on life satisfaction has been found in Latino male day laborers (Ojeda & Pina-Watson, 2013), and discrimination was found to be associated with increased probability of reporting psychotic experiences in Latino-Americans (Oh, Yang, Anglin & DeVylder, 2014; Mclaughlin, Hatzenbuehler & Keyes, 2010).

Acculturative Stress and Racial/Ethnic Discrimination in Physical Health

Research on discrimination and acculturative stress and physical health among Latino immigrants is sparse. Garces, Scarinci, and Harrison (2006) found that Latina immigrants know what to do to maintain their health, but tend to adopt some unhealthy behaviors (e.g., unhealthy eating). Discrimination has been found to negatively affect Latinos' reported health. Among Mexican-origin immigrants, discrimination was found to predict poor general health and depression, influencing women more greatly than men (Flores, et. at. 2016). Increases in discrimination-related stress predicted elevated systolic blood pressure (SBP; Ryan, Gee, & Laflamme, 2006) and Epstein-Barr virus antibody levels among immigrant Latino farm workers in Oregon (McClure, et al 2010). Discrimination experiences and instances of "othering" ascribing Latino immigrants to minority status were found to also be relevant in health outcome research (Viruell-Fuentes, 2007). Self-reported discrimination has been associated with lower efficacy surrounding access to quality health care in Latinos (Gee, Ryan, Laflamme, & Holt, 2006).

Latino health has similarly been found across a number of studies to be negatively affected by acculturative stress (Caplan, 2007). Finch and Vega (2003) found physical health to be negatively associated with acculturation stressors (i.e., legal status and language conflicts). Cavazos-Rehg, Zayas, and Spitznagel (2007) found preoccupation with disclosure and deportation, a form of acculturative stress, to be associated with negative health states. Among adult Latino migrant farmworkers, acculturative stress was related to declines in health, such that higher acculturative stress was found to have deleterious effects on self-related physical health (Finch, Frank, & Vega, 2004). Acculturative stress, specifically legal status, was found to negatively affect depression among Mexican-Americans (Finch, Kolody, & Vega, 2000).

Linking a number of these constructs, research has found that acculturative stress mediated the relationship between discrimination and physical health (Finch, Hummer, Kol, & Vega, 2001).

Mental and Physical Health in Latino Immigrants

Extremely limited research studying conjointly both the mental and physical health of Latino immigrants was uncovered for this literature review. Mental and physical health have been associated with migrant and acculturation experiences (Torres & Wallace, 2013). Torres and Wallace (2013) investigated the impact of pre-migration circumstances on post-immigration physical health and psychological distress among Latino immigrants. Immigration related stress was associated with higher levels of psychological distress, and unplanned migration was associated with poor reported physical health status (Torres & Wallace, 2013). Political violence has also been associated with both physical and mental health symptoms in Latino immigrants (Eisenman, Gleberg, & Liu, 2003). Eisenman, Gelberg, and Liu (2003) investigated the impact of pre-migration political violence on health-related quality of life, depression, anxiety, panic disorder, and posttraumatic stress disorder. Political violence was found to be associated with depression, posttraumatic stress disorder, and panic disorder as well as chronic pain, worsening physical functioning and lower perceptions of general health (Eisenman, Gleberg, & Liu, 2003). Finally, Dey and Lucas (2003) investigated health prevalence estimates between United States born and immigrant adults, focusing on both physical and mental characteristics in addition to health care access. In general, United States born adults rated their health more positively compared to immigrants and Latino immigrant adults were more likely to experience serious psychological distress (Dey & Lucas, 2003). Latino immigrant adults' length of stay in the United States significantly affected the prevalence of risk factors and chronic diseases (Dey & Lucas, 2003). Other than these three studies, no additional research was uncovered linking

mental and physical health in Latino immigrants, and even these three studies did not directly investigate the association between the mental and physical health of this population.

Immigrant/Hispanic Paradox

Less acculturated immigrants appear to exhibit better health outcomes than native-born or more acculturated individuals (Dey & Lucas, 2006). This phenomenon is referred to as the Immigrant Paradox (Fanzini, Ribble, & Keddie, 2001). The Immigrant Paradox is typically applied to racial/ethnic groups that settle in the United States, like Asians and Latinos (Teruya & Bazargan-Hejazi, 2013). Even though Latinos rank low in most socioeconomic indexes, Latinos' mortality outcomes are equal or better than other ethnicities in the United States, known as the Hispanic Paradox (Borrell, & Crawford, 2009**;** Markides & Coreil, 1986). This relatively low mortality rate in Latino immigrants is longstanding and well-documented (Humer et al., 1999). The Hispanic Paradox involves higher survival and better health for Latinos (Riosmena, Wong & Palloni, 2013). The exclusive advantage is found only in foreign-born Latinos but not found in United States born Latinos (Abraido-Lanza et al., 1999, Borrell & Crawford, 2009). The paradoxical nature of the Hispanic Paradox is not that Latinos exhibit better health relative to Whites but that the Latino health is better than expected due to Latinos' low socioeconomic standing in the United States (Markides & Eschbach, 2005). United States-born Whites and foreign-born Latinos appear to exhibit similar health outcomes, while Latinos born in the United States are at high risk for both psychological and medical concerns (Teruya & Bazargan-Hejazi, 2013). Though paradoxical, Latino immigrants who suffer negative socioeconomic circumstances, are least likely to have health insurance, and experience stressors related to acculturation and immigration, typically show better health compared to their United States born counterparts (Jasso, Massey, Rosenzweig, & Smith, 2004). However, immigrant health

advantages may occur because healthy individuals naturally migrate to the United States, known as the migrant health selectivity (Crimmins et al., 2007). These advantages may also be due to the salmon bias which relates the unreported exit of immigrants impairs the accuracy of longevity (Bostean, 2013) or simply the underreporting deaths of the undocumented (Franzini et al., 2001). Researchers postulate samples supporting the Hispanic Paradox only considered selective healthy groups and finding may not be representative of the wider Latino population (Nalini-Junko, 2011). In general, the Hispanic Paradox is inconsistent and variable (Teruya & Bazargan-Hejazi, 2013), and as such further investigation is warranted.

Cultural Strengths as Buffers

Research has documented the associations among acculturative stress, discrimination, mental health, and physical health of Latino immigrants in the United States. Some of these variables have also been linked to cultural strengths, such as social support, religiosity, and level of acculturation. Although discrimination and acculturative stress are associated with physical and mental health concerns, protective factors may moderate their impact.

Social Support in Latino Immigrants. Social support is the psychological phenomenon wherein social interactions provide assistance to individuals perceived to be available, loving, caring, and open (Hobfall & Stokes, 1988). An individuals' capacity to respond to stressful events is influenced by the availability of social support (Solberg & Villarreal, 1997). Social support has been found to relate inversely to depression in Latino immigrants (Kiang et. al. 2010; Ornelas & Perreira, 2011). Among Latino undergraduate students, social support was found to moderate the relationship between stress and distress (Solberg & Villarreal, 1997, Schneider & Ward, 2003; Torres, Solberg, 2001). Social support has also been found to be associated with lower stress levels among pregnant Latina immigrants (Campos, Schetter, & Abdou, 2008,

Thornton, et al., 2006). Social support has been positively related to self-reported physical and mental health; wherein social connection was found to be most important in Latino immigrants (Mulvaney-Day, Alegria, & Sribney, 2006; Finch & Vega, 2003). Aranda, Castandea, Lee, and Sobel, (2001) found gender differences in the moderating role of social support on depressive symptoms in Mexican Americans, wherein social support buffered depression in female but not male Latino immigrants. The impact of discrimination on physical health has also been found to be moderated by social support in a sample of Mexican-origin adults living in California (Finch & Vega, 2000).

The Role of Religiosity in Latino Immigrants. Approximately 94% of Latinos living in the United States report a religious affiliation (Espinoza, Elizondo, & Miranda, 2003). As Latino immigrants tend to cope using methods that are consistent with their religious practices, religiosity may be another cultural buffer (Morenoa & Cardemil, 2013). Religiosity is defined as the following of practices and rituals through an organized system of beliefs (Cervantes & Parham, 2005). Kirchner and Patino (2010) found an inverse relationship between religiosity and depressive symptoms in Latino female immigrants. Religiosity has also been found to be inversely related to stress (Kirchner & Patino, 2010). Higher reliance on religious support mechanisms in Latino immigrants has been found to decrease the likelihood of reporting fair/poor health (Finch & Vega, 2003). Religiosity was found to be directly related to psychological wellbeing in a sample of Latinos with arthritis (Abraido-Lanza, Vasquez, Echeverria, 2004). Arrendondo, Elder, Ayala, and Campbell (2005) found a strong relationship between religiosity and health-protective effects among Latino immigrants. Religiosity has also been associated with treatment-seeking for alcohol and drugs (Spence, Wallisch, & Smith, 2007). Lower prevalence of smoking in Latinos has been associated with religious service attendance

(Gillum, 2005). Finally, religiosity was associated with better mental health via an association with Hispanic ethnicity (Franzini, Ribble, & Wingfeld, 2005). The degree of religious involvement may protect against negative mental and physical health outcomes.

Enculturation and Mental Health. Enculturation is defined as "the processes by which individuals are socialized to indigenous cultural norms, that is, values, behaviors, attitudes or worldviews" (Alamilla, Kim, & Lam, 2010, pg. 3). Herskovits (1948) related enculturation as 'the process of learning one's culture [….] which permits us to account for the fact that culture maintains a recognized form generation after generation" (p. 626). Barerra, Gonzales, Lopez and Fernandez (2004), found enculturation to be protective for Latino adolescents due to social and familial support, traditional values and a shared sense of ethnic connection. Alamilla, Kim, and Lam (2010) examined the relationship between acculturation, enculturation, racism and mental health outcomes in Latino college students reporting both acculturation and enculturation exacerbated the relationship between racism and mental health. Immigrants have been found to identify with their ethnic culture more than their U.S.-born counterparts (Rumbaut, 1994).

Minority Stress Model

Individuals from stigmatized social categories, most often in minority positions, experience excess stress referred to as minority stress (Meyer, 2003). Racial/ethnic disparities in health are argued to be attributed to social, economic, and ethnic/racial inequality in the United States (Spalter-Roth, Lowenthal & Rubio, 2005). Poorer mental and physical health maybe due to individuals experiencing multiple adverse conditions including racial discrimination, poverty, inadequate housing, and poor health care treatment (Williams, Yu, Jackson, & Anderson, 1997). Groups that occupy multiple disadvantaged social categories including socioeconomic status, race, ethnicity, or gender, specifically stigmatized minatory groups, that are exposed to multiple

risk factors are more vulnerable to the effects of stress (Williams et al., 1994). Due to these stressful social environments, minority groups may experience compromised health (Meyer, 2003). Ethnic minorities not only experience stress associated with minority status but also endure daily life stressors, unbeknown to non-minorities, which heightens the risk for physical and mental health problems (Turner & Avison, 2003). The unique stress exposed to oppressed groups as a result of minority statuses is described in the minority status stress model (Meyer, 2003). Evidence is growing supporting the subjective experience of discrimination of oppressed minatory groups directly and indirectly affects the mental and physical health of ethnic minority populations (Williams, Neigbors, & Jackson, 2003). As discussed above, scare research has linked discrimination (Williams et al., 2003) and acculturative stress to health outcomes (Ebin, Sneed, Morisky, Rotheram-Borus, Magnusson, & Malotte, 2001). Meyer's (2003) model emphasizes cultural factors that may weaken these relationships including social support. The minority stress model highlights the protective effects of cultural buffers within minority groups (Meyer, 2003). Within the Latino culture and investigated in the current analysis are the cultural strengths of social support, religiosity, and enculturation. As described above, these cultural factors have been found to be associated with decreased mental health concerns in Latino immigrants living in the United States.

Current Study and Hypotheses

The dramatic increase in the size of the Latino population in the United States suggests a great need for targeted research on the unique experiences and challenges faced by immigrants including discrimination, acculturation, and mental and physical health. Acculturative stress' impact on mental and physical health among Latinos is complex and not well understood. Experiences of discrimination impact health promoting behaviors and presentation of physical

ailments. Thus, it is reasonable to suggest that acculturative stress and perceived discrimination will be related to Latino immigrant physical and mental health. Social support, religiosity and level of enculturation are cultural strengths and may serve as buffers of these relationships.

Despite the research documenting the often bivariate connections among these constructs, and at best occasionally documenting buffering effects of cultural strengths, no research to date has attempted to link this set of variables in a series of theoretical causal chains, incorporating a series of moderational (via cultural strengths) effects. As a result, the primary aim of the current study was to examine the relationships among acculturative stress, racism, and mental and physical health among a sample of Latino immigrants living in the United States. A secondary aim was to examine whether the direct and indirect effects among these series of variables are moderated by social support, religiosity, and enculturation. A visual model linking these variables and respective aims appears in Figure 1.

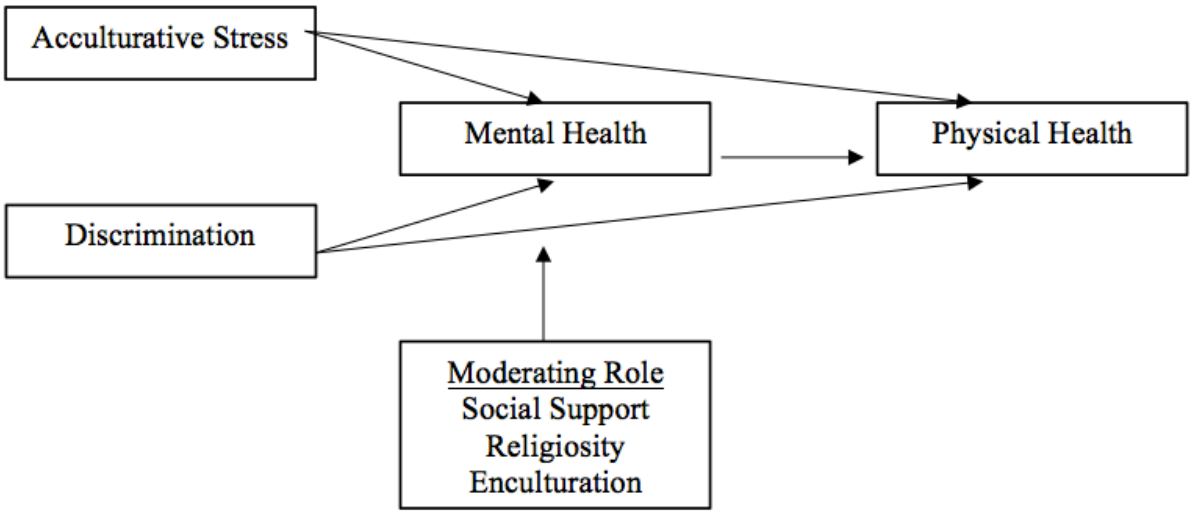


Figure 1. Relationships among acculturative stress, racism, and mental and physical health and these direct and indirect effects moderated by social support, religiosity, and enculturation.

Aim 1: Direct and Indirect Effects

Hypothesis 1.1. Research on Latino immigrants in the United States has linked acculturative stress to mental health (i.e., anxiety and depression) (Crockett et al 2007; Wong, Correa, Robinson, & Lu, 2016). Accordingly, it is hypothesized that greater acculturative stress will be associated with higher levels of anxiety and depression.

Hypothesis 1.2. Research on Latino immigrants in the United States has linked discrimination to mental health (i.e., anxiety and depression) (Leong, Park, & Kalibatseva, 2013; Otiniano Verissimo, Grella, Amaro, & Gee, 2014; Finch, Kolody, & Vega, 2000; Ornelas & Perreira, 2011; Ornelas, Perreira, Beeber & Maxwell, 2009). Accordingly, it is hypothesized that greater discrimination will be associated with higher levels of anxiety and depression.

Hypothesis 1.3. Latino immigrants living in the United States' experiences of acculturative stress have been found to be associated with physical health (Caplan, 2007; Finch, Hummer, Kol, & Vega, 2001). Thus, it is hypothesized that higher acculturative stress will be associated with decreased physical health.

Hypothesis 1.4. Latino immigrants living in the United States' experiences of discrimination has been found to be associated with physical health (Ryan, Gee, & Laflamme, 2006; McClure, et al 2010; Viruell-Fuentes, 2007). Thus, it is hypothesized that higher discrimination will be associated with decreased physical health.

Hypothesis 1.5. There are research links between mental health (i.e., anxiety and depression) and acculturative stress in Latino immigrants living in the United States (Crockett et al 2007; Wong, Correa, Robinson, & Lu, 2016). There are also relationships between acculturative stress experiences and physical health in Latino immigrants (Caplan, 2007; Finch, Hummer, Kol, & Vega, 2001). Given these relationships, it is hypothesized that mental health

(i.e., anxiety and depression) will mediate the relationship between acculturative stress and physical health.

Hypothesis 1.6. There are research links between mental health (i.e., anxiety and depression) and discrimination in Latino immigrants living in the United States (Crockett et al 2007; Wong, Correa, Robinson, & Lu, 2016). There are also relationships between discrimination experiences and physical health in Latino immigrants (Flores, et. at. 2016; McClure, et al 2010). Given these relationships, it is hypothesized that mental health (i.e., anxiety and depression) will mediate the relationship between discrimination experiences and physical health.

Aim 2: Moderational Effects

Hypothesis 2.1. Research from Latinos living in the United states has supported relationships between social support and mental health issues (Kiang et. al. 2010; Rivera, 2007; Ornelas & Perreira, 20011). It is hypothesized that social support will moderate relationships among acculturative stress, mental health, and physical health, such that higher levels of social support will weaken these relationships.

Hypothesis 2.2. Research from Latinos living in the United States has supported relationships between social support and mental health issues (Kiang et. al. 2010; Rivera, 2007; Ornelas & Perreira, 20011). It is hypothesized that social support will moderate relationships among discrimination, mental health, and physical health, such that higher levels of social support will weaken these relationships.

Hypothesis 2.3. Research from Latinos living in the United states has explored relationships between religiosity and mental health issues (Kirchner & Patino, 2010; Kirchner & Patino, 2010). It is hypothesized that religiosity will moderate relationships among acculturative

stress, mental health, and physical health, such that higher levels of religiosity will weaken these relationships.

Hypothesis 2.4. Research from Latinos living in the United States has explored relationships between religiosity and mental health issues (Kirchner & Patino, 2010; Kirchner & Patino, 2010). It is hypothesized that religiosity will moderate relationships among discrimination, mental health, and physical health, such that higher levels of religiosity will weaken these relationships.

Hypothesis 2.5. Research from Latinos living in the United states has explored relationships between enculturation and mental health issues (Barerra, Gonzales, Lopez, & Fernandez, 2004). It is hypothesized that enculturation will moderate relationships among acculturative stress, mental health, and physical health, such that higher levels of enculturation will strengthen these relationships.

Hypothesis 2.6. Research from Latinos living in the United States has explored relationships between enculturation and mental health issues (Barerra, Gonzales, Lopez, & Fernandez, 2004). It is hypothesized that enculturation will moderate relationships among discrimination, mental health, and physical health, such that higher levels of enculturation will strengthen these relationships.

Method

Participants

An initial community sample ($N = 207$) of participants were recruited from churches, restaurants, barber shops, primary care clinics, the Richmond Social Services Department and Latino sports associations, among other similar organizations. There were a number of inclusion criteria: (a) all participants must have been over the age of 18; (b) participants must have been born in Latin America (including Puerto Rico and Brazil); and (c) participants must have been

able to read and write in Spanish via self-report. To ensure participants met these criteria, they were pre-screened prior to beginning the informed consent. Of these initial 207 participants, three participants' data were removed from the database due to greater than 50% missingness. As a result, the final sample size was $N = 204$.

The average age of these 204 participants was 36.26 ($SD = 12.45$). The age groupings appear in Table 1 and suggest a very age diverse sample, with the exception of individuals over age 61. In terms of gender, 64.2% were women, and 35.8% were men. Although the most common romantic relationship category was married, there was also a diverse set of relationship statuses; the sample also tended to be on the lower-income spectrum (Table 2). The range of educational attainment and work status also varied substantially (Table 3). Participants were from an extremely diverse set of Spanish-speaking countries, with the largest representations from Mexico, El Salvador, and Guatemala (Table 4). Note that in these tables, total numbers may not add to 204 because of missing data.

Table 1. *Percentages of Participant Age Groups*

	N	Percent (%)
Age Group		
18-30	73	36.5
30-40	72	36
40-50	24	24
50-60	22	22
61+	9	4.5

Table 2. *Percentages Of Marital Status and Family Gross Income*

	N	Percent (%)
Marital Status		
Married	98	47.5
Single	64	31.4
Open Union	18	8.8
Divorced	16	7.9
Separated	5	2.5
Other	4	2

Widowed	1	.5
Family Gross Income		
> $15,000	86	42.2
$15,000 - $35,000	52	25.5
$35,000 - $55,000	28	13.7
$55,000 - $75,000	11	5.4
< $75,000	9	4.4

Table 3. *Percentages of Participant Highest Education and Employment Status*

	N	Percent (%)
Highest Education Acquired		
Primary	45	22.1
Secondary	33	16.2
High School/ GED	45	22.1
Some College	34	16.7
University	31	15.2
Post- Graduate	11	5.4
Employment Status		
Full Time	75	36.8
Homemaker	41	20.1
Part Time	30	14.7
Unemployed	21	10.3
Paid by Hour	13	6.4
Other	8	3.9
Volunteer Work	4	2
Full Time Student	1	.5
Part Time Student	1	.5
On Disability	1	.5

Table 4. *Percentages of Participant Ethnicity*

	N	Percent (%)
Ethnicity		
Mexican	58	28.4
Salvadoran	41	20.1
Guatemalan	31	15.2
Honduran	19	9.3
Puerto Rican	13	6.4
Dominican	11	5.4
Peruvian	7	3.4
Colombian	6	2.9
Nicaraguan	4	2.5

Bolivian	3	1.5
Cuban	3	1.5
Venezuelan	2	1
Argentinian	1	.5
Brazilian	1	.5
Paraguayan	1	.5
Other (e.g., Hispanic/Spanish)	2	1

Measures

All scales used in the current study had a Spanish version readily available, except for the Daily Life Experiences Scale, Religious Commitment Inventory, and the Riverside Acculturation Stress Inventory, which were translated into Spanish using Carter and Chapman's method (Carter & Chapman, 1979). This involved translation from English to Spanish by a bicultural and bilingual researcher and then back-translation into English by a second bicultural and bilingual researcher. Any discrepancies between the versions were mutually resolved.

Short Form Health Survey (SF-36). The Spanish SF-36 is a short-form questionnaire for measuring general health concepts (Alonso, Prieto, & Antó, 1995). The SF-36 was designed for use in clinical practice, research, health policy evaluations and general population surveys. It includes one multi-item scale that assesses eight health concepts: 1) limitations in physical activities because of health problems; 2) limitations in social activities because of physical or emotional problems; 3) limitations in usual role activities because of physical health problems; 4) bodily pain; 5) general mental health; 6) limitations in usual role activities because of emotional problems; 7) vitality; 8) general health perceptions. However, in the current study, only the General Health subscale was used in order to tap physical health. Higher scores reflect greater health related quality of life. Within a Latino sample, the SF-36 General Health subscale has been found to have moderate internal reliability with a Cronbach's alpha = .69 (Augustovski, Lewin, Elorrio, & Rubinstein, 2008). The Cronbach's alpha for the General Health subscale of the SF-36 in the current sample was .79.

Patient Health Questionnare-9 (PHQ-9): The Spanish PHQ-9 is a 9-item depression module based on the 9 DSM-IV criteria (Arrieta et al., 2017; Muñoz-Navarro et al, 2017). The PHQ-9 is designed for use in clinical practice and research. The 9-item depression module scores each of the 9 DSM-IV criteria as "0" (not at all) to "3" (nearly every day). Scoring used in the current study was the mean of all items; higher mean scores indicate higher levels of depression in daily life. Within a Latino sample, the PHQ-9 has been found to have good internal reliability with a Cronbach's alpha = .89, good test-retest reliability with a correlation at p = .84 (Arrieta et al., 2017; Muñoz-Navarro et al, 2017). The PHQ-9 sensitivity ranges from 88% and specificity from 80% (Arrieta et al., 2017; Muñoz-Navarro et al, 2017). The Cronbach's alpha for the total score of the PHQ-9 in the current sample was .88.

Generalized Anxiety Disorder-7 (GAD-7): The Spanish GAD-7 is a 7-item anxiety module that scores a subset of the 13 DSM-IV criteria as "0" (not at all), "1" (several days) "2" (more than half the days), and "3" (nearly every day) (García-Campayo et al., 2010). Scoring used in the current study was the mean of all items; higher mean scores indicate higher levels of anxiety in daily life. Within a Latino sample, the GAD-7 has been found to have excellent internal reliability with a Cronbach's alpha = .94 (García-Campayo et al., 2010). The GAD-7 sensitivity was found to be 87% and specificity at 94%. The Cronbach's alpha for the total score of the GAD-7 in the current sample was .92.

Interpersonal Support Evaluation List (ISEL): The Spanish ISEL (Merz, et al., 2014) is a measure of perceived availability of social support. Scoring used in the current study was the mean of all items; higher mean scores indicate higher levels of social support. Within a Latino sample, the ISEL has been found to have adequate internal reliability with a Cronbach's alpha =

.63 (Merz, et al., 2014). The Cronbach's alpha for the total score of the ISEL in the current sample was .80.

Religious Commitment Inventory-10 (RCI-10): The RCI-10 is a brief 10-item assessment of the level of one's religious commitment using a 5-point Likert rating scale from 1 ('Not at all true of me') to 5 ('Totally true of me') (Worthington, et al 2003). Scoring used in the current study was the mean of all items; higher mean scores indicate higher levels of religious commitment. The RCI-10 has been found to have excellent internal reliability with a Cronbach's alpha = .93 (Worthington, et al 2003). The Cronbach's alpha for the total score of the RCI in the current sample was .94.

Bicultural Involvement Scale (BIS). The Spanish BIS measures biculturalism ranging from monoculturalism to biculturalism as well as cultural involvement ranging from cultural marginality to cultural involvement (Birman, 1998). The BIS allows the calculation of both Hispancism and Americanism subscales. However, in the current study, only the Hispanicism subscale if the BIS was used to tap enculturation by taking the means of the Hispanicism/Spanish items (1-5 and 11-17), creating one dimension (Birman, 1998). Within a Latino sample, the Hispanicism subscale of the BIS has been found to have moderately strong internal reliability with a Cronbach's alpha =.90 (Birman, 1998). The Cronbach's alpha for the Enculturation subscale of the BIS in the current sample was .85.

Riverside Acculturation Stress Inventory (RASI): The RASI measures acculturative stress through 5 domains of cultural challenges including: language skills, work challenges, intercultural relations, discrimination and cultural/ethnic make-up of the community (Benet-Martinez, 2003). The inventory is comprised of 15 items, each rated on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The total score was used for the current study

with higher scores reflecting higher levels of acculturative stress. The RASI has been found to have moderately strong internal reliability with a Cronbach's alpha = .85 (Miller, Kim, & Benet-Martínez, 2011). The Cronbach's alpha for the total score of the RASI in the current sample was .88.

Daily Life Experiences Scale (DLE). The frequency of discriminatory experiences due to race was assessed with the Spanish DLE; a subscale of the Racism and Life Experience Scale (Mayoral, Underwood, Laca, & Mejía, 2013). The DLE assesses the frequency daily hassles with a 6-point scale (0 = *never* to 5 = *once a week or more*). Respondents indicate how often experiences occurred in the past year "because of your race." An exploratory study assessing the reliability of the DLE (Evans, 2011) suggested four distinct components: Invisible/Outsider, Criminal, Harassed, and Unintelligent. Total scores are calculated by averaging the item scores, with greater scores reflecting greater experiences of racism. The DLE has been found to have with excellent internal validity (α = .94) (Sellers, Copeland-Linder, Martin, & L'Heureux, 2006) and good internal reliability with a Cronbach's alpha = .75-.84 (Evans, 2011). The Cronbach's alpha for the Total Score of the DLE in the current sample was .94.

Demographic Items. Several demographic items were collected including: sex, age, marital status, family income, age of arrival in the United States, highest level of education, current employment status, country of origin.

Procedure

This study was approved by the Virginia Commonwealth University Internal Review Board. Participants recruited for the study were first screened for eligibility criteria. Participants who meet criteria were provided a consent form for the survey. Upon completion of the consent form, participants completed the questionnaires and demographic information. After completion

of the survey, participants were paid an incentive of $5 cash.

Data Analysis Plan

Preliminary Analyses. Prior to conducting the primary statistical analyses to assess the study's hypotheses, descriptive statistics (i.e., means, standard deviations, frequencies, and percentages) of participants' mental health, physical health, level of social support, and level of religiosity, level of discrimination, enculturation, and acculturative stress were computed. Based on the clinical cutoff scores empirically derived by scale developers, the percentages of participants that report clinically significant scores on the anxiety and depression subscales were reported.

Normality tests (i.e., skewness and kurtosis) were conducted to determine whether the scales and subscales are normally distributed. Critical values of 2.0 were used to identify variables that are skewed or kurtotic. Data were checked for multicollinearity via correlation coefficients among all independent variables (with a goal $r < .70$ among all predictors). To examine bivariate correlations among discrimination experiences, depression, anxiety, physical health, acculturative stress, social support, enculturation, and religiosity, a correlation matrix was created.

Four meditational models were developed using the PROCESS macro (Hayes, 2014) to examine direct and indirect effects using 5000 bootstrap samples. In the two, acculturative stress was specified to lead to depression or anxiety symptoms, which were then specified to lead to physical health (Figure 2).

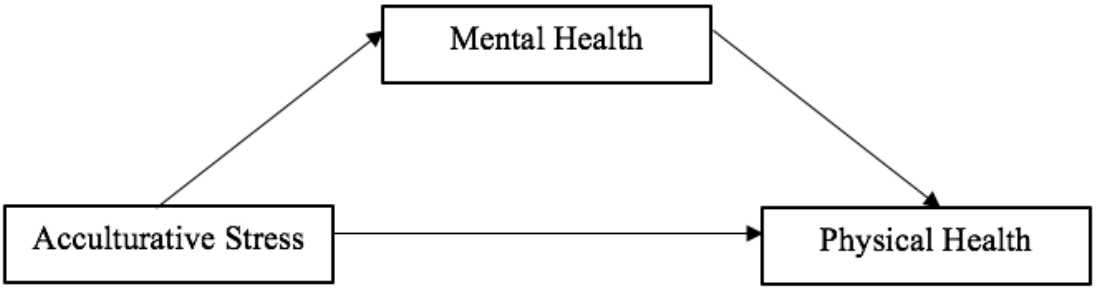


Figure 2. Mental health as a mediator of the relationship between acculturation stress and physical health.

This same statistical procedure was performed for discrimination as the initial predictor variable (Figure 3).

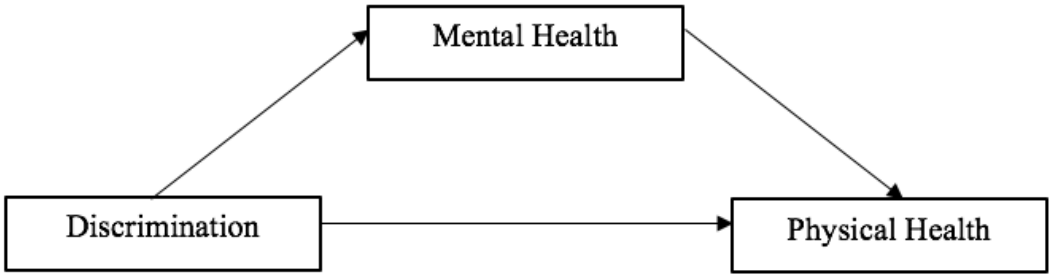


Figure 3. Mental health as a mediator of the relationship between discrimination and physical health.

Subsequently, these four meditational models were expanded to moderated mediations (producing up to twelve moderated mediation models) with the PROCESS macro. The four mediations (for acculturation stress and discrimination) were examined differentially as a function of participants' level of social support (Figures 4-5).

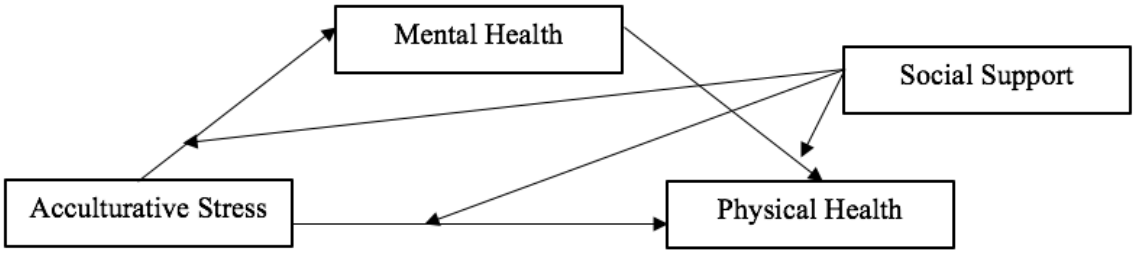


Figure 4: Social support as a moderator of the relationships among mental health, acculturative stress and physical health.

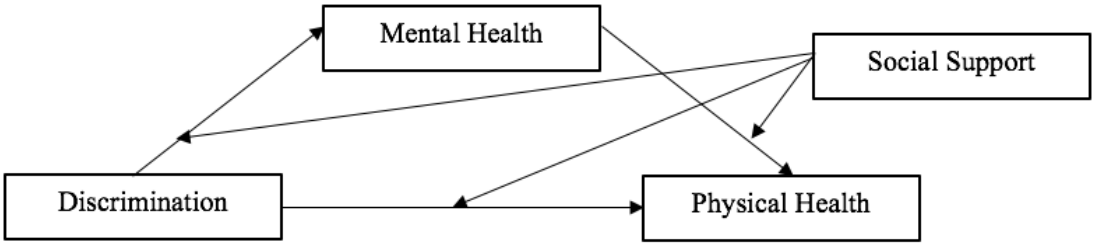


Figure 5: Social support as a moderator of the relationships among discrimination, mental health, and physical health.

Additionally, four similar moderated mediations were run with religiosity instead of social support as the moderator (see Figures 6-7).

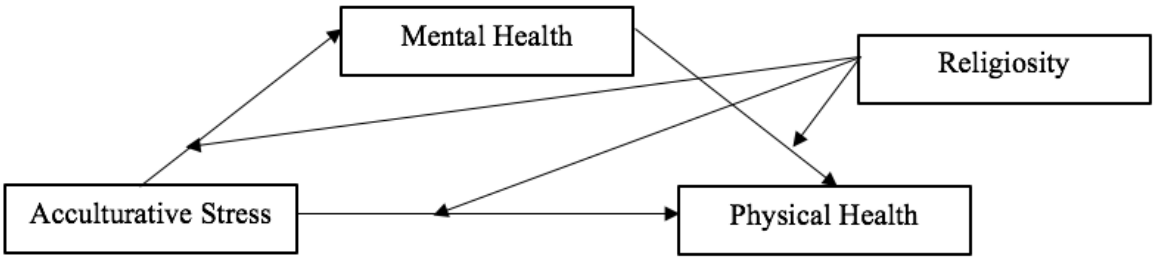


Figure 6: Religiosity as a moderator of the relationships among acculturative stress, mental health, and physical health.

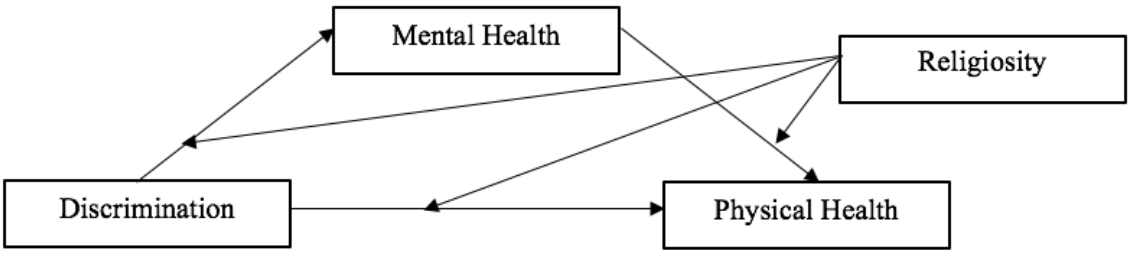


Figure 7: Religiosity as a moderator of the relationships among discrimination, mental health, and physical health.

Finally, four similar moderated mediations were run with enculturation (see Figures 8-9).

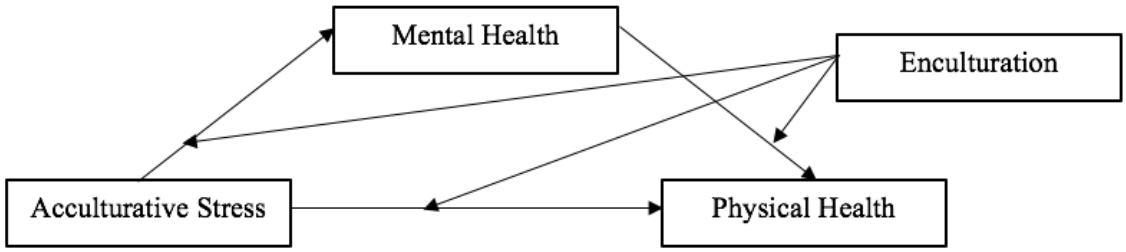


Figure 8: Enculturation as a moderator of the relationships among acculturative stress, mental health, and physical health.

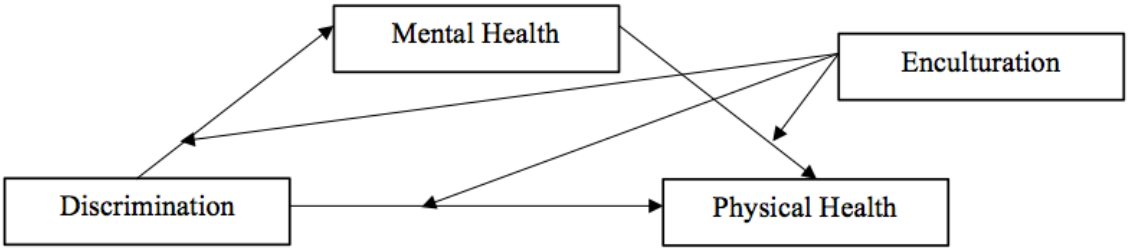


Figure 9: Enculturation as a moderator of the relationships among discrimination, mental health, and physical health.

Power Analysis

Given the difficulty for assessing power in moderated mediation models, a power analysis was performed using G*Power 3.1 to provide an approximate estimate of power with the current sample size of 204 participants (with a regression containing five predictors and one criterion variable, the largest number of predictors in any regression in the PROCESS macro). With 80% power (1 - β), the sample of 204 participants generated enough power to uncover all small-sized, medium-sized, and large-sized effects $\geq f^2 = .06$.

Results

Data Cleaning and Normality

A multi-step data checking and cleaning process occurred. Given that the survey was paper-based, two research assistants entered all questionnaire data. Each research assistant entered the data into a different file. The two files were compared to each other using a computer program. The program constructs a table of differences if the values of any two cells across files

are different in any way. The differences between files were checked by a third research assistant reviewing the original paper-based surveys. The two files were once again run through the software which produced no differences between files. A final cleaned data file was imported to SPSS for the analysis.

Normality and multicollinearity. Skewness and kurtosis tests were conducted to determine whether the primary study scales were normally distributed. Critical values of 2.0 identified skewed or kurtotic variables (see Table 5).

Table 5. *Skewness and Kurtosis*

Variable	Skewness	Kurtosis
Depression	1.44	1.67
Anxiety	1.39	1.51
Social Support	-.14	-.60
Physical Health	-.50	-.84
Religiosity	-.35	-1.03
Discrimination	1.93	4.13
Acculturative Stress	.28	-.33
Enculturation	-1.53	2.77

Although variables were below the 2.0 cutoff in terms of skewness, two variables were kurtotic: discrimination (4.13) and enculturation (2.77). Given that multivariate analyses, particularly with large sample sizes, are robust to moderate deviations from normality, it was decided to retain discrimination and enculturation in their original form, particularly in an effort to enhance interpretability of the study's findings.

Table 6. *Overall Correlation Matrix*

	1	2	3	4	5	6	7	8	9
1. Years in US									
2. Gender	-.148*								
3. Depression	-.094	.116							
4. Anxiety	-.097	.126	.658**						
5. Social Support	.150*	-.178*	-.363**	-.330**					
6. General Health	-.011	-.131	-.454**	-.418**	.301**				
7. Religiosity	.116	.165*	-.04	.018	.139*	.031			
8. Discrimination	.004	.125	.281**	.239**	-.434**	-.190**	-.030		

9. Acculturative Stress	-.051	.075	.131	.160*	-.301**	-.215**	.100	.517**	
10. Enculturation	.142*	.091	-.233**	-.192**	.173*	.132	.040	-.103	-.060

Note. *p <.05. **p <.01.

In the correlation matrix (Table 6), most of the variables were associated with each other as would be expected. However, religiosity was only correlated with social support and at a small effect size. Interestingly, acculturative stress was not correlated with depression, and enculturation was only correlated at a small size effect with depression, anxiety, and social support, but not with any other variables. Within the current sample, men had lived longer in the U.S. and reported higher levels of social support. Women reported higher rates of religiosity.

Outliers. The database was examined for univariate and multivariate. A cutoff point of 3.0 was used to identify outliers by converting total scale scores to z-scores. Univariate outliers identified in the sample were few (approximately 1% or 2% of the total sample), and not very extreme (all below 5.0). All data analyzed were retained, consistent with recommendations by Cohen et al. (2003).

Descriptive Statistics

The descriptive statistics (i.e., means, standard deviations) of participants' mental health, physical health, level of social support, level of religiosity, level of discrimination, level of acculturative stress and enculturation appear in Table 7.

Table 7. *Means and Standard Deviations for Study Variables.*

Variable	Mean (SD)	Range
Depression	4.80 (5.38)	-.03 - 24
Anxiety	4.62 (5.12)	0 - 21
Social Support	36.67 (7.02)	17 - 48
Physical Health	52.19 (18.13)	8.33 – 83.33
Religiosity	33.53 (11.81)	10 - 50
Discrimination	20.61 (10.19)	7.91- 65
Acculturative Stress	39.97 (13.72)	15 - 75
Enculturation	4.40 (.70)	1 - 5.01

Note. Depression's lowest value was -.03, which reflects the imputed score for a participant who had a missing value on at least one of the items but likely would have scored 0.

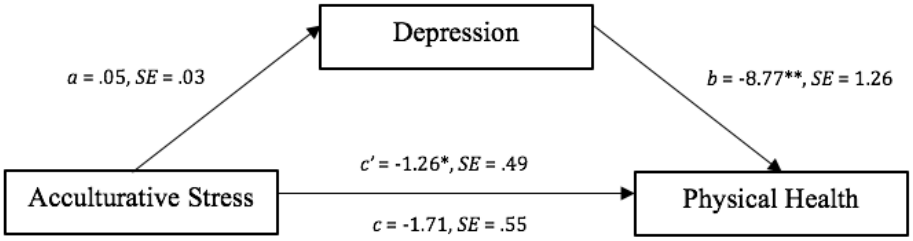
Based on the clinical cutoff item total of 5 for the PHQ-9 (Kroenke, Spitzer, & Williams, 2001) 37.75% participants met or surpassed threshold for clinically significant depression symptoms, with 21.57% participants with minimal symptoms (total score 5-9), 9% with mild symptoms (total score 10-14), 5% with moderate symptoms (total score 15-19), and 2% with severe symptoms (total score 20+). Concerning anxiety, 37.75% of participants met or surpassed threshold for clinically significant anxiety symptoms (cut off score of 5) (Spitzer, Kroenke, Williams, & Löwe, 2006), with 22.10% participants with mild symptoms (total score 5-9), 9% participants with moderate symptoms (total score 10-14) and 7% participants with severe symptoms (total score 15+).

Mediations

Four meditational models were run with the Hayes PROCESS macro (Hayes, 2014) to examine patterns of relationships among acculturative stress, discrimination, depression, anxiety, and physical health.

In the first mediational model (Figure 10), acculturative stress was specified to have a direct effect on physical health, as well as an indirect effect through depressive symptoms, using 5000 bootstrap samples. The direct path from acculturative stress to depression symptoms (b = .05, p = .063) was not statistically significant. The direct path from acculturative stress to physical health (b = -1.71, p = .002) was statistically significant as well as the direct path from depression to physical health (b = -8.77, p < .001). The direct path from acculturative stress to physical health while controlling for depression (b = -1.26, p = .012) was statistically significant. No indirect relationship was found from acculturative stress to physical health through

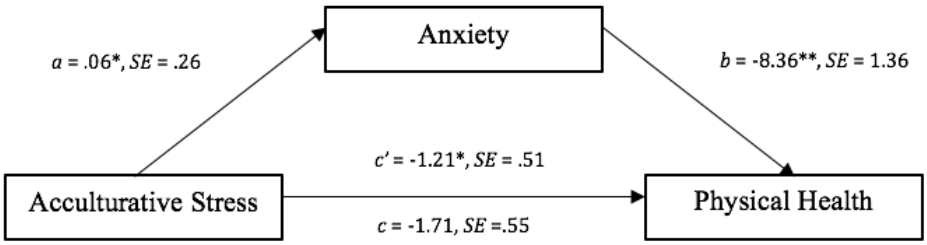
depression (b = -.45, 95% CI [-1.04, .04]). Because there was no significant indirect effect, no moderated mediation models were run.



Note. The c path represents the total effect of Acculturative Stress on Physical Health. The c' path represents the effect of Acculturative Stress on Physical Health after controlling for Depression.

Figure 10. Statistical representation of Depression symptoms as a mediator of the relationship between Acculturation Stress and Physical Health.

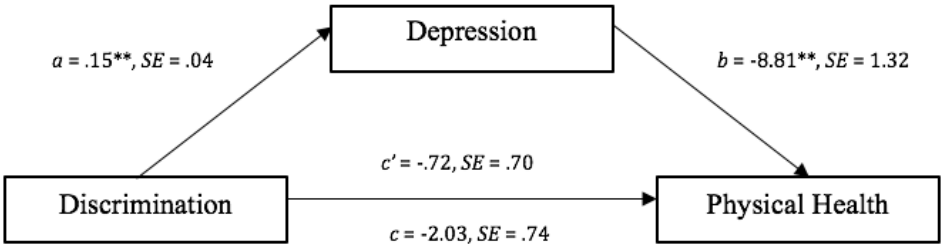
In the second simple mediation model (Figure 11), acculturative stress was specified to have a direct effect on physical health, as well as indirect effect through anxiety symptoms, using 5000 bootstrap samples. The direct path from acculturative stress to anxiety symptoms (b = .06, p = .022) as well as the direct path from anxiety to physical health (b = -8.36, p < .001) was statistically significant. The direct path from acculturative stress to physical health (b = -1.71, p = .002) was statistically significant as before. Further, the indirect effect of acculturative stress on physical health through anxiety was statistically significant (b = -.50, 95% CI [-1.07, -.01]), indicating a partial mediation because the direct path from acculturative stress to physical health (c' path) was still statistically significant in the model (b = -1.21, p = .018).



Note. The c path represents the total effect of Acculturative Stress on Physical Health. The c' path represents the effect of Acculturative Stress on Physical Health after controlling for Anxiety.

Figure 11. Statistical representation of Anxiety symptoms as a mediator of the relationship between Acculturation Stress and Physical health.

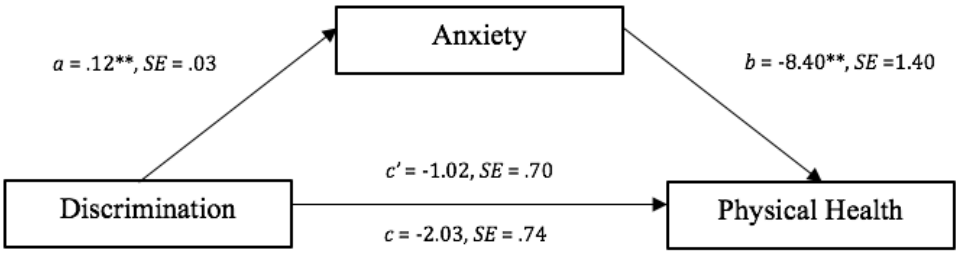
In the third simple mediation model (Figure 12), discrimination was specified to have a direct effect on physical health, as well as indirect effect through depression symptoms, using 5000 bootstrap samples. The direct path from discrimination to depression symptoms (b = .15, p < .001) as well as the direct path from depression to physical health (b = -8.81, p < .001) was statistically significant. The direct path from discrimination to physical health (b = -2.03, p = .007) was statistically significant. Further, the indirect effect of discrimination on physical health through depression was statistically significant (b = 1.30, 95% CI [-2.45, -.55]), indicating a full mediation because the direct path from discrimination to physical health (c' path) was not statistically significant in the model (b = -.72, p = .303).



Note. The c path represents the total effect of Discrimination on Physical Health. The c' path represents the effect of Discrimination on Physical Health after controlling for Depression.

Figure 12. Statistical representation of Depression symptoms as a mediator of the relationship between Discrimination and Physical Health.

In the fourth simple mediation model (Figure 13), discrimination was specified to have a direct effect on physical health, as well as indirect effect through anxiety symptoms, using 5000 bootstrap samples. The direct path from discrimination to anxiety symptoms (b = .12, p < .001) as well as the direct path from anxiety to physical health (b = -8.40, p < .001) was statistically significant. The direct path from discrimination to physical health (b = -2.03, p = .007) was statistically significant as before. Further, the indirect effect of discrimination on physical health through anxiety was statistically significant (b = -1.0, 95% CI [-1.97, -.36]), indicating a full mediation because the direct path from discrimination to physical health (c' path) was not statistically significant in the model (b = -1.02, p = .148).



Note. The c path represents the total effect of Discrimination on Physical Health. The c' path represents the effect of Discrimination on Physical Health after controlling for Anxiety.

Figure 13. Statistical representation of Anxiety symptoms as a mediator of the relationship between Discrimination and Physical Health.

Moderated Mediations

Follow-up analyses were conducted to examine whether the three significant mediational models [(a) acculturative stress, anxiety, general health; (b) discrimination, depression, general health; and (c) discrimination, anxiety and general health] found above were moderated by participants' levels of social support, religiosity and enculturation. Thus, the three meditational models were each expanded to moderated mediations (producing nine moderated mediation models) with PROCESS macro.

Acculturative stress as predictor and social support as moderator. In order to determine whether the mediational effect from acculturative stress through anxiety symptoms to physical health differed as a function of participants' level of social support (i.e., moderated mediation), a conditional process model was conducted. The overall model predicting physical health was significant, $F(3, 200) = 8.61$, $p < .001$, $R^2 = .11$. Table 8 presents the *b*-weights, standard errors, *p*-values and 95% bias-corrected bootstrap confidence intervals for each of the paths included in the moderated-mediation model. There was not a significant direct effect of acculturative stress to anxiety (a path) when social support ($b = .03$, $p = .337$) and the interaction were included in the model. In this model, social support was negatively associated with anxiety symptoms ($b = -.23$, $p < .001$). The acculturative stress x social support interaction with anxiety symptoms as the criterion variable was not significant ($b = .00$, $p = .554$). There was a direct effect of anxiety symptoms (b path), which was negatively associated with physical health ($b = -9.04$, $p < .001$) when social support, acculturative stress, and the interactions were included in the model. Acculturative stress was not significant (c' path) in this model ($b = -.72$, $p = .168$), although social support was ($b = 2.70$, $p = .011$). The interaction between anxiety symptoms x social support was significant ($b = -.55$, $p = .004$), while acculturative stress x social support was not significant ($b = .02$, $p = .825$).

Table 8. *Model Summary for the Association between Acculturative Stress and Physical Health through Anxiety by Social Support (N = 204).*

	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
Model 1: DV = Anxiety		
Acculturative Stress (*a path*)	.03(.03)	-.03 to .08
Social Support	-.23(.05)***	-.33 to -.13
Acculturative Stress x Social Support	.00 (.00)	-.01 to .01
R^2	.11***	
Model 2: DV = Physical Health		
Anxiety (*b path*)	-9.04(1.50)***	-12.01 to -6.08

Acculturative Stress (*c' path*)	-.72(.52)	-1.73 to .30
Social Support	2.70(1.06)*	.62 to 4.78
Anxiety x Social Support	-.55(.19)**	-.92 to -.18
Acculturative Stress x Social Support	.02(.07)	-.12 to -.16
R^2	.25***	

Note. 5000 bootstrap samples. DV = dependent variable. *$p < .05$; **$p < .01$; ***$p < .001$.

Follow-up analyses to the moderated-mediation analysis examined the conditional direct and indirect effects at different levels of the moderator (social support). There were no conditional direct effects of acculturative stress onto physical health by social support (Table 9). Similarly, there were no conditional indirect effects of acculturative stress onto physical health through anxiety symptoms (Table 10). This pattern of findings is not reflective of a moderated mediation.

Table 9. *Conditional Direct Effects of Acculturative Stress on Physical Health via Anxiety at Levels of Social Support* (*N* =204)

Social Support Percentile Range	Effect	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
10th	-.85	.79	-2.40 to .70
25th	-.80	.64	-2.07 to .46
50th	-.73	.52	-1.75 to .29
75th	-.63	.66	-1.92 to .66
90th	-.57	.86	-2.26 to 1.13

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

Table 10. *Conditional Indirect Effects of Acculturative Stress on Physical Health via Anxiety at Levels of Social Support* (*N = 204*)

Social Support Percentile Range	Effect	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
10th	-.03	.24	-.57 to .41
25th	-.08	.26	-.66 to .39
50th	-.21	.28	-.84 to .31
75th	-.43	.43	-1.34 to .33
90th	-.62	.65	-2.12 to .51

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

Acculturative stress as predictor and religiosity as moderator. In order to determine whether the mediational effect from acculturative stress through anxiety symptoms to physical health differed as a function of participants' level of religiosity (i.e., moderated mediation), a conditional process model was conducted. The overall model predicting physical health was not significant, $F(3, 200) = 1.87$, $p = .136$, $R^2 = .027$. Table 11 presents the *b*-weights, standard errors, *p*-values and 95% bias-correct bootstrap confidence intervals for each of the paths included in the moderated-mediation model. There was a significant positive direct effect of acculturative stress to anxiety (a path) when religiosity and the interaction were included in the model ($b = .06$, $p = .037$). In this model, religiosity was not associated with anxiety symptoms ($b = .00$, $p = .894$). The acculturative stress x religiosity interaction with anxiety symptoms as the criterion variable was not significant ($b = .00$, $p = .561$). There was also a direct effect of anxiety symptoms (b path), which was negatively associated with physical health ($b = -8.57$, $p < .001$) when religiosity, acculturative stress, and the interactions were included in the model. Acculturative stress was significant (c' path) in this model ($b = -1.49$, $p = .005$), although religiosity was not significant ($b = .82$, $p = .178$). The interaction between anxiety symptoms x religiosity was not significant ($b = .10$, $p = .467$), and similarly acculturative stress x religiosity was also not significant ($b = .09$, $p = .058$).

Table 11. *Model Summary for the Association between Acculturative Stress and Physical Health through Anxiety by Religiosity (N = 204).*

	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
Model 1: DV = Anxiety		
Acculturative Stress *(a path)*	.06 (.03)*	-.00 to .11
Religiosity	.00(.03)	-.06 to .07
Acculturative Stress × Religiosity	.00(.00)	-.00 to .01
R^2	.03	
Model 2: DV = Physical Health		
Anxiety *(b path)*	-8.57 (1.36)**	-11.26 to -5.89

Acculturative Stress *(c' path)*	-1.49(.52)*	-2.51 to -.47
Religiosity	.82(.61)	-.38 to 2.02
Anxiety × Religiosity	.10(.14)	-.17 to .37
Acculturative Stress × Religiosity	.09(.05)	-.00 to .18
R^2	.22**	

Note. 5000 bootstrap samples. DV = dependent variable. *$p < .05$; **$p < .01$; ***$p < .001$.

Follow-up analyses to the moderated-mediation analysis examined the conditional direct and indirect effects at different levels of the moderator (religiosity). There were conditional direct effects of acculturative stress onto physical health by religiosity (Table 12). Specifically, experiences of acculturative stress led to general health when religiosity was low to moderate (10^{th} – 50^{th} percentile), but not when religiosity was high (75^{th}-90^{th} percentile). A conditional indirect effect of acculturative stress onto physical health through anxiety symptoms was also observed: anxiety symptoms was a significant mediator of acculturative stress in predicting physical health when religiosity was moderate to very high (50^{th} – 90^{th} percentile), but not when religiosity was low (10^{th} - 25^{th} percentile; Table 13).

Table 12. *Conditional Direct Effects of Acculturative Stress on Physical Health via Anxiety at Levels of Religiosity* (*N =204*)

Religiosity Percentile Range	Effect	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
10^{th}	-3.06*	1.05	-5.14 to -.98
25^{th}	-2.34*	.75	-3.82 to -.87
50^{th}	-1.36*	.51	-2.37 to -.35
75^{th}	-.56	.64	-1.82 to .71
90^{th}	-.20	.77	-1.71 to 1.32

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

Table 13. *Conditional Indirect Effects of Acculturative Stress on Physical Health via Anxiety at Levels of Religiosity* (*N = 204*)

Religiosity Percentile Range	Effect	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
10^{th}	-.33	.66	-2.00 to .65

25th	-.41	.45	-1.50 to .28
50th	-.49*	.28	-1.11 to -.02
75th	-.53*	.30	-1.23 to -.03
90th	-.55*	.36	-1.48 to -.00

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

This pattern of findings is reflective of a moderated mediation. Specifically, anxiety symptoms mediated the effect of acculturative stress on physical health when participants had moderate to very high levels of religiosity (50^{th} - 90^{th} percentile), but not when participants had low levels of religiosity (10^{th} - 25^{th} percentile). Further, this mediational effect increased linearly as religiosity increased.

Acculturative stress as predictor and enculturation as moderator. In order to determine whether the mediational effect from acculturative stress through anxiety symptoms to physical health differed as a function of participants' level of enculturation (i.e., moderated mediation), a conditional process model was conducted. The overall model predicting physical health was significant, $F(3, 200) = 4.50$, $p = .004$, $R^2 = .06$. Table 14 presents the *b*-weights, standard errors, *p*-values and 95% bias-correct bootstrap confidence intervals for each of the paths included in the moderated-mediation model. There was a significant positive direct effect of acculturative stress to anxiety (a path) when enculturation and the interaction were included in the model ($b = .05$, $p = .035$). In this model, enculturation was negatively associated with anxiety symptoms ($b = -1.39$, $p = .006$). The acculturative stress x enculturation interaction with anxiety symptoms as the criterion variable was not significant ($b = -.03$, $p = .344$). There was a direct effect of anxiety symptoms (b path), which negatively associated with physical health ($b = -8.11$, $p < .001$) when enculturation, acculturative stress, and the interactions were included in the model. Acculturative stress was significant (c' path) in this model ($b = -1.18$, $p = .022$), although

enculturation was not significant (b = 8.22, p = .421). The interaction between anxiety symptoms x enculturation was not significant (b = .13, p = .953), similarly acculturative stress x enculturation was also not significant (b = .38, p = .587).

Table 14. *Model Summary for the Association between Acculturative Stress and Physical Health through Anxiety by Enculturation (N = 204).*

	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
Model 1: DV = Anxiety		
Acculturative Stress (*a path*)	.05 (.03)*	.00 to .10
Enculturation	-1.39(.50)	-2.38 to -.40
Acculturative Stress x Enculturation	-.03(0.03)	-.10 to .03
R^2	.06*	
Model 2: DV = Physical Health		
Anxiety *(b path)*	-8.11 (1.40)***	-10.86 to -5.36
Acculturative Stress (*c′ path*)	-1.18 (.51)*	-2.19 to -.17
Enculturation	8.22 (10.20)	-11.89 to 28.33
Anxiety x Enculturation	.13 (2.19)	-4.19 to 4.45
Acculturative Stress x Enculturation	.38 (.70)	-1.00 to 1.76
R^2	.20***	

Note. 5000 bootstrap samples. DV = dependent variable. *p < .05; **p < .01; ***p < .001.

Follow-up analyses to the moderated-mediation analysis examined the conditional direct and indirect effects at different levels of the moderator (enculturation). There were conditional direct effects of acculturative stress onto physical health by enculturation (Table 15). Specifically, experiences of acculturative stress led to general health when enculturation was moderately low and moderate (25^{th} – 50^{th} percentile), but not when enculturation was either low or high (10^{th} ; 75^{th} – 90^{th} percentile). A conditional indirect effect of acculturative stress onto physical health through anxiety symptoms was also observed: anxiety symptoms was a significant mediator of acculturative stress in predicting physical health when enculturation was moderately low (25^{th} percentile), but not when enculturation was low, moderate or high (10^{th}, 75^{th} -90^{th} percentile; Table 16).

Table 15. *Conditional Direct Effects of Acculturative Stress on Physical Health via Anxiety at Levels of Enculturation* (*N =204*)

Enculturation Percentile Range	Effect	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
10th	-1.59	.89	-3.34 to .17
25th	-1.29*	.54	-2.36 to -.22
50th	-1.11*	.53	-2.16 to -.06
75th	-.95	.67	-2.28 to .37
90th	-.95	.67	-2.28 to .38

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

Table 16. *Conditional Indirect Effects of Acculturative Stress on Physical Health via Anxiety at Levels of Enculturation* (*N = 204*)

Enculturation Percentile Range	Effect	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
10th	-.73	.52	-2.06 to .07
25th	-.51*	.30	-1.18 to -.01
50th	-.39	.26	-.96 to .06
75th	-.28	.31	-.93 to .31
90th	-.28	.31	-.93 to .31

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

This pattern of findings is reflective of a moderated mediation. Specifically, anxiety symptoms mediated the effect of acculturative stress on physical health when participants had moderately low to moderate levels of enculturation (25th - 50th percentile), but not when participants had low or high levels of enculturation (10th , 75th - 90th percentile). Further, this meditational effect increased linearly as enculturation increased, and the direct and indirect effects likely would have been present at the 10th percentile as well, but the confidence intervals of the *b*-weights were extremely high, obscuring the potential effects.

Discrimination as a predictor and social support as moderator. In order to determine whether the mediational effect from discrimination through depression symptoms to physical health differed as a function of participants' level of social support (i.e., moderated mediation), a

conditional process model was conducted. The overall model predicting physical health was significant, $F(3, 200) = 12.03$, $p < .001$, $R^2 = .15$. Table 17 presents the *b*-weights, standard errors, *p*-values and 95% bias-correct bootstrap confidence intervals for each of the paths included in the moderated-mediation model. There was not a significant direct effect of discrimination to depression (a path) when social support and the interaction were included in the model ($b = .06$, $p = .211$).In this model, social support was negatively associated with depression symptoms ($b = -.23$, $p < .001$). The discrimination x social support interaction with depression symptoms as the criterion variable was not significant ($b = -.00$, $p = .43$). There was a direct effect of depression symptoms (b path), which negatively associated with physical health ($b = -9.16$, $p < .001$) when social support, discrimination, and the interactions were included in the model. Discrimination was not significant (c' path) in this model ($b = -.97$, $p = .29$), similarly neither was social support ($b = 1.96$, $p = .082$). The interaction between depression symptoms x social support was not significant ($b = -.25$, $p = .215$), similarly discrimination x social support was also not significant ($b = -.14$, $p = .173$).

Table 17. *Model Summary for the Association between Discrimination and Physical Health through Depression by Social Support (N = 204).*

	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
Model 1: DV = Depression		
Discrimination *(a path)*	.06 (.05)	-.03 to .15
Social Support	-.23 (.06)***	-.34 to -.12
Discrimination × Social Support	-.00 (.01)	-.01 to .01
R^2	.15***	
Model 2: DV = Physical Health		
Depression *(b path)*	-9.16 (1.58)***	-12.27 to -6.04
Discrimination *(c' path)*	-.97 (.91)	-2.76 to .83
Social Support	1.96 (1.12)	-.25 to 4.17
Depression × Social Support	-.25 (.20)	-.66 to .15
Discrimination × Social Support	-.14 (.10)	-.34 to .06
R^2	.25***	

Note. 5000 bootstrap samples. DV = dependent variable. *$p < .05$; **$p < .01$; ***$p < .001$.

Follow-up analyses to the moderated-mediation analysis examined the conditional direct and indirect effects at different levels of the moderator (social support). There were no conditional direct effects of discrimination onto physical health by social support (Table 18). A conditional indirect effect of discrimination onto physical health through depression symptoms was observed, however: depression symptoms was a significant mediator of discrimination in predicting physical health when social support was low (10^{th} percentile), but not when social support was moderately low to very high (25^{th} to 90^{th} percentile; Table 19).

Table 18. *Conditional Direct Effects of Discrimination on Physical Health via Depression at Levels of Social Support* (*N* =204)

Social Support Percentile Range	Effect	Estimate (SE)	95% Bias-corrected bootstrap confidence interval
10^{th}	.25	.82	-1.37 to 1.87
25^{th}	-.17	.74	-1.63 to 1.29
50^{th}	-.87	.87	-2.59 to .85
75^{th}	-1.71	1.31	-4.29 to .87
90^{th}	-2.27	1.66	-5.55 to 1.01

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

Table 19. *Conditional Indirect Effects of Discrimination on Physical Health via Depression at Levels of Social Support* (*N = 204*)

Social Support Percentile Range	Effect	Estimate (SE)	95% Bias-corrected bootstrap confidence interval
10^{th}	-.65*	.44	-1.75 to -.00
25^{th}	-.63	.41	-1.59 to .01
50^{th}	-.55	.45	-1.61 to .15
75^{th}	.40	.69	-2.10 to .78
90^{th}	-.26	.97	-2.62 to 1.44

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

This pattern of findings is reflective of a moderated mediation. Specifically, depression symptoms mediated the effect of discrimination on physical health when participants had low levels of social support (10^{th} percentile), but not when participants had moderately low to very high levels of social support (25^{th} - 90^{th} percentile).

Discrimination as predictor and religiosity as moderator. In order to determine whether the mediational effect from discrimination through depression symptoms to physical health differed as a function of participants' level of religiosity (i.e., moderated mediation), a conditional process model was conducted. The overall model predicting physical health was significant, $F(3, 200) = 5.99$, $p < .001$, $R^2 = .083$. Table 20 presents the *b*-weights, standard errors, *p*-values and 95% bias-correct bootstrap confidence intervals for each of the paths included in the moderated-mediation model. There was a significant positive direct effect of discrimination to depression (a path) when religiosity and the interactions were included in the model ($b = .14$, $p < .001$). In this model, religiosity was not associated with depression symptoms ($b = -.01$, $p = .688$). The discrimination x religiosity interaction with depression symptoms as the criterion variable was not significant ($b = .00$, $p = .44$). There was also a direct effect of depression symptoms (b path), which negatively associated with physical health ($b = -8.86$, $p < .001$) when religiosity, discrimination and their interactions were included in the model. Discrimination was not significant (c' path) in this model ($b = -.74$, $p = .298$), similarly neither was religiosity ($b = .12$, $p = .835$) The interaction between depression symptoms x religiosity was not significant ($b = -.02$, $p = .895$), similarly when discrimination x religiosity was not significant ($b = .03$, $p = .648$).

Table 20. *Model Summary for the Association between Discrimination and Physical Health through Depression by Religiosity (N = 204).*

	Estimate (*SE*)	95% Bias-corrected bootstrap confidence

		interval
Model 1: DV = Depression		
Discrimination (*a path*)	.14(.04)**	.07 to .22
Religiosity	-.01 (.03)	-.07 to .05
Discrimination x Religiosity	.00 (.00)	-.00 to .01
R^2	.08***	
Model 2: DV = Physical Health		
Depression (*b path*)	-8.86 (1.35)***	-11.51 to -6.20
Discrimination (*c′ path*)	-.74 (.71)	-2.14 to .66
Religiosity	.12 (.59)	-1.03 to 1.28
Depression x Religiosity	-.02 (.12)	-.25 to .22
Discrimination x Religiosity	.03 (.06)	-.09 to .15
R^2	.21***	

Note. 5000 bootstrap samples. DV = dependent variable. *$p < .05$; **$p < .01$; ***$p < .001$.

Follow-up analyses to the moderated-mediation analysis examined the conditional direct and indirect effects at different levels of the moderator (religiosity). There were no conditional direct effects of discrimination onto physical health by religiosity (Table 21). A conditional indirect effect of discrimination onto physical health through depression symptoms was observed: depression symptoms was a significant mediator of discrimination in predicting physical health when religiosity was moderately low to very high (25^{th} – 90^{th} percentile), but not when religiosity was low (10^{th} percentile; Table 22).

Table 21. *Conditional Direct Effects of Discrimination on Physical Health via Depression at Levels of Religiosity* (*N =204*)

Religiosity Percentile Range	Effect	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
10^{th}	-1.22	1.32	-3.82 to 1.38
25^{th}	-1.00	.95	-2.87 to .87
50^{th}	-.70	.71	-2.10 to .70
75^{th}	-.45	.91	-2.25 to 1.34
90^{th}	-.34	1.08	-2.47 to 1.78

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

Table 22. *Conditional Indirect Effects of Discrimination on Physical Health via Depression at Levels of Religiosity* (*N = 204*)

Religiosity Percentile Range	Effect	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
10th	-.87	.94	-3.53 to .30
25th	-1.05*	.68	-2.7 to -.06
50th	-1.31*	.51	-2.37 to -.45
75th	-1.53*	.70	-3.23 to -.58
90th	-1.63*	.87	-3.84 to -.51

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

This pattern of findings is reflective of a moderated mediation. Specifically, depression symptoms mediated the effect of discrimination on physical health when participants had moderately low to very high levels of religiosity (25^{th} - 90^{th} percentile), but not when participants had low levels of religiosity (10^{th} percentile). Further, this mediational effect increased linearly as religiosity increased.

Discrimination as predictor and enculturation as moderator. In order to determine whether the mediational effect from discrimination through depression symptoms to physical health differed as a function of participants' level of enculturation (i.e., moderated mediation), a conditional process model was conducted. The overall model predicting physical health was significant, $F(3, 200) = 9.23$, $p < .001$, $R^2 = .12$. Table 23 presents the *b*-weights, standard errors, *p*-values and 95% bias-correct bootstrap confidence intervals for each of the paths included in the moderated-mediation model. There was a significant positive direct effect of discrimination to depression (a path) when enculturation and the interaction were included in the model ($b = .13$, $p < .001$). In this model, enculturation was negatively associated with depression symptoms ($b = -1.58$, $p = .002$). The discrimination x enculturation interaction with depression symptoms as the criterion variable was not significant ($b = -.018$, $p = .703$). There was a direct effect of depression symptoms (b path), which negatively associated with physical health ($b = -8.78$, $p <$

.001) when enculturation, discrimination, and the interactions were included in the model. Discrimination was not significant (c' path) in this model (b = -.56, p = .433), similarly neither was enculturation (b = 4.49, p = .657). The interaction between depression symptoms x enculturation was not significant (b = -1.06, p = .563), similarly discrimination x enculturation was not significant (b = 1.15, p = .209).

Table 23. *Model Summary for the Association between Discrimination and Physical Health through Depression by Enculturation (N = 204).*

	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
Model 1: DV = Depression		
Discrimination *(a path)*	.13 (.04)**	.06 to .20
Enculturation	-1.58 (.51)	-2.59 to -.57
Discrimination × Enculturation	-.02 (.05)	-.11 to .07
R^2	.12***	
Model 2: DV = Physical Health		
Depression *(b path)*	-8.78 (1.37)***	-11.49 to -6.07
Discrimination (*c' path*)	-.56 (.71)	-1.96 to .84
Enculturation	4.49(10.09)	-15.41 to 24.40
Depression × Enculturation	-1.06 (1.8)	-4.68 to 2.55
Discrimination × Enculturation	1.15 (.91)	-.65 to 2.94
R^2	.22***	

Note. 5000 bootstrap samples. DV = dependent variable. *p < .05; **p < .01; ***p < .001.

Follow-up analyses to the moderated-mediation analysis examined the conditional direct and indirect effects at different levels of the moderator (enculturation). There were no conditional direct effects of discrimination onto physical health by enculturation (Table 24). Similarly, no conditional indirect effect of discrimination onto physical health through depression symptoms was observed: depression symptoms was a significant mediator of discrimination in predicting physical health at all levels of enculturation (10^{th} – 90^{th} percentile; Table 25).

Table 24. *Conditional Direct Effects of Discrimination on Physical Health via Depression at Levels of Enculturation* (*N =204*)

Enculturation Percentile Range	Effect	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
10th	-1.78	1.1	-3.94 to .38
25th	-.88	.71	-2.28 to .52
50th	-.35	.76	-1.84 to 1.15
75th	.13	.97	-1.78 to 2.04
90th	.13	.97	-1.78 to 2.05

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

Table 25. *Conditional Indirect Effects of Discrimination on Physical Health via Depression at Levels of Enculturation* (*N = 204*)

Enculturation Percentile Range	Effect	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
10th	-1.17*	.73	-3.20 to -.21
25th	-1.18*	.49	-2.32 to -.41
50th	-1.18*	.50	-2.31 to -.38
75th	-1.16*	.63	-2.66 to -.22
90th	-1.16*	.63	-2.66 to -.22

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

This pattern of findings is not reflective of a moderated mediation. Specifically, depression symptoms mediated the effect of discrimination on physical health when participants had all levels of enculturation (10^{th} - 90^{th}).

Discrimination as predictor and social support as moderator. In order to determine whether the mediational effect from discrimination through anxiety symptoms to physical health differed as a function of participants' level of social support (i.e., moderated mediation), a conditional process model was conducted. The overall model predicting physical health was significant, $F(3, 200) = 9.31$, $p < .001$, $R^2 = .12$. Table 26 presents the *b*-weights, standard errors, *p*-values and 95% bias-correct bootstrap confidence intervals for each of the paths included in the moderated-mediation model. There was not a significant positive direct effect of

discrimination to anxiety (a path) when social support and the interaction were included in this model (b = .04, p = .385). In this model, social support was negatively associated with anxiety symptoms (b = -.21, p < .001). The discrimination x social support interaction with anxiety symptoms as the criterion variable was not significant (b = -.00, p = .457). There was also a direct effect of anxiety symptoms (b path), which negatively associated with physical health (b = -9.04, p < .001) when social support, discrimination, and the interactions were included in the model. Discrimination was not significant (c' path) in this model (b = -.91, p = .32), although social support was significant (b = 2.67, p = .018). The interaction between anxiety symptoms x social support was significant (b = -.51, p = .008), while discrimination x social support was not significant (b = -.09, p = .374).

Table 26. *Model Summary for the Association between Discrimination and Physical Health through Anxiety by Social Support (N = 204).*

	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
Model 1: DV = Anxiety		
Discrimination *(a path)*	.04 (.05)	-.05 to .13
Social Support	-.21 (.05)**	-.32 to -.10
Discrimination × Social Support	-.00 (.00)	-.01 to .01
R^2	.12***	
Model 2: DV = Physical Health		
Anxiety *(b path)*	-9.04 (1.49)***	-11.98 to -6.10
Discrimination (*c' path*)	-.91 (.91)	-2.7 to .89
Social Support	2.67 (1.12)*	.46 to 4.88
Anxiety × Social Support	-.51 (.19)*	-.89 to -.14
Discrimination × Social Support	-.09 (.10)	-.29 to .11
R^2	.25***	

Note. 5000 bootstrap samples. DV = dependent variable. *p < .05; **p < .01; ***p < .001.

Follow-up analyses to the moderated-mediation analysis examined the conditional direct and indirect effects at different levels of the moderator (social support). There were no conditional direct effects of discrimination onto physical health by social support (Table 27).

Similarly, there were no conditional indirect effects of discrimination onto physical health through anxiety symptoms (Table 28). This pattern of findings is not reflective of a moderated mediation.

Table 27. *Conditional Direct Effects of Discrimination on Physical Health via Anxiety at Levels of Social Support* (*N* =204)

Social Support Percentile Range	Effect	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
10th	-.12	.81	-1.72 to 1.48
25th	-.39	.74	-1.85 to 1.06
50th	-.84	.87	-2.57 to .88
75th	-1.39	1.31	-3.97 to 1.19
90th	1.75	1.66	-5.03 to 1.53

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

Table 28. *Conditional Indirect Effects of Discrimination on Physical Health via Anxiety at Levels of Social Support* (*N = 204*)

Social Support Percentile Range	Effect	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
10th	-.33	.28	-1.11 to .05
25th	-.37	.30	-1.11 to .07
50th	-.36	.40	-1.33 to .30
75th	-.24	.72	-1.73 to 1.22
90th	-.08	1.07	-2.20 to 2.27

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

Discrimination as predictor and religiosity as moderator. In order to determine whether the mediational effect from discrimination through anxiety symptoms to physical health differed as a function of participants' level of religiosity (i.e., moderated mediation), a conditional process model was conducted. The overall model predicting physical health was significant, $F(3, 200) = 6.51$, $p < .001$, $R^2 = .09$. Table 29 presents the *b*-weights, standard errors, *p*-values and 95% bias-correct bootstrap confidence intervals for each of the paths included in the moderated-mediation model. There was a significant positive direct effect of discrimination to anxiety (a path) when religiosity and the interaction were included in the model ($b = .11$, $p =$

.002). In this model, religiosity was not associated with anxiety symptoms (b = .02, p = .569). The discrimination x religiosity interaction with anxiety symptoms as the criterion variable was significant (b = .01, p = .009). There was also a direct effect of anxiety symptoms (b path), which negatively associated with physical health (b = -8.76, p < .001) when religiosity discrimination, and the interactions were included in the model. Discrimination was not significant (c' path) in this model (b = -1.20, p = .096), similarly neither was religiosity (b = .52, p = .397). The interaction between anxiety symptoms x religiosity was not significant (b = .13, p = .356), similarly discrimination x religiosity was not significant (b = .06, p = .33).

Table 29. *Model Summary for the Association between Discrimination and Physical Health through Anxiety by Religiosity (N = 204).*

	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
Model 1: DV = Anxiety		
Discrimination *(a path)*	.11 (.03)*	.04 to .18
Religiosity	.02 (.03)	-.04 to .07
Discrimination × Religiosity	.01 (.00)*	.00 to .01
R^2	.09**	
Model 2: DV = Physical Health		
Anxiety *(b path)*	-8.76 (1.42)***	-11.56 to -5.95
Discrimination *(c' path)*	-1.20 (.72)	-2.62 to .22
Religiosity	.52 (.61)	-.68 to 1.71
Anxiety × Religiosity	.13 (.14)	-.15 to .41
Discrimination × Religiosity	.06 (.06)	-.06 to .18
R^2	.19***	

Note. 5000 bootstrap samples. DV = dependent variable. *p < .05; **p < .01; ***p < .001.

Follow-up analyses to the moderated-mediation analysis examined the conditional direct and indirect effects at different levels of the moderator (religiosity). There were no conditional direct effects of discrimination onto physical health by religiosity (Table 30). A conditional indirect effect of discrimination onto physical health through anxiety symptoms was observed: anxiety symptoms was a significant mediator of discrimination in predicting physical health

when religiosity was moderate to very high (50^{th} – 90^{th} percentile), but not when religiosity was very low to low (10^{th} – 25^{th} percentile; Table 31).

Table 30. *Conditional Direct Effects of Discrimination on Physical Health via Anxiety at Levels of Religiosity* (*N =204*)

Religiosity Percentile Range	Effect	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
10^{th}	-2.26	1.32	-4.87 to .35
25^{th}	-1.78	.95	-3.64 to .09
50^{th}	-1.11	.72	-2.53 to .31
75^{th}	-.57	.95	-2.44 to 1.31
90^{th}	-.33	1.13	-2.55 to 1.90

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

Table 31. *Conditional Indirect Effects of Discrimination on Physical Health via Anxiety at Levels of Religiosity* (*N = 204*)

Religiosity Percentile Range	Effect	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
10^{th}	.30	.71	-1.22 to 1.71
25^{th}	-.35	.49	-1.63 to .32
50^{th}	-1.03*	.42	-1.95 to -.36
75^{th}	-1.41*	.58	-2.86 to -.55
90^{th}	-1.52*	.77	-3.53 to -.40

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

This pattern of findings is reflective of a moderated mediation. Specifically, anxiety symptoms mediated the effect of discrimination on physical health when participants had moderate to high levels of religiosity (50^{th} - 90^{th} percentile), but not when participants had very low to moderate levels of religiosity (10^{th} -25^{th} percentile). Further, this mediational effect generally increased linearly as religiosity increased.

Discrimination as predictor and enculturation as moderator. In order to determine whether the mediational effect from discrimination through anxiety symptoms to physical health differed as a function of participants' level of enculturation (i.e., moderated mediation), a conditional process model was conducted. The overall model predicting physical health was

significant, $F(3, 200) = 7.57$, $p < .001$, $R^2 = .10$. Table 32 presents the *b*-weights, standard errors, *p*-values and 95% bias-correct bootstrap confidence intervals for each of the paths included in the moderated-mediation model. There was a significant positive direct effect of discrimination to anxiety (a path) when enculturation and the interaction were included in the model ($b = .10$, $p = .005$). In this model, enculturation was negatively associated with anxiety symptoms ($b = -1.23$, $p = .013$). The discrimination x enculturation interaction with anxiety symptoms as the criterion variable was not significant ($b = -.09$, $p = .056$). There was also a direct effect of anxiety symptoms (b path), which negatively associated with physical health ($b = -8.11$, $p < .001$) when enculturation, discrimination and the interactions were included in the model. Discrimination was not significant (c' path) in this model ($b = -.94$, $p = .197$), similarly neither was enculturation ($b = 7.61$, $p = .456$). The interaction between anxiety symptoms x enculturation was not significant ($b = -.20$, $p = .928$), similarly discrimination x enculturation was also not significant ($b = .52$, $p = .593$).

Table 32. *Model Summary for the Association between Discrimination and Physical Health through Anxiety by Enculturation (N = 204).*

	Estimate (*SE*)	95% Bias-corrected bootstrap confidence interval
Model 1: DV = Anxiety		
Discrimination *(a path)*	.10 (.03)*	.03 to .17
Enculturation	-1.23 (.49)	-2.20 to -.26
Discrimination × Enculturation	-.09 (.04)	-.17 to .00
R^2	.10**	
Model 2: DV = Physical Health		
Anxiety *(b path)*	-8.11 (1.44)***	-10.95 to -5.27
Discrimination *(c' path)*	-.94 (.72)	-2.36 to .49
Enculturation	7.61 (10.19)	-12.47 to 27.70
Anxiety × Enculturation	-.20 (2.26)	-4.67 to 4.26
Discrimination × Enculturation	.52 (.97)	-1.40 to 2.44
R^2	.19***	

Note. 5000 bootstrap samples. DV = dependent variable. *$p < .05$; **$p < .01$; ***$p < .001$.

Follow-up analyses to the moderated-mediation analysis examined the conditional direct and indirect effects at different levels of the moderator (enculturation). There were no conditional direct effects of discrimination onto physical health by enculturation (Table 33). A conditional indirect effect of discrimination onto physical health through anxiety symptoms was observed: anxiety symptoms was a significant mediator of discrimination in predicting physical health when enculturation was very low to moderate (10^{th} – 50^{th} percentile), but not when enculturation was moderately high to very high (75^{th} - 90^{th} percentile; Table 34).

Table 33. *Conditional Direct Effects of Discrimination on Physical Health via Anxiety at Levels of Enculturation* (*N =204*)

Enculturation Percentile Range	Effect	Estimate (SE)	95% Bias-corrected bootstrap confidence interval
10^{th}	-1.49	1.2	-3.86 to .88
25^{th}	-1.08	.75	-2.56 to .39
50^{th}	-.84	.76	-2.34 to .66
75^{th}	-.62	.97	-2.54 to 1.30
90^{th}	-.62	.97	-2.54 to 1.30

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

Table 34. *Conditional Indirect Effects of Discrimination on Physical Health via Anxiety at Levels of Enculturation* (*N = 204*)

Enculturation Percentile Range	Effect	Estimate (SE)	95% Bias-corrected bootstrap confidence interval
10^{th}	-1.50*	.88	-3.94 to -.30
25^{th}	-.99*	.41	-1.95 to -.34
50^{th}	-.67*	.32	-1.45 to -.20
75^{th}	.39	.37	-1.33 to .14
90^{th}	.39	.37	-1.33 to .14

Note. *Effects are considered statistically significant if the 95% bias-corrected bootstrap confidence interval does not encapsulate zero.

This pattern of findings is reflective of a moderated mediation. Specifically, anxiety symptoms mediated the effect of discrimination on physical health when participants had very low to moderate levels of enculturation (10^{th} - 50^{th} percentile), but not when participants had

moderately high to high levels of enculturation (75^{th} - 90^{th} percentile). Further, this mediational effect decreased linearly as enculturation increased.

Discussion

The purpose of this study was to examine the relationships among acculturative stress, discrimination, mental health (i.e., anxiety and depressive symptoms), and physical health, as well as social support, religiosity, and enculturation among a sample of Latino immigrants living in the United States. Previous research has documented associations between these constructs, yet no research to date has investigated the links between these variables in a series of mediatonal and moderational effects. As such, a community sample of 204 participants was recruited from various locations in Richmond, Virginia which produced a varied sample of Latino immigrants from diverse countries of origin, ages, martial statuses, and employment levels. It was hypothesized that acculturative stress and discrimination would be negatively associated with physical health, and that these effects would be mediated by mental health. These mediations were then hypothesized to be weakened (buffered) by the cultural strengths of social support, religiosity, and enculturation.

Descriptive Statistics

Depression and anxiety symptoms. In the current study, 37.75% of the sample reported clinically significant levels of both anxiety and depression. Compared to national Latino studies, the rates were a bit higher than previously found in the United States (Alegría, et al., 2008; Grant, 2004). Despite the clinically significant levels, approximately 22% of the sample reported minimal symptoms. Approximately, 16% of the sample reported symptom severity necessitating a mental health intervention. This percentage of participants is similar to previously reported anxiety and depression rates (Alegría, et al., 2008). Participants who reported mental health

concerns primarily fell within minimal symptoms range for both anxiety and depressive symptoms. So despite the potentially high-risk nature of this sample, the levels of self-reported mental health problems were actually quite similar to previous studies.

Physical Health. Participants in the current study reported lower health related quality of life compared to the mean from a sample of patients in a university-based ambulatory center in Buenos Aires, Argentina (Augustovski, Lewin, Elorrio, & Rubinstein, 2008). As compared to the original scale validation sample, participants in the current study reported lower health related quality of life versus the mean of patients from health care clinics in the United States classified with minor medical conditions (McHorney, Ware & Raczek, 1993).

Cultural Strengths. In examinations of possible buffers, participants reported higher than average social support, religiosity, and enculturation. As compared to the original validation sample of Latinos living in the U.S., the mean for the ISEL in the current sample was higher than the original sample mean (Merz, et al., 2014). This finding was consistent with previous literature investigating social support as a cultural buffer (Finch & Vega, 2003). The mean for the RCI in the current study was higher than the mean from the original validation sample of undergraduate students from the United States (Worthington, et al 2003). Concerning the enculturation subscale of the BIS, the mean was also higher than the mean from the original validated sample of Latino adolescents (Birman, 1998). Overall, participants in the current sample reported generally high levels of cultural strengths.

Minority stressors. In the current sample, participants reported slightly lower rates of discrimination than some other marginalized groups. As compared to a sample of lesbian, gay bisexual, transgender and queer (LGBTQ) people of color that also assessed discrimination with the DLE, the current study reported slightly lower rates of racial/ethnic discrimination (Sutter &

Perrin, 2016). Acculturative stress in the current sample was measured by the RASI whose original sample of Chinese-Americans living in the United States did not report average total mean scores. The RASI is measured using a 5-point Likert scale ranging from strongly disagree (1) to strong agree (5). On average, the current sample reported a score of 2.67 which falls in the agree to neutral (moderate) range. Overall, participants in the current study reported lower levels of discrimination and moderate ranges of acculturative stress.

Correlations

Mental and physical health. Similar to previous findings, depression and anxiety symptoms were positively related in the current sample, consistent with a large bulk of previous research (Camacho, et al., 2015; Perreira, et al., 2015; Sullivan, & Rehm, 2005). Associations between mental health and physical health were also congruent with previous research (Torres & Steven, 2013), such that depression and anxiety were negatively associated with physical health. This finding is similar to Ortega, Feldman, Canino, Steinman and Alegría's (2006) study that found anxiety and depression were associated with diabetes and cardiovascular disease.

Minority stressors. In the current sample, depression was not associated with acculturative stress. This finding is dissimilar to previous studies that consistently reported the relationship between acculturative stress and depression across Latino samples (Capielo, Delgado-Romero, & Stewart, 2015; Driscoll, & Torres, 2013; D'Anna-Hernandez, Aleman, & Flores, 2015). Acculturative stress and anxiety were found to be positively related, which was similar to Leong, Park, and Kalibatseva's (2013) finding of high acculturative stress' association with endorsement of lifetime anxiety.

Discrimination was found to be negatively associated with depression and anxiety. This finding is similar to previous research (Leong, Park, & Kalibatseva, 2013; Otiniano Verissimo,

Grella, Amaro, & Gee, 2014; Finch, Kolody, & Vega, 2000). Discrimination and acculturative stress were both found to be negatively associated with physical health which is congruent with previous literature (Flores, et. at., 2016). Finch, Frank, and Vega (2004) found acculturative stress has a negative effect on self-reported health the more acculturated Latino immigrants are.

Cultural strengths. Interestingly, religiosity was not associated with mental or physical health, discrimination, nor acculturate stress. Within this sample, religiosity was found to only be correlated with social support. This finding is dissimilar to Dunn and O'Brien's study, which found that religious coping and social support were predictive of psychological functioning. Social support was found to be negatively related to mental health, discrimination, and acculturative stress, similar to previous research (Kiang et. al. 2010; Ornelas & Perreira, 2011; Solberg & Villarreal, 1997, Schneider & Ward, 2003; Finch & Vega, 2000). Enculturation was negatively correlated with both depression and anxiety, consistent with Barerra, Gonzales, Lopez and Fernandez's (2004) finding that enculturation was negatively associated with Latino adolescent mental health. Overall, the associations between variables in this study were similar to previous research findings except for the relationships between depression, acculturative stress, and religiosity.

Mediations

Patterns of relationships among acculturative stress, discrimination, depression, anxiety, and physical health were examined using four mediational models. The first mediational model investigated the relationships among acculturative stress, physical health, and depression. Unlike previous studies, acculturative stress was not found to lead to depression (Crockett et al 2007; Wong, Correa, Robinson, & Lu, 2016). The current sample found direct relationships between depression and physical health as well as acculturative stress and physical health. Contrary to

what was hypothesized, no indirect (mediational) relationship was found from acculturative stress to physical health through depression. Previous research has found acculturative stressors including legal status and language conflicts are negatively associated with physical health (Finch & Vega, 2003; Finch, Kolody, & Vega, 2000) as well as a direct relationship between acculturative stress and depression (Driscoll, & Torres, 2013; D'Anna-Hernandez, Aleman, & Flores, 2015). Many factors may have contributed to the current finding that acculturative stress did not lead to depression. Canino (2004) found distress in Latino youth to be more greatly tied to somatic presentations of distress (i.e., headaches, stomach aches) than emotional distress. In the current sample, acculturative stress may be more greatly tied to anxiety as well as somatic presentations of distress than depressive symptoms, which may reflect a more Eurocentric conceptualization of the construct.

The second mediational model investigated the relationships among acculturative stress, anxiety, and physical health. Anxiety symptoms partially mediated the relationship between acculturative stress and physical health. The direct relationship between acculturative stress and physical health (Cavazos-Rehg, Zayas, & Spitznagel, 2007; Finch, Frank, & Vega, 2004), as well as the direct relationship between anxiety and physical health (Crockett et al 2007; Wong, Correa, Robinson, & Lu, 2016), is similar to previous findings. The mediational effect of anxiety in this model may in part explain the impact of acculturative stress on the physical health of Latino immigrants. Latino immigrants experiencing acculturative stress may be expressing the distress through anxiety that is thereby decreasing their overall physical health. As anxiety symptoms only partially mediated the association, there may be other variables impacting this association. No previous research has identified the impact of acculturative stress on physical health through anxiety symptoms, so this is the first time this finding has emerged.

The final two mediational models found that depression and anxiety symptoms fully mediated the relationship between discrimination and physical health. Previous research findings found direct relationships wherein discrimination predicted poor general health (Flores et al., 2016) as well as direct relationships between discrimination and both depression and anxiety in Mexican-origin immigrants (Leong, Park, & Kalibatseva, 2013; Otiniano Verissimo, Grella, Amaro, & Gee, 2014). No research to date has explored the impact of discrimination on physical health through depression and anxiety symptoms. This finding indicates that discrimination may lead to physical health problems in Latino immigrants via depression and anxiety. The impact of discrimination on physical health through mental health may negatively impact Latino immigrant quality of life, congruent with the minority stress model (Meyer, 2003). As Latinos are experiencing adverse conditions including discrimination, their mental and physical health may be negatively impacted (Williams, Yu, Jackson, & Anderson, 1997).

Moderated Mediations

Social support as a moderator. Depression symptoms mediated the relationship between discrimination and physical health only when participants had low levels of social support (10^{th} percentile). When participants had moderately low to very high levels of social support (25^{th} – 90^{th} percentile), depression symptoms no longer mediated the effect, indicating a moderated mediation. As a result, even moderate levels of social support were a strong buffer of these associations. This finding is similar to Finch and Vega (2000), who found the impact of discrimination on physical health was moderated by social support in a sample of Mexican-origin adults living in California. Yet the current findings are novel in that this is the first study to find evidence that depression links these two variables and that that linking occurs differentially as a function of social support. These findings are congruent with the minority

stress model, which highlights the impact of cultural strengths including social support as a buffer of the direct effects of discrimination on mental and physical health (Meyer, 2003). Furthermore, as a cultural strength, social support may mitigate the impact of minority stressors on mental and physical health in the Latino immigrant community.

Contrary to study hypotheses, the effects of both acculturative stress and discrimination on physical health through anxiety symptoms occurred regardless of level of social support, indicating the absence of a moderated mediation for both models. Previous research on the inverse direct relationship of social support on depressive symptoms is well documented (Kiang et. al. 2010; Ornelas & Perreira, 2011). To date no research has been conducted on the direct relationship between anxiety and social support in Latino immigrants. This study found an inverse direct relationship between anxiety and social support, similar to depression. This similarity between the direct relationship of social support on mental health symptoms did not extend to the moderated mediation for acculturation and discrimination. This difference may imply that social support is an effective tool for decreasing the impact of minority stressors on physical health when depression symptoms are present but not anxiety symptoms. Latino immigrants who seek out social support may do so when feeling sad or disconnected yet not when nervous or worried. This difference may be an expression of the Latino culture rooted in *familismo* (familism) wherein mutual support between family members is crucial emphasizing reciprocity, family honor and interconnectedness (Baca-Zinn & Wells, 2000, Calzada, Huang, & Brotman, 2012). Within *familismo*, primacy is placed on family or group needs over the individual (Ting-Toomey et al., 2000). Within this *familismo* framework, it may be that Latino immigrants do not share individual worries or feelings of nervousness in order to place group needs over their individual's needs.

Religiosity as a moderator. The present study documented three moderated mediations with religiosity as a moderator: (a) the mediation of anxiety on the relationship between acculturative stress and physical health, (b) the mediation of depression on the relationship between discrimination and physical health, and (c) the mediation of anxiety on the relationship between discrimination and physical health. However, contrary to hypotheses, the moderated mediations occurred in the opposite direction as expected in that the mediations were present only when religiosity was moderate or high. As a result, religiosity actually exacerbated the degree to which minority stressors channeled through mental health onto physical health.

Consistent with what would be expected, religiosity did serve as a buffer and reduced the effect of acculturative stress on physical health within the conditional direct effect. This conditional direct effect of religiosity was not found in the direct effect of discrimination on physical health. Within the current findings, religiosity may reduce the negative effect of acculturative stress on physical health yet not with discrimination.

Overall, religiosity exacerbated the impact of minority stressors through mental health onto physical health. This finding is contrary to hypothesis and previous research (Arrendondo, Elder, Ayala, and Campbell, 2005; Morenoa & Cardemil, 2013). It is particularly noteworthy that within the current sample, religiosity acted as a buffer within a conditional direct relationship from acculturative stress to physical health and then within a conditional indirect effect incorporating mental health variables for both minority stressors religiosity became an exacerbator of the relationships. This finding may reflect possible third variables unaccounted for interacting with religiosity within these models for Latino immigrants' mental health who are highly religious. These variables could include average socioeconomic status or personality characteristics of Latino immigrants who are religious. For example, it could be that highly

religious Latino immigrants are more likely to express mental health concerns due to higher levels of vulnerability inherent in religious practices which may be impacting the exacerbatory nature of religiosity in this model. Latino immigrants who are less religious may also express their distress through somatic presentations rather than through mental health symptoms (Canino, 2004). Finally, individuals who are less religious may also be less likely to disclose mental health concerns that are impacting their physical health. Such possible interpretations await support from future research.

Enculturation as a moderator. The present study documented two moderated mediations with enculturation as a moderator: (a) the mediation of anxiety on the relationship between acculturative stress and physical health, and (b) the mediation of anxiety on the relationship between discrimination and physical health. No moderated mediation was found for enculturation between on the indirect effect of discrimination to physical health through depressive symptoms. Enculturation also served as a buffer and reduced the effect of acculturative stress on physical health within a conditional direct effect. Congruent with hypotheses, enculturation buffered the effects of minority stressors on physical health.

The moderational effect of enculturation is in line with the current hypotheses but different from Barerra, Gonzales, Lopez and Fernandez's (2004) negative association between enculturation and Latino adolescent mental health. As Latino immigrants identify with their ethnic culture to a larger extent, enculturation may be another cultural strength and buffer against minority stressors (Rumbaut, 1994). As no previous research has investigated the relationships among anxiety symptoms, enculturation, and physical health, the current study provides benchmark data for future investigations. Enculturation moderated the mediational relationship between discrimination and physical health through anxiety but not through depression. This

difference in mental health effects may indicate differences in how enculturation buffers the relationship between minatory stressors and physical health. Enculturation has been found to be protective due to social and familial support, traditional values, and a shared sense of ethnic connectedness, which may be impacting the current sample's expression of anxiety (Barerra, Gonzales, Lopez & Fernandez, 2004). The shared traditional values and sense of ethnic connectedness may not be helpful to a Latino immigrant when feeling depressed in enduring minority stressors and declines in physical health. This difference may be crucial when implementing clinical interventions.

Potential Implications

Richmond and its surrounding suburbs, Henrico and Chesterfield, have recently greatly expanded in Latino immigration. In Chesterfield, Latinos currently account for 8% of the total population, which was a 234% increase since 2000 (Chesterfield Census, 2017). In Richmond City, approximately 6.5% of the total population is Latino which is an 11% change increase since the year 2000 (Richmond City Census, 2017). Henrico reported similar estimates to Richmond with 5.3% Latinos with a 6.9% increase since the year 2000 (Henrico Census, 2017). With this rapid increase in population, investigation of the needs of Latinos in this area is crucial. The current findings indicate increased need of health care clinics, mental health providers and community resources to serve the Latino population in these cities, particularly for Latino immigrants who face high rates of acculturative stressors and discrimination. Specifically, it is critical to provide services targeting the impact of these minority stressors on the physical and mental health of Latinos in and surrounding Richmond, VA.

As the current data were collected from Richmond city and its surrounding suburbs, the interpretation of findings are particularly important due to the context of recent immigration to a

new area. As Richmond, Virginia and its surrounding areas have a very short history of Latino settlement, approximately 10-20 years, and other areas in the U.S. may be experiencing this phenomenon, the implications of the current study are applicable across similar cities (Schleff & Cavalcanti, 2010). According to Schleef and Cavalcanti (2010) who investigated the recent immigration to Richmond in their text, "Latinos in Dixie, Class and Assimilation in Richmond, Virginia" within the last decade, Latinos have moved away from previously established settlement areas to areas of the U.S. with lower presence of Latinos. This trend of recent immigration may be rooted in economic opportunities wherein Richmond's labor market is expanding, a significant increase in available entry-level work, and limited government attention has previously been directed to immigrants (Schleff & Cavalcanti, 2010). These economic motivations may be an aspect of the increase in Latino immigration. As Latino immigration to Richmond is growing, the current study's investigation is crucial for informing health care services and community resources in the area.

Results of this study may have the potential to inform clinical intervention, research, medical practice, community-level interventions, and policy. It provides a greater understanding of possible systematic forces that influence the mental and physical health of Latino immigrants in the Richmond area, and likely in other regions of the U.S. As discrimination and acculturative stress have been found to impact physical health, clinicians and physicians working with Latino immigrants are recommended to assess the levels of environmental stressors potentially impacting presenting medical issues. When creating treatment plans and recommendations, clinicians and physicians may refer Latino immigrant patients to social work services for an integrated treatment model approach to address possible environmental stressors. Thus, targeting services for the purpose of reducing discrimination experiences and acculturative stress may

have a significant impact on mental and physical health of Latino immigrants. As mental health was found to be a significant mediator, it is recommended that targeted treatment for clinical interventions focused on psychological well-being may be helpful in addressing physical health issues. As cultural strengths of social support and level of enculturation buffer these effects, community-level interventions focused on expanding existing social support networks and collaboration with cultural centers are recommended in order to improve the mental and physical health of Latino immigrants. At a policy level, this increased understanding on the impact of the political climate on the mental and physical health on Latino immigrants informs important policy changes to in order to reduce health care costs.

Limitations and Future Directions

The current study documented relationships among discrimination, acculturative stress, mental health, physical health among a sample of Latino immigrants living in the United States. Social support and enculturation generally buffered individuals against physical health problems with current minority stressors, which informs clinical intervention and future research. However, these finds are recommended to be considered within the context of several limitations.

First, inclusion criteria for participation in the current study required individuals to read and write in Spanish. As 22% of the Latino immigrant community in the United States is illiterate in Spanish (Taylor, Lopez, Martínez, & Velasco, 2018) this inclusion criterion excluded approximately one fifth of the Latino immigrant community. Timmins (2002) found an association between illiteracy and health care access as language barriers adversely affected quality of care, emphasizing that this is a documented health care disparity for Latino immigrants. The current study excluded individuals who were illiterate in Spanish and who also

may experience greater minority stressors due to systemic barriers. Future investigations are encouraged to include Latino immigrants at all literacy levels.

Additionally, the majority of the current sample reported their country of origin as Mexico, El Salvador, and Guatemala. Thus, results may not be fully generalizable to Latino immigrants living in the U.S. whose country of origin is from other Central and South American countries. Also the current study's average age was 36.26 (*SD* = 12.45) and generally an age diverse sample with the exception of individuals over the age of 61. Caution is also recommended when generalizing the current study findings to individuals over the age of 61 years old.

The current study did not control for any covariates in the statistical analysis including sex or age. Future research investigating the impact of minority stressors on the mental and physical health of Latino immigrants is encouraged to remove the potential effects of covariates including sex and age. The current study did not investigate differences based on sex or age due to limited statistical power and a smaller sample size. Future investigations are encouraged to collected larger sample sizes to provide greater statistical power for covariate investigation.

Another limitation is the lack of investigation of the impact of sex on the direct and indirect relationships. As Latino women and men may experience distress and express cultural buffers differently, future investigations are encouraged to investigate how gender role conformity may impact mental and physical health outcomes. Previous research has found sex differences in levels of enculturation, social support, and religiosity between Latino men and women (Lorenzo-Blanco & Cortina, 2013; Moreno & Cardemil, 2013; Wohl, et. al., 2010). When investigating the differences between cultural strengths by sex, future researchers are encouraged to collect qualitative statements focused on how Latino immigrants experience

distress (both mental and physical) and how religiosity, social support, and enculturation interacts with their understanding of distress. The purpose of the future investigations would be to provide greater insight into how gender roles may influence religious expression, seeking out social support, and cultural connectedness through enculturation and their implications for mental and physical health outcomes.

As religiosity exacerbated the impact of minority stressors through mental health onto physical health, presenting in some ways as a risk factor in the current study, future research is encouraged to investigate different aspects of religious expression. Specifically, investigating potential intrapersonal and interpersonal differences that may provide greater understanding of when religiosity leads more likely through distress and what aspects may be protective as found in previous research within the Latino immigrant population (Arrendondo, Elder, Ayala, and Campbell, 2005; Morenoa & Cardemil, 2013).

Another limitation is the cross-sectional nature of this current research design rather than a longitudinal study of minority stressors, cultural buffers, and mental and physical health of Latino immigrants. For example, in the current study, physical health was negatively impacted by minority stressors. Currently, no information is provided on the implications of long-term chronic minority stressors on allostatic load and long-term physical health outcomes.

Finally, another limitation of the current study is the sole investigation of Latino immigrants. First and second generation Latinos were not included in the sample, limiting the investigation of the immigrant paradox across multi-generations. Since U.S.- born Latinos do not express the immigrant paradox that is an exclusive advantage of health outcomes to foreign-born Latinos (Abraido-Lanza et al., 1999, Borrell & Crawford, 2009; Teruya & Bazargan-Hejazi, 2013), future investigations are recommended to include multi-generations of Latinos living in

the U.S. Future researchers are recommended to investigate and identify factors contributing to the immigrant paradox across generations in order to facilitate the creation of interventions so the exclusivity experienced by Latino immigrants within the immigrant paradox may be extended to future generations.

Conclusions

The current study adds to the understanding of the relationships between discrimination, acculturative stress, mental health and physical health in Latino immigrants living in the U.S. The current investigation is the first study to the author's knowledge that investigated the indirect effect of minority stressors on physical health via mental health. Additionally, the present investigation was also the first to examine the impact of enculturation, social support, and religiosity as potential moderating effects among the mediated relationships between discrimination, acculturation, and mental and physical health. Clinicians and healthcare providers are recommended to assess for the impact of these immigrant-related stressors when discussing treatment plans and diagnoses with Latino immigrants living in the U.S. Since social support and enculturation were found to weaken the impact of minority stressors on physical health through mental health, it is recommended that future interventions targeting Latino mental and physical health incorporate community resources including Latino cultural centers and Latino enculturation experiences.

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Appendix A
Short Form Health Survey- SF-36

MARQUE UN SOLO NÚMERO

1. En general, ¿diría usted que su salud es:

1 ☐ Excelente
2 ☐ Muy buena
3 ☐ Buena
4 ☐ Regular
5 ☐ Mala

2. ¿Cómo calificaría usted su estado general de salud actual. comparado con el de hace un año?

1 ☐ Mucho mejor ahora que hace un año
2 ☐ Algo mejor ahora que hace un año
3 ☐ Más o menos igual que hace un año
4 ☐ Algo peor ahora que hace un año
5 ☐ Mucho peor ahora que hace un año

MARQUE UN NÚMERO EN CADA LÍNEA

3. Las siguientes preguntas se refieren a actividades (o cosas) que usted podría hacer **durante** un día normal. ¿Su estado **de salud** actual lo limita (para hacer) **en esas actividades** (o cosas)? Si es así, ¿cuánto?

	Sí, me limita mucho	Sí, me limita un poco	No, no me limita para nada
a. **Actividades** intensas, tales como correr, levantar objetos pesados, participar en deportes agotadores	1	2	3
b. **Actividades** moderadas, tales como mover una mesa, **empujar una** aspiradora, jugar **al bowling** o caminar más de una hora	1	2	3
c. **Levantar** o llevar las bolsas de las compras	1	2	3
d. Subir varios pisos por la escalera	1	2	3
e. Subir un solo piso por la escalera	1	2	3
f. Agacharse o arrodillarse	1	2	3
g. Caminar un kilómetro o más	1	2	3
h. Caminar medio kilómetro	1	2	3
i. Caminar una cuadra	1	2	3
j. Bañarse o vestirse (por sí mismo)	1	2	3

MARQUE UN NÚMERO EN CADA LÍNEA

4. Durante las 4 últimas semanas, ¿ha tenido **usted** alguno de los siguientes problemas **con** su trabajo **u otras actividades diarias normales** a causa de su salud física ?

	SI	NO
a. ¿Ha disminuido usted el tiempo que dedicaba a su trabajo u otras actividades?	1	2
b. ¿Ha hecho menos de lo que hubiera querido hacer?	1	2
c. ¿Se ha visto limitado en el tipo de trabajo u otras actividades?	1	2
d. ¿Ha tenido dificultades en realizar su trabajo u otras actividades (por ejemplo, le ha costado más esfuerzo?	1	2

5. Durante las últimas 4 semanas, ¿ha tenido usted alguno de los siguientes problemas **con** su trabajo **u otras actividades diarias normales** a causa de algún problema emocional **(como sentirse deprimido o ansioso)**?

	SI	NO
a. ¿Ha disminuido el tiempo que dedicaba al trabajo u otras actividades?	1	2
b. ¿Ha logrado hacer menos de lo que usted hubiera querido hacer?	1	2
c. ¿Ha hecho su trabajo u otras actividades con menos cuidado que siempre?	1	2

MARQUE UN SOLO NÚMERO

6. Durante las últimas 4 semanas, **¿en qué medida** su salud física o sus problemas emocionales han dificultado sus actividades sociales **normales** con su familia, amigos,vecinos u otras personas?

1 ☐ Nada en absoluto
2 ☐ Ligeramente
3 ☐ Moderadamente
4 ☐ Bastante
5 ☐ Extremadamente

7. ¿Cuánto dolor físico ha tenido usted durante las últimas 4 semanas?

1 ☐ Ninguno
2 ☐ Muy poco
3 ☐ Poco
4 ☐ Moderado
5 ☐ Mucho
6 ☐ Muchísimo

MARQUE UN SOLO NÚMERO

8. Durante las últimas 4 semanas, ¿cuánto ha dificultado el dolor su trabajo normal (incluyendo tanto el trabajo fuera del hogar como las tareas domésticas)?

1 ☐ Nada en absoluto

2 ☐ Un poco

3 ☐ Moderadamente

4 ☐ Bastante

5 ☐ Extremadamente

MARQUE UN NÚMERO EN CADA LÍNEA

9. Las **siguientes** preguntas se refieren a cómo se siente usted y a cómo le han ido sus cosas durante las últimas 4 semanas. En cada pregunta, **por favor elija la respuesta que más se aproxime a la manera como se ha sentido usted. ¿Cuánto tiempo durante las últimas 4 semanas...**

	Siempre	Casi siempre	Muchas Veces	Algunas veces	Casi nunca	Nunca
a. ¿Se ha sentido lleno de vitalidad?	1	2	3	4	5	6
b. ¿Ha estado muy nervioso?	1	2	3	4	5	6
c. ¿Se ha sentido con ánimo tan decaído que nada podía animarlo?	1	2	3	4	5	6
d. ¿Se ha sentido tranquilo y sereno?	1	2	3	4	5	6
e. ¿Ha tenido mucha energía?	1	2	3	4	5	6
f. ¿Se ha sentido desanimado y triste?	1	2	3	4	5	6
g. ¿Se ha sentido agotado?	1	2	3	4	5	6
h. ¿Se ha sentido feliz?	1	2	3	4	5	6
i. ¿Se ha sentido cansado?	1	2	3	4	5	6

MARQUE UN SOLO NÚMERO

10. Durante las últimas 4 semanas **¿cuánto tiempo su salud física o sus problemas emocionales** (le) han dificultado sus actividades sociales(como visitar amigos, **parientes, etc.**?

1 ☐ Siempre
2 ☐ Casi siempre
3 ☐ Algunas veces
4 ☐ **Casi nunca**
5 ☐ Nunca

MARQUE UN NÚMERO EN CADA LÍNEA

10. ¿Cuán CIERTA o FALSA es cada una de las siguientes frases para usted?

	Totalmente cierta	Bastante cierta	No lo sé	Bastante falsa	Totalmente falsa
a. Me parece que me enfermo más fácilmente que otras personas.	1	2	3	4	5
b. Estoy tan sano como cualquiera.	1	2	3	4	5
c. Creo que mi salud va a empeorar	1	2	3	4	5
d. Mi salud es excelente	1	2	3	4	5

Appendix B

Patient Health Questionnaire -9 (PHQ-9)

Cuestionario de salud del paciente (PHQ-9)

En las dos ultimas semanas, ¿con qué frecuencia le han molestado los siguientes problemas?	Nnnca	Varios días	Más de la mitad de los días	Casi todos los días
1. Tener poco interés o placer para hacer cosas	0	1	2	3
2. Sentirse desanimado, deprimido o sin esperanza	0	1	2	3
3. Problemas en dormirse o en mantenerse dormido/a o en dormir demasiado	0	1	2	3
4. Sentirse cansado o de tener poca energía	0	1	2	3
5. Tener poco apetito o comer en exceso	0	1	2	3
6. Sentir falta de amor propio –sentimientos de haber fracasado o de que decepcionara a si mismo/a la familia.	0	1	2	3
7. Tener dificultad para concentrarse en cosas tales como leer el periódico o mirar la televisión.	0	1	2	3
8. Se mueve o habla tan lentamente que otra gente se podría dar cuenta –o de lo contrario, esta tan agitado/a o inquieto que se mueve mucho más de lo acostumbrado.	0	1	2	3
9. Se le han ocurrido pensamiento de que sería estar muerto o de hacerse daño de alguna manera.	0	1	2	3

10. Si usted se identificó con cualquier problema en este cuestionario ¿cuán difícil se le ha hecho cumplir con su trabajo, atender su casa o relacionarse con otras personas debido a estos problemas?	**Ninguna dificultad**	**1** _____
	Algo de dificultad	**2**_____
	Mucha dificultad	**3**_____
	Demasiada dificultad	**4**_____

Appendix C

General Anxiety Disorder- 7 (GAD-7)

La Escala del Trastorno de Ansiedad Generalizada (GAD-7)

Durante las últimas 2 semanas, ¿con qué frecuencia le han molestado los siguientes problemas?

		Nunca	Varios días	Más de la mitad de los días	Casi todos los días
a	Sentirse nervioso/a, intranquilo/a o con los nervios de punta	0	1	2	3
b	No poder dejar de preocuparse o no poder controlar la preocupación	0	1	2	3
c	Preocuparse demasiado por diferentes cosas	0	1	2	3
d	Dificultad para relajarse	0	1	2	3
e	Estar tan inquieto/a que es difícil permanecer sentado/a tranquilamente	0	1	2	3
f	Molestarse o ponerse irritable fácilmente	0	1	2	3
g	Sentir miedo como si algo terrible pudiera pasar	0	1	2	3

Si usted se identificó con cualquier problema en este cuestionario, ¿cuán difícil se le ha hecho cumplir con su trabajo, atender su casa, o relacionarse con otras personas debido a estos problemas?

0	**Nada en absoluto**
1	**Algo difícil**
2	**Muy difícil**
3	**Extremadamente difícil**

Appendix D

Interpersonal Support Evaluation List (ISEL)

ISEL

CUESTIONARIO PARA LA EVALUACIÓN DEL APOYO INTERPERSONAL-

INSTRUCCIONES:

Este cuestionario se compone de una lista de afirmaciones cada una de las cuales pueden o no ser verdad sobre usted. Para cada afirmación, conteste "definitivamente verdadero" si usted piensa efectivamente que es verdad sobre usted y "probablemente verdadero" si usted piensa que es verdad pero no es absolutamente cierto. De la misma forma, usted debería contestar "definitivamente falso" si usted está seguro de que la afirmación es falsa y "probablemente falso" si usted piensa que es falso pero no es completamente cierto.

Recuerde que esto no es una prueba y no existen respuestas correctas ni erróneas. Por favor, marque la opción que mejor represente lo que usted piensa.

1. Si quisiera hacer una excursión de un día (por ejemplo, a las montañas, playa o al campo), tendría dificultades para encontrar a alguien que fuera conmigo.

1. definitivamente falso 2. probablemente falso 3. probablemente verdadero 4. definitivamente verdadero

2. Siento que no hay nadie con quien pueda compartir mis preocupaciones o miedos más íntimos.

1. definitivamente falso 2. probablemente falso 3. probablemente verdadero 4. definitivamente verdadero

3. Si yo estuviera enfermo, podría fácilmente encontrar a alguien para ayudarme con mis quehaceres diarios.

1. definitivamente falso 2. probablemente falso 3. probablemente verdadero 4. definitivamente verdadero

4. Hay alguien con quien puedo contar para pedir consejo sobre cómo manejar los problemas con mi familia.

1. definitivamente falso 2. probablemente falso 3. probablemente verdadero 4. definitivamente verdadero

5. Si decido una tarde que me gustaría ir al cine esa noche, podría fácilmente encontrar a alguien para ir conmigo.

1. definitivamente falso 2. probablemente falso 3. probablemente verdadero 4. definitivamente verdadero

6. Cuando necesito sugerencias sobre cómo afrontar un problema personal, sé a quien puedo acudir.

1. definitivamente falso 2. probablemente falso 3. probablemente verdadero 4. definitivamente verdadero

7. No recibo a menudo invitaciones para hacer cosas con otros.

1. definitivamente falso 2. probablemente falso 3. probablemente verdadero 4. definitivamente verdadero

8. Si tuviera que salir de la ciudad durante unas semanas, sería difícil encontrar a alguien que cuidara de mi casa (las plantas, animales domésticos, jardín, etc.)

1. definitivamente falso 2. probablemente falso 3. probablemente verdadero 4. definitivamente verdadero

9. Si quisiera almorzar con alguien, podría encontrar fácilmente a alguien con quien hacerlo.

1. definitivamente falso 2. probablemente falso 3. probablemente verdadero 4. definitivamente verdadero

10. Si yo me encontrara a 10 kilómetros de la casa, hay alguien a quien yo podría llamar para que me recogiera.*

1. definitivamente falso 2. probablemente falso 3. probablemente verdadero 4. definitivamente verdadero

11. Si estuviera pasando por una crisis, sería difícil encontrar a alguien que me pudiera aconsejar bien sobre cómo manejarla.

1. definitivamente falso 2. probablemente falso 3. probablemente verdadero 4. definitivamente verdadero

12. Si necesitara ayuda para trasladarme a una nueva casa, tendría dificultades en encontrar a alguien que me ayudara.

1. definitivamente falso 2. probablemente falso 3. probablemente verdadero 4. definitivamente verdadero

Appendix E

Religious Commitment Inventory-10 (RCI)

RCI

Instrucciones: Lee cada una de las siguientes afirmaciones. Utilizando la escala, por favor circule la respuesta que mejor describa que tan cierta cada afirmación es para usted.

1. Con frecuencia leo libros y revistas sobre mi fe
   1) De ningún modo 2) Relativamente 3) Moderadamente 4) En su mayoría 5) '
2. Contribuyo financieramente a mi organización religiosa
   1) De ningún modo 2) Relativamente 3) Moderadamente 4) En su mayoría 5) '
3. Paso tiempo tratando de crecer en el entendimiento de mi fe
   1) De ningún modo 2) Relativamente 3) Moderadamente 4) En su mayoría 5) '
4. La religión es especialmente importante para mi porque responde a mis preguntas sobre el significado de la vida
   1) De ningún modo 2) Relativamente 3) Moderadamente 4) En su mayoría 5) '
5. Mis creencias religiosas tiene mucho que ver como veo la vida
   1) De ningún modo 2) Relativamente 3) Moderadamente 4) En su mayoría 5) '
6. Disfruto pasando tiempo con otros de mi misma religión
   1) De ningún modo 2) Relativamente 3) Moderadamente 4) En su mayoría 5) '
7. Mis creencias religiosas influyen todas mis relaciones en la vida
   1) De ningún modo 2) Relativamente 3) Moderadamente 4) En su mayoría 5) '
8. Es importante para mi de pasar tiempo en pensamientos religiosos y de reflexión
   1) De ningún modo 2) Relativamente 3) Moderadamente 4) En su mayoría 5) '
9. Disfruto trabajar en las actividades de mi afiliación religiosa
   1) De ningún modo 2) Relativamente 3) Moderadamente 4) En su mayoría 5) '
10. Estoy bien informado de mi grupo religioso local y tengo algo de influencia en las decisiones
    1) De ningún modo 2) Relativamente 3) Moderadamente 4) En su mayoría 5) '

Appendix F

Bicultural Involvement Scale- (BIS)

Instrucciones: En las siguientes preguntas por favor circule el numero que mejor describa su sentir

Que tan cómodo te sientes hablando español…

1. En casa? Para nada cómodo 1 2 3 4 5 Muy cómodo
2. En la escuela? Para nada cómodo 1 2 3 4 5 Muy cómodo
3. En el trabajo? Para nada cómodo 1 2 3 4 5 Muy cómodo
4. Con amigos/as? Para nada cómodo 1 2 3 4 5 Muy cómodo
5. En general? Para nada cómodo 1 2 3 4 5 Muy cómodo

Que tan cómodo te sientes hablando inglés…

6. En casa? Para nada cómodo 1 2 3 4 5 Muy cómodo
7. En la escuela? Para nada cómodo 1 2 3 4 5 Muy cómodo
8. En el trabajo? Para nada cómodo 1 2 3 4 5 Muy cómodo
9. Con amigos/as? Para nada cómodo 1 2 3 4 5 Muy cómodo
10. En general? Para nada cómodo 1 2 3 4 5 Muy cómodo

Cuanto te gusta(n)…

11. La música Latina Para nada 1 2 3 4 5 Mucho
12. Los bailes Latinos Para nada 1 2 3 4 5 Mucho
13. Los lugares Latinos Para nada 1 2 3 4 5 Mucho
14. Los pasatiempos Latinos Para nada 1 2 3 4 5 Mucho
15. Los programas por televisión Latina Para nada 1 2 3 4 5 Mucho
16. Las estaciones de radio hispana Para nada 1 2 3 4 5 Mucho
17. Los libros y revistas Latinas Para nada 1 2 3 4 5 Mucho

Cuanto te gusta(n)…

1. La música Americana Para nada 1 2 3 4 5 Mucho
18. Los bailes Americanos Para nada 1 2 3 4 5 Mucho
19. Los lugares Americanos Para nada 1 2 3 4 5 Mucho
20. Los pasatiempos Americanos Para nada 1 2 3 4 5 Mucho
21. Los programas por televisión Americana Para nada 1 2 3 4 5 Mucho
22. Las estaciones de radio Americana Para nada 1 2 3 4 5 Mucho
23. Los libros y revistas Americanas Para nada 1 2 3 4 5 Mucho

A veces la vida no es como realmente la queremos. Pero si pudieras tener la vida que quieres, ¿cómo te gustarían los siguientes aspectos de tu vida? Favor de circular la respuesta que mejor te aplique.

24. Comida
    a. Desearía esto fuera completamente Hispano
    b. Desearía esto fuera en su mayoría Hispano
    c. Desearía esto fuera mixto, Hispano y Americano
    d. Desearía esto fuera en su mayoría Americano
    e. Desearía esto fuera completamente Americano
25. Lenguaje
    a. Desearía esto fuera completamente Hispano
    b. Desearía esto fuera en su mayoría Hispano

c. Desearía esto fuera mixto, Hispano y Americano
d. Desearía esto fuera en su mayoría Americano
e. Desearía esto fuera completamente Americano

26. Música
    a. Desearía esto fuera completamente Hispano
    b. Desearía esto fuera en su mayoría Hispano
    c. Desearía esto fuera mixto, Hispano y Americano
    d. Desearía esto fuera en su mayoría Americano
    e. Desearía esto fuera completamente Americano
27. Programas por televisión
    a. Desearía esto fuera completamente Hispano
    b. Desearía esto fuera en su mayoría Hispano
    c. Desearía esto fuera mixto, Hispano y Americano
    d. Desearía esto fuera en su mayoría Americano
    e. Desearía esto fuera completamente Americano
28. Libros/revistas
    a. Desearía esto fuera completamente Hispano
    b. Desearía esto fuera en su mayoría Hispano
    c. Desearía esto fuera mixto, Hispano y Americano
    d. Desearía esto fuera en su mayoría Americano
    e. Desearía esto fuera completamente Americano
29. Bailes
    a. Desearía esto fuera completamente Hispano
    b. Desearía esto fuera en su mayoría Hispano
    c. Desearía esto fuera mixto, Hispano y Americano
    d. Desearía esto fuera en su mayoría Americano
    e. Desearía esto fuera completamente Americano
30. Programas de radio
    a. Desearía esto fuera completamente Hispano
    b. Desearía esto fuera en su mayoría Hispano
    c. Desearía esto fuera mixto, Hispano y Americano
    d. Desearía esto fuera en su mayoría Americano
    e. Desearía esto fuera completamente Americano
31. La manera de celebrar cumpleaños
    a. Desearía esto fuera completamente Hispano
    b. Desearía esto fuera en su mayoría Hispano
    c. Desearía esto fuera mixto, Hispano y Americano
    d. Desearía esto fuera en su mayoría Americano
    e. Desearía esto fuera completamente Americano
32. La forma de celebrar bodas
    a. Desearía esto fuera completamente Hispano
    b. Desearía esto fuera en su mayoría Hispano
    c. Desearía esto fuera mixto, Hispano y Americano
    d. Desearía esto fuera en su mayoría Americano
    e. Desearía esto fuera completamente Americano

Appendix G

Riverside Acculturation Stress Inventory (RASI)

1. Debido a mi origen Hispano tengo que trabajar mas duro que la mayoría de los Americanos
   Muy en desacuerdo 1 2 3 4 5 Muy de acuerdo

2. Siento presión que lo que "yo" haga sea visto como una representación de las habilidades de la gente hispana
   Muy en desacuerdo 1 2 3 4 5 Muy de acuerdo
3. Cuando ando en busca de trabajo, a veces siento que mi origen hispano es una limitación
   Muy en desacuerdo 1 2 3 4 5 Muy de acuerdo

4. Es difícil para mi desempeñar bien mi trabajo debido a mi ingles
   Muy en desacuerdo 1 2 3 4 5 Muy de acuerdo

5. Frecuentemente me siento incomprendido o limitado en situaciones cotidianas debido a mi ingles
   Muy en desacuerdo 1 2 3 4 5 Muy de acuerdo

6. Me molesta tener un acento (en la idioma ingles o español)
   Muy en desacuerdo 1 2 3 4 5 Muy de acuerdo

7. He tenido desacuerdos con otros hispanos (amigos o familia) por gustarme costumbres Americanas o por mi manera de hacer cosas
   Muy en desacuerdo 1 2 3 4 5 Muy de acuerdo

8. He tenido desacuerdos con Americanos por gustarme las costumbres hispanas o mi manera de hacer cosas
   Muy en desacuerdo 1 2 3 4 5 Muy de acuerdo

9. Siento que mis costumbres (Hispanas o Americanas) han causado conflicto en mis relaciones
   Muy en desacuerdo 1 2 3 4 5 Muy de acuerdo

10. He sido tratado groseramente o injustamente debido a mi origen hispano
    Muy en desacuerdo 1 2 3 4 5 Muy de acuerdo

11. Me he sentido discriminado por Americanos debido a mi origen hispano
    Muy en desacuerdo 1 2 3 4 5 Muy de acuerdo

12. Siento con frecuencia que gente interpreta mi comportamiento basado en sus estereotipos en como son los hispanos
    Muy en desacuerdo 1 2 3 4 5 Muy de acuerdo

13. Siento que no hay suficiente gente hispana en mi entorno

Muy en desacuerdo 1 2 3 4 5 Muy de acuerdo

14. Cuando estoy en un lugar o cuarto donde soy la única persona hispana, a menudo me siento diferente o aislado

Muy en desacuerdo 1 2 3 4 5 Muy de acuerdo

15. Siento que el ambiente donde vivo no es suficiente multicultural; no tiene suficiente riqueza cultural

Muy en desacuerdo 1 2 3 4 5 Muy de acuerdo

Appendix H

Daily Life Experience Scale (DLE)

Cuantas veces ha…

1. sido ignorado, o pasado por alto (en un restaurante, tienda, etc.) debido a su raza?
   1) Menos de una vez por año 2) Un par de veces al año 3) Una vez al mes
   4) Un par de veces al mes 5) Una vez a la semana o mas

2. sido excluido de conversaciones o actividades debido a tu raza?
   1) Menos de una vez por año 2) Un par de veces al año 3) Una vez al mes
   4) Un par de veces al mes 5) Una vez a la semana o mas

3. sido mirado fijamente por extraños debido a su raza?
   1) Menos de una vez por año 2) Un par de veces al año 3) Una vez al mes
   4) Un par de veces al mes 5) Una vez a la semana o mas

4. sido acusado de algo o tratado sospechosamente debido a su raza?
   1) Menos de una vez por año 2) Un par de veces al año 3) Una vez al mes
   4) Un par de veces al mes 5) Una vez a la semana o mas

5. visto a otros reaccionando a usted como si tuvieran miedo o fuesen intimidados debido a su raza?
   1) Menos de una vez por año 2) Un par de veces al año 3) Una vez al mes
   4) Un par de veces al mes 5) Una vez a la semana o mas

6. sido observado o perseguido en lugares públicos debido a su raza?
   1) Menos de una vez por año 2) Un par de veces al año 3) Una vez al mes
   4) Un par de veces al mes 5) Una vez a la semana o mas

7. sido tratado groseramente o irrespetuosamente debido a su raza?
   1) Menos de una vez por año 2) Un par de veces al año 3) Una vez al mes
   4) Un par de veces al mes 5) Una vez a la semana o mas

8. sido insultado, llamado un nombre, o acosado debido a su raza?
   1) Menos de una vez por año 2) Un par de veces al año 3) Una vez al mes
   4) Un par de veces al mes 5) Una vez a la semana o mas

9. sido burlado o se han burlado de usted debido a su raza?
   1) Menos de una vez por año 2) Un par de veces al año 3) Una vez al mes
   4) Un par de veces al mes 5) Una vez a la semana o mas

10. sido tratado como si fuera estúpido, y malinterpretado debido a su raza?
    1) Menos de una vez por año 2) Un par de veces al año 3) Una vez al mes
    4) Un par de veces al mes 5) Una vez a la semana o mas

11. tenido sus ideas u opiniones minimizadas, ignoradas, o devaluadas debido a su raza?
    1) Menos de una vez por año 2) Un par de veces al año 3) Una vez al mes
    4) Un par de veces al mes 5) Una vez a la semana o mas

12. tenido a otros esperando que su trabajo sea inferior debido a su raza?
    1) Menos de una vez por año 2) Un par de veces al año 3) Una vez al mes
    4) Un par de veces al mes 5) Una vez a la semana o mas

13. no ha sido tomado en serio por su raza
    1) Menos de una vez por año 2) Un par de veces al año 3) Una vez al mes
    4) Un par de veces al mes 5) Una vez a la semana o mas

Vita

Annahir Naomi Cariello was born on March 18, 1987 in Morris County, New Jersey and is an American citizen. She graduated from Madison High School in Madison, New Jersey in 2005. She received her Bachelors of Science in Psychology from Brigham Young University, Provo, Utah in 2009. She completed a post-baccalaureate research associate position studying neurodevelopment at the University of Utah. She received her Masters of Education in Counseling Psychology from the University of Utah, Salt Lake City, Utah. Annahir went on to work for 2 years as an Associate Clinical Mental Health Counselor before entering the counseling psychology doctoral program at Virginia Commonwealth University.