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The Impact of Religious Coping on the Acculturative Stress and Alcohol Use of Recent Latino Immigrants

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INTRODUCTION

Latinos are the largest and fastest growing ethnic minority group in the United States (U.S. Census, 2011a). A distinctive characteristic of the U.S. Latino population is its large number of immigrants. Today, the majority of immigrants gaining entry into the United States are Latino (Caplan, 2007). As demographers have observed the rapid growth of the U.S. Latino population, researchers have identified Latinos as being especially vulnerable to consequences related to alcohol use. Compared to other U.S ethnic groups, Latinos experience disproportionately negative consequences of alcohol use, including intimate partner violence, incarceration, homelessness, HIV/AIDS, and other medical consequences (Amaro, Arevalo, Gonzalez, Szapocnik, & Iguchi, 2006). Furthermore, due to the lack of culturally tailored substance use interventions, Latino clients often encounter culturally insensitive barriers to treatment delivery (Gil & Vega, 2001) and drop out of substance abuse treatment in greater numbers than individuals from other ethnic groups (Hser, Huang, Teruya, & Anglin, 2004).

Increased time in the United States has been associated with rises in alcohol use among Latino immigrants. Acculturation, and in particular, acculturative stress, has been linked to the adoption of these behaviors (Lara, Gamboa, Kahramanian, Morales, & Hayes Bautista, 2005). Detrimental patterns of increased alcohol use among acculturating Latino immigrants appears to have a stronger relative effect on women than on men (Gfroerer & Tan, 2003). It is suggested that because Latino men are predisposed to having a higher prevalence of alcohol use, the effects of acculturation lead to a closing of the gap between in alcohol use between genders (Lara et al., 2005).

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Increases in alcohol use among Latino immigrants have also been linked to losses of cultural practices and values (Schwartz, Unger, Zamboanga, & Szapocznik, 2010). In Latino culture, religiosity is considered to be a central value, guiding attitudes, behavior, and even social interactions (Abraido-Lanza, Vasquez, & Echeverria, 2004; Steffen & Merrill, 2011). Despite decades of research on the influence of other Latino cultural values such as *respeto* and *familismo* (Kail & Elberth, 2003), questions remain as to how religion, and religious coping specifically, influences the alcohol use behaviors of Latinos. The present study investigates relations between religious coping, acculturative stress, and alcohol use; specifically we examine a hypothesized moderating effect of religious coping on the relationship between acculturative stress and alcohol use among recent Latino immigrants living in Miami-Dade County, Florida.

Theoretical Framework

The investigation is guided by the stress process model (Pearlin, Lieberman, Menaghan, & Mullan, 1981), which has become a key theoretical framework for conceptualizing health disparities and risk and protective factors among minority groups. The basic premise of the model is that health outcomes related to stress are contingent not only on the extent of stress exposure, but also involve social and personal resources (e.g., religious coping) that serve as moderating influences on the link between stress and health outcomes (Pearlin, 1989).

The Present Study

The overarching aim of the present study was to identify whether distinct religious coping mechanisms moderated the relationship between acculturative stress and alcohol use behaviors among recent Latino immigrants. Four research questions and hypotheses were tested: (1) Are experiences of acculturative stress related to increased alcohol use behaviors among recent Latino immigrants? (H_1) Latino immigrants with higher acculturative stress will have higher rates of alcohol use. (2) Are positive (adaptive) and negative (maladaptive) religious coping mechanisms associated with alcohol use in this population? (H_2) Latino immigrants who use more positive religious coping will experience lower rates of alcohol use, whereas those who use more negative religious coping will have higher rates of alcohol use. (3) Is the use of positive and negative religious coping associated with levels of acculturative stress experienced by recent Latino immigrants? (H_3) Latino immigrants utilizing positive religious coping will experience lower rates of alcohol use, whereas those utilizing more negative religious coping will have higher rates of alcohol use. Lastly, (4) Do positive and negative religious coping mechanisms moderate the relationship between acculturative stress and alcohol use behaviors among recent Latino immigrants. (H_4) The relationship between acculturative stress and alcohol use will be weaker among Latinos who utilize more positive religious coping and stronger among Latinos who utilize more negative religious coping. We next introduce literature that informs our research questions and hypotheses.

BACKGROUND

Acculturative Stress

Acculturative stress consists of psychological or social stressors experienced by individuals due to an incongruence of beliefs, values, and other cultural norms between their country of origin and country of reception (Cabassa, 2003). This form of stress is usually triggered by factors such as language barriers; difficulties assimilating to beliefs, values, and norms of the dominant culture; and perceived feelings of inferiority and discrimination (Berry, 1997). Undocumented immigration status and socioeconomic issues have been cited to be the main sources of acculturative stress among Latino immigrants (Finch & Vega, 2003). Acculturative stress is linked to an array of negative health outcomes including anxiety, depression, and alcohol abuse (Crockett et al., 2007).

Religious Coping

Extensive evidence suggests that for many individuals, religion comes to the forefront as a way to deal with stress (Ano & Vasconcelles, 2005; Harrison, Koenig, Hays, Eme-Akwari, & Pargament, 2001; Koenig, McCullough, & Larson, 2001). Religious coping is defined as "the use of cognitive and behavioral techniques, in the face of stressful life events, that arise out of one's religion or spirituality" (Tix & Frazier, 1998: p. 411). Pargament's (1997) review of the psychology of religion revealed that religious coping styles are conceptually distinct from nonreligious coping styles and uniquely influence psychosocial health above and beyond the effects of nonreligious coping. Furthermore, religious coping styles have been found to be better predictors of health outcomes of stressful situations than measures of religiosity alone (e.g., frequency of church attendance, involvement in church-related activities, frequency of prayer).

The literature distinguishes between two divergent patterns of religious coping. Positive religious coping is characterized as an adaptive coping strategy that includes: (a) religious forgiveness, (b) seeking spiritual support, (c) reframing of stressful event to view it as a potentially beneficial opportunity for growth and learning, and (d) finding meaning in a negative situation through spiritual connectedness with *a higher power* (Ano & Vasconcelles, 2005; Hill & Pargament, 2008; Pargament, Smith, Koenig, & Perez, 1998). Positive religious coping is associated with improved physical and mental health outcomes including decreased alcohol use (Ano & Vasconcelles, 2005; Stoltzfus & Farkas, 2012).

In contrast, negative religious coping mechanisms, also referred to in the literature as spiritual struggles, include: (a) attributing a distressful situation as a punishment from a higher power, (b) strained relationships with one's congregation and clergy, and (c) demonic appraisals of a stressful situation. Negative religious coping has been associated with decreased mental and physical health functioning including higher rates of alcohol use (Ano & Vasconcelles, 2005; Drerup, Johnson & Bindi, 2011).

Latinos have been found to use religious coping mechanisms more frequently than their non-Latino White counterparts (Abraido-Lanza et al., 2004). The literature suggests that less acculturated Latinos use religious coping styles more frequently than their more acculturated counterparts (Mausbach, Coon, Cardenas, & Thompson, 2003). Thus, religious coping may

play a particularly relevant role in the acculturative stress and alcohol use behaviors of recent Latino immigrants. Although numerous studies have documented the relationship between aspects of religious involvement and alcohol use (Hodge, Andereck, & Montoya, 2007), the bulk have been conducted among African Americans, women, and aging populations (Prado et al., 2004; Lewis-Coles & Constantine, 2006). Little is known about the relationship between religious coping and acculturative stress among Latino immigrants. The few existing studies among Latinos have focused primarily on Mexican (Finch & Vega, 2003) and Dominican (Abarido-Lanza et al., 2004) immigrant samples. As such, there is a scarcity of research on the role that religious coping plays in the lives of other Latino groups such as Caribbean, Central and South Americans (Dunn & O'Brien, 2009).

Furthermore, the investigations that have been completed have yielded conflicting findings. Finch and Vega (2003) investigated Mexican-origin adults (*n*=3012) and found that participants who engaged in religious support seeking behaviors experienced less acculturative stress and were less likely to report being in poor health. In a more recent study that utilized the same data set, Ellison, Finch, Ryan, & Salinas (2009) reported that religious involvement appeared to exacerbate the effects of acculturative stress on the depressive symptoms of these Latinos. The present investigation seeks to expand on the current literature and shed light on how religious coping processes are linked to acculturative stress and alcohol use behaviors among recent Latino immigrants.

METHODS

Procedures

This cross-sectional investigation utilized wave 2 data from a longitudinal study examining sociocultural determinants of health among adult Latino immigrants. Specifically, baseline data from the parent study pertained to participants' behaviors *prior to* immigration to the United States; wave 2 collected data on participants' behaviors *after* immigration. This study was approved by the institutional review board of a large university in Miami-Dade County, Florida. Eligibility criteria included: (a) being a Latino adult, (b) having recently immigrated to the United States from a Latin American Country (i.e., within 1 year prior to baseline), (c) intending to stay in the United States for at least 3 years—to facilitate data collection. Consent procedures and all interviews were conducted in Spanish. Data was collected through the use of computer assisted personal interviews.

Participants were recruited through respondent driven sampling (RDS). RDS is an effective strategy for recruiting participants from hidden or difficult-to-reach populations (Salganik & Heckthorn, 2003) such as recent immigrants, particularly those with undocumented immigration status. RDS approach involves asking each participant (*the seed*) to refer three other individuals in his/her social network who met the eligibility criteria for the study and consented to be interviewed. Those participants were then asked to refer three other individuals. The procedure was followed for seven legs for each initial participant (seed), at which point a new seed would begin, thus limiting the number of participants that were socially interconnected. This process was undertaken in an effort to avoid skewing the respondent sample (Salganik & Heckthorn, 2003).

Seed participants were recruited through announcements posted at several community-based agencies that provide legal services to refugees, asylum seekers, and other documented and undocumented immigrants in Miami-Dade County. Information about the study was also disseminated at Latino community health fairs and neighborhood activity locales (e.g., domino parks in the Little Havana section of Miami). Announcements were also posted in Latino communities and on websites such as *CraigsList.org* and an employment website that Latinos access to find work in Miami-Dade County (see De La Rosa, Babino, Rosario, Valiente, & Aijaz, 2012, for comprehensive description of recruitment efforts).

Sample

The present study used a sample of 415 recent Latino immigrants (50.8% females; 49.2% males). At the wave 2 interview all participants were Latino immigrants who had been living in the United States for less than two years. The sample used for the present study is unique in several ways. It consists of a distinctive and understudied sample of newly arrived Latino immigrants. The participant's recent immigration status is an important element of the research design as religious coping has been found to be used more readily among less acculturated Latinos than in their acculturated counterparts (Mausbach et al., 2003). Lastly, the diverse Latino ethnic makeup of the study population is characteristic of the South Florida population (U.S. Census, 2011b).

The primary motives for immigration reported by participants were economic reasons (54.5%), followed by reuniting with family members (25.5%), political (9.2%), and other (10.6%). The ages of the participants ranged from 19 to 42 years (*M* age = 28.68, *SD* = 5.10). The highest education levels reached were as follows: 4% post graduate degree, 13% college degree, 35% some college, 38% high school or equivalent degree, and 10% less than a high school. Participants' reported average annual income was $14,124 (*SD* = $12,411, *Median*= $12,000).

In terms of ethnic classification, the most prominent ethnic group was Cubans at 49.9%, followed by South Americans (27.7%), Central Americans (21.2%) and Other Caribbean (1.2%). Approximately 80% of participants were documented immigrants, while 20% were undocumented.

Measures

The following variables were measured in the present study: (a) degree of acculturative stress in the past 12 months; (b) use of religious coping mechanisms (positive and negative) in the past 12 months; (c) problematic alcohol use in the past 12 months; and (d) quantity and frequency of alcohol use behaviors in the past 90 days. Based on the aforementioned literature, the following covariates were included in the research model: (a) income, (b) education, (c) documentation (immigration) status, and (d) gender (e) baseline estimates of pre-immigration alcohol use.

Sociodemographics—A demographics form assessed, in part, participant time in the U.S., age, level of education (1 = *less than high school*, 2 = *high school*, 3 = *some training / college after high school*, 4 = *bachelor's degree*, 5 = *graduate / professional studies*), and

income. For the present study an income variable was computed by dividing total household income in the past 12 months by the total number of people dependent on that income

Documentation status—Documentation status was measured by immigration category. Participants were asked to report their current legal status in the United States. A total of fourteen possible categories were provided, including temporary or permanent resident; tourist, student, temporary work visa; and undocumented or expired visa. These categories were then recoded into a dichotomous variable of *documented* (1) or *undocumented* (0) immigration status.

Acculturative Stress—The validated Spanish version of the immigration stress subscale of the *Hispanic Stress Inventory Scale –Immigrant Version* (Cervantes, Padilla, & Salgado de Snyder, 1990) was used to measure acculturative stress. This scale is a measure of psychosocial stress-event experiences for Latino immigrants. The instrument is in a 5-point Likert scale format. The participant reports whether or not he/she experienced a particular stressor. If the stressor was experienced, then a subsequent follow-up question is asked regarding the appraisal of how stressful that particular event was to the respondent (1 = *not at all* to 5 = *extremely*). This scale has been widely used with predominantly Mexican immigrant samples (Ellison et al., 2009; Loury & Kulbok, 2007). However, the existing literature suggests that factors such as country of origin and the context of a receiving community may have distinct impacts on the acculturative stressors experienced by recent Latino immigrants (Schwartz et al., 2010). As such, exploratory factor analysis (EFA) was performed to determine whether the scale was suitable for the multi-ethnic Latino immigrant population in South Florida. A revised 7-item scale based on the results of exploratory factor analysis (see Results section below) was used in the present study. Example items from the revised scale include: (a) Because of my poor English, it has been difficult for me to deal with day to day situations, (b) I felt guilty about leaving my family and friends in my home country, (c) *I've been questioned about my legal status*. Given the very high correlation between frequency and appraisal of stress in the current sample (r = .83), the sum of the immigration stress frequency and immigration stress appraisal scores was used to measure overall acculturative stress.

Alcohol Use—A three indicator latent variable was used to measure alcohol use. An advantage of using latent variables is the ability to measure multiple dimensions of a behavior. Latent variables are also free of random error because it is estimated and removed (Bollen, 1989). The three indicators used in measuring the alcohol use index consisted of: (a) hazardous/harmful drinking patterns in the past 12 months, (b) frequency of alcohol use in the past 90 days, (c) quantity of alcohol use in the past 90 days.

Hazardous/harmful drinking patterns were measured through the validated Spanish version of the Alcohol Use Identification Test (AUDIT; Babor, Biddle-Higgins, Saunders, & Monteiro, 2001). The AUDIT is a 10-item screening questionnaire containing 3 questions on the amount and frequency of drinking, 3 questions on alcohol dependence, and 4 on problems caused by alcohol. Indices of internal consistency, including Cronbach's α and item-total correlations, are generally 0.80 or higher (Allen, Litten, Fertig, & Babor, 1997). Similar reliability estimates for the AUDIT were obtained in the present study (α = 0.81).

Frequency and quantity of alcohol use in the past 90 days was measured through the validated Spanish version of the Timeline Followback Interview (TLFB; Sobell & Sobell, 1992). TLFB was used to collect data on substance use in the last 90 days prior to assessment. With regard to alcohol, daily use information was collected in number of standard drinks per day. Frequency of alcohol use was calculated by summing the total number of days alcohol was consumed in the 90 day window. Quantity of alcohol use was calculated by average number of drinks that were consumed on days that alcohol was ingested in the past 90 days.

Religious Coping—A validated Spanish version of the Brief RCOPE Scale (S-BRCS) was used to measure positive and negative religious coping (Pargament et al., 1998; Martinez & Sousa, 2011). This scale is a widely used measure of religious coping that separates the construct into positive and negative religious coping subscales. It is a 14-item measure scored on a 4-point Likert scale with responses ranging from 1 = *not at all*, 2 = *somewhat*, 3 = *quite a bit*, and 4 = *a great deal*. Example items from the positive coping subscale include: (a) *Sought help from God in letting go of my anger* and (b) *Looked for a stronger connection with God*. Example items from the negative coping subscale are: (a) *Wondered what I did for God to punish me* and (b) *Questioned God's love for me.* Prior to scale administration, participants were informed that for items stating the term “God,” what is being referred to is a higher being that is relevant to them. Both subscales of the S-BRCS have been shown to have high internal consistency: positive religious coping subscale (α = 0.90) and negative religious coping subscale (α = 0.81; Pargament et al., 1998). In the present study, the S-BRCS also demonstrated good internal consistency: positive religious coping (α = .95), negative religious coping (α = .83).

Analytic Plan

Preliminary analysis—The preliminary analysis for this study consisted of five steps. First, an exploratory factor analysis (EFA) was performed on the original 18 items of *Hispanic Stress Inventory Scale –Immigrant Version* using SPSS version 18 (Cervantes, Padilla, & Salgado de Snyder, 1990). The EFA was conducted based on previous research suggesting that specific features of the immigration process (i.e., context of the receiving community) may influence acculturative stressors experienced by recent Latino immigrants (Schwartz et al., 2010). As such, the EFA was used to determine the validity of the instrument based on the target population of the study (multi-ethnic sample of recent Latino immigrants living in Miami, FL.).

Second, continuous variables were analyzed to determine whether they violated the assumption of normality. To ensure relatively normally distributed variables, Kline (2005) suggests cutoffs of absolute values of 3.0 and 8.0 for skewness and kurtosis, respectively. A positively skewed distribution was found for alcohol use quantity, alcohol use frequency, and income. A square root data transformation was used to arrive at an approximately normal distribution for these variables. The transformed variables were used in the subsequent analyses.

Third, a bivariate correlation matrix was computed to assess potential multicollinearity (i.e., when two or more predictors are highly correlated) among key observed study variables. Tabachnick and Fidell (2007) suggest correlation coefficients of less than .70 between predictors to avoid multicollinearity.

Fourth, confirmatory factor analyses (CFA) were conducted to test if hypothesized indicators adequately represented the latent construct for alcohol use (Hancock & Freeman, 2001; Kline, 2005).

Fifth, in order to adequately control for pre-immigration alcohol use it was necessary to test for measurement invariance across time for the pre- and post-immigration alcohol use latent constructs. Tests of measurement invariance were conducted to ensure the expected values for the indicators of the latent constructs were equal across both time points (Bauer & Curran, 2011; Meredith, 1993). Testing for measurement invariance consisted of tests of configural and metric invariance (Meredith, 1993). Configural invariance establishes that the same number of factors and the same pattern of factor loadings characterize each group or time point (Bauer & Curran, 2011). A measurement model testing for configural invariance would place no constraints, indicating factor pattern coefficients are free to vary. Metric invariance is tested by examining the equivalence of factor loadings across the pre-immigration and post-immigration estimates of the alcohol use index values. This is achieved by imposing equality constraints across both time points. Fit differences between the constrained and unconstrained models were evaluated using two standard indices: the difference in chi-square values ($\Delta\ ^2$), and the difference in CFI (Δ CFI) values. In each model comparison, for the null hypothesis of invariance across groups to be statistically rejected, both of the following criteria had to be met: $\Delta\ ^2$ significant at $p < .05$ (Byrne, 2001), and Δ CFI > .01 (Cheung & Rensvold, 2002).

Primary analysis (Hypothesis Testing)—Primary analyses were conducted using MPlus 6.0 (Muthén & Muthén, 2010). Structural equation modeling (SEM) and path analysis were used in testing the four study hypotheses (See Figure 1a). Hypotheses 1 (H_1) stated that Latino immigrants with higher acculturative stress would have higher rates of alcohol use. Hypothesis 2 (H_2) suggested that Latino immigrants who used positive religious coping at higher rates would experience lower rates of alcohol use, whereas those with higher levels of negative religious coping would have higher rates of alcohol use. Both H_1 and H_2 were tested independently using SEM. *Multiple Indicators, Multiple Causes* (MIMIC; Bollen, 1989) modeling was used to control for all hypothesized covariates (pre-immigration alcohol use, income, education, documentation status, and gender). Through MIMIC modeling, the predictor and outcome variables were all regressed on the covariates in the model. Overall model fit was evaluated following the recommendations of Bollen and Long (1993) using a variety of global fit indices, including indices of absolute fit and fit indices with a penalty function for lack of parsimony. These include the traditional overall chi square test of model fit (which should be statistically non-significant; note that for models with over 400 cases, the chi square test is almost always statistically significant), the Root Mean Square Error of Approximation (RMSEA; which should be less than 0.08 to declare satisfactory fit), the Comparative Fit Index (CFI; which should be greater than 0.95), and the standardized root mean square residual (which should be less than 0.05).

Hypothesis 3 (H_3) stated that Latino immigrants who use positive religious coping at higher rates would experience lower rates of acculturative stress, whereas those with higher levels of negative religious coping would have higher rates of acculturative stress. A path model analysis was conducted to examine the association between religious coping mechanisms and acculturative stress while controlling for the potential influence of the aforementioned covariates through MIMIC modeling. The hypothesized model was just-identified or saturated. This type of fit occurs when the number of free parameters exactly equals the number of known values; therefore, it is a model with zero degrees of freedom. As a result, model fit indices are not available for just identified models. Thus, path coefficients for the hypothesized model were examined.

Hypothesis 4 (H_4) stated that the relationship between acculturative stress and alcohol use would be weaker among Latinos who report using positive religious coping and stronger among Latinos who report using more negative religious coping. This hypothesis was tested by creating interaction terms that were entered into the structural model to assess if religious coping mechanisms moderated relations between acculturative stress and alcohol use. To prevent problems with multicollinearity, all predictor and moderator variables were centered (Frazier, Tix, & Barron, 2004). Overall model fit for the structural model was evaluated using the previously mentioned fit indices.

Results

Preliminary results

Exploratory factor analysis—Prior to conducting the exploratory factor analysis with the Hispanic Stress Inventory, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was performed in order to verify that data was suitable for EFA. The KMO value was .724 ($p < .001$), exceeding the recommended value of .6 (Kaiser, 1974). Four possible components of the Hispanic Stress Inventory Scale were identified. After conducting principal component analysis, it was found out that 4 components had eigenvalues exceeding 1, explaining 17%, 14%, 8%, and 7% of the variance respectively. Hence, it was decided to retain components 1 and 2 as they explained the most variance of the acculturative stress construct (31% of the variance). The rotation method for the two-factor solution was Oblimin with Kaiser normalizations. Factors loadings higher than .5 for pattern and structure matrixes were selected as strong loadings that better suited each of the two components (Osborne & Costello, 2009). Component 1 contained 7 items with factor loadings higher than .5, while component 2 had only 3 items with .5 factor loadings or higher. For the purposes of the present study, component 1 measuring interpersonal acculturative stress was utilized as it was found to be the most suitable component for the study's target population.

Descriptive statistics—Table 1 shows the means, standard deviations, and proportions for all study variables. A bivariate correlation matrix, including all key observed variables used in the analyses is also presented in Table 1. Multicollinearity was not evidenced by correlations coefficients.

Pre- and post-immigration alcohol use measurement models—CFA results suggested that the hypothesized indictors adequately represented the latent constructs in the structural model (pre-immigration and post-immigration alcohol use). For pre-immigration alcohol use index, the factor loadings suggested that the three indicators loaded strongly onto the latent construct (β estimates ranging from .79 to .89). Eighty percent of variability in alcohol use index was explained by the harmful/hazardous alcohol use indicator. Seventy-six percent was explained by quantity of alcohol use. Sixty-two percent of variability was explained by frequency of alcohol use. For post-immigration alcohol use index, the factors also loaded strongly onto the latent construct (β estimates ranging from .82 to .87). Seventy-three percent of variability in the alcohol use index latent variable was explained by the harmful hazardous alcohol use indicator. Seventy-five percent was explained by quantity of alcohol use. Sixty-eight percent of variability was explained by frequency of alcohol use.

The measurement model testing for configural invariance across the pre- and post-immigration alcohol use index latent construct had adequate model fit in accordance to the fit index criteria previously described $\chi^2(5, 415) = 20.56$, $p <. 01$, RMSEA = .087, CFI = .99, SRMR = .03. The model testing metric invariance did not result in a significant difference in fit from the configural model, $\chi^2(7, 415) = 26.31$, $p < .001$, RMSEA = .082, CFI = .99, SRMR = .03. When comparing the constrained and unconstrained models, no significant differences were found $\Delta\chi^2 = 5.76$, $\Delta df = 2$, ΔCFI= .002, $p > .05$. Given that both configural and metric invariance were established, the pre-immigration alcohol use latent variable was included as a covariate in the research model.

Primary results

Path coefficients for the research models are presented in Figure 1b. Pre-immigration alcohol use, income, education, documentation status, and gender were included as covariates in the models. Results revealed no significant associations between acculturative stress and alcohol use. Thus, H_1, Latino immigrants with higher rates of acculturative stress will have higher rates of alcohol use, was not consistent with the findings. As such, fit indices for the structural model testing H_1 did not indicate good model fit. H_2 stated that Latino immigrants utilizing more positive religious coping would have lower rates of alcohol use, whereas those reporting negative religious coping would have higher rates of alcohol use. The structural model testing this hypothesis yielded good model fit χ^2 (35, 415) = 117.70, $p < .001$, RMSEA = .075, CFI = .956, SRMR = .05. As anticipated, participants with higher levels of positive religious coping (β = -.15, $p = .02$) reported lower scores on the alcohol use index. No significant relationships were found between negative religious coping and alcohol use. H_2 was therefore partially supported. H_3 stated that Latino immigrants utilizing more positive religious coping would experience lower rates of acculturative stress, whereas those utilizing more negative religious coping would have higher rates of acculturative stress. As previously mentioned, the model testing this hypothesis was just identified and thus no model fit indices are available. Examination of the parameter estimates revealed higher levels of acculturative stress were related with more positive (β = .18, $p < .001$) and negative religious coping (β = .14, $p < .01$). H_3 was therefore partially supported by the results. Lastly, we explored the possible moderating effects of positive and negative religious coping on the relationship between acculturative stress and

alcohol use. H_4 stated that the relationship between acculturative stress and alcohol use would be weaker among Latinos who report using more positive religious coping and stronger among Latinos who report using more negative religious coping. The structural model testing this hypothesis yielded good model fit χ^2 (53, 415) = 158.67, $p < .001$, RMSEA = .069, CFI = .946, SRMR = .047. Results indicated a statistically significant interaction effect between acculturative stress and negative religious coping on alcohol use (B = .11, $p = .01$). Participants with high levels of negative religious coping reported more alcohol use when they experienced higher rates of acculturative stress. Conversely, participants reporting low negative religious coping reported lower alcohol use when they experienced higher levels of acculturative stress. No moderating effects were found for positive religious coping, thereby making H_4 partially consistent with study findings.

Covariate Effects

An examination of the covariates indicated that undocumented Latino immigrants used religious coping more frequently than their documented counterparts [positive religious coping (β = -.20, $p < .001$), negative religious coping (β = -.18, $p < .001$)]. Latina women also had higher rates of positive religious coping (β = -.19, $p < .001$) in comparison to Latino males. There were no evident gender differences in levels of negative religious coping. Undocumented immigration status (β = -.32, $p < .001$) and being a female (β = -.11, $p = .02$) were related to experiencing higher levels of acculturative stress. Latino immigrant males reported higher rates of alcohol use behaviors (β = .11, $p = .02$) in comparison to Latina women.

Post Hoc Analyses

Latinos are a very heterogeneous group, and these differences extend to their demography, religious practices, and drinking patterns. For instance Cubans, in comparison to the rest of the U.S. Latino population, are older, have a higher level of education, and higher median household income. Religiosity among Latinos has been found to vary between subgroups (Pew Hispanic Center, 2014). Evidence of religious differences may be particularly salient when comparing recent Cuban immigrants to other Latino subgroups, as Cuba was officially an atheist state following the country's communist revolution from 1959 until as recently as 1992 (Scherer, 2001). Drinking patterns have also been found to vary among Latinos by country of origin (Vaeth, Caetano, & Rodriguez, 2012) with previous studies indicating higher rates of alcohol use among South and Central American Latina women compared to their Mexican counterparts (Chartier & Caetano, 2011). Conversely, Mexican men report higher levels of alcohol use and dependence than South and Central American and Caribbean Latinos. National studies have consistently found Cubans to have the lowest rates of alcohol use quantity and frequency when compared to Latinos of other national origins (Ramisetty-Mikler, Caetano, & Rodriguez, 2010). Findings from previous studies with the present sample point toward distinct drinking patterns between subgroups prior to immigration, with Cuban participants being least likely to engage in alcohol misuse, while South Americans reported the highest levels of alcohol misuse. Equivalent rates of pre-immigration alcohol misuse were found in Central and South Americans (Dillon, De La Rosa, Sastre, & Ibañez, 2013). As such, an additional set of post-hoc analyses were conducted to examine the influence of national origin in the present study's research model.

In order to examine subgroup differences, participants country of origin was recoded into a 3 level categorical variable (*Cuban* = 1, *South American* = 2, and *Central American* = 3). Given the limited number of "Other Caribbean" participants (1.3%), this group was excluded from covariate testing. Two dummy variables were subsequently created using Cubans, representing 50% of the sample, as the referent group.

For the structural model testing H_1 (Latino immigrants with higher rates of acculturative stress will have higher rates of alcohol use), the inclusion of country of birth as a covariate yielded good model fit χ^2 (37, 410) = 133.72, $p < .001$, RMSEA = .080, CFI = .947, SRMR = .049. Results indicated significantly higher rates of alcohol use among Central Americans when compared to Cubans ($\beta = .14$, $p = .03$). No significant differences in alcohol use were found between Cubans and South Americans. Results also revealed no significant differences in acculturative stress by country of origin. H_2 examined associations between positive/negative religious coping and acculturative stress. As previously mentioned, no fit indices were available for this just identified model. Parameter estimates indicated that, as predicated, South Americans reported higher levels of positive ($\beta = .27$ $p < .001$) and negative religious coping ($\beta = .13$ $p = .02$) when compared to Cubans. Similarly, Central Americans also reported more ($\beta = .26$ $p < .001$) and negative religious coping ($\beta = .14$ $p = .04$) when compared to their Cuban counterparts. Levels of acculturative stress did not differ by country of origin. H_3 tested the influence of religious coping on alcohol use. The inclusion of country of origin as a covariate in the model yielded inadequate model fit. Examination of modification indices suggested controlling for country of origin in both pre- and post-immigration alcohol use. Once this adjustment was performed, good model fit was attained χ^2 (44, 410) = 141.63, $p < .001$, RMSEA = .07, CFI = .95, SRMR = .05. Findings indicated significantly higher rates of pre-immigration alcohol use among South Americans when compared to Cubans ($\beta = .30$ $p < .001$). H_4, examining religious coping as a moderator between acculturative stress and alcohol use, could not be examined by country of origin due to insufficient power provided by small sample sizes for some groups (Central American; n=88) in comparison to the number of parameters in the model (Jackson, 2003).

Discussion

This study contributes the literature on the influence of religious coping on the acculturative stress and alcohol use of recent Latino immigrants. Acculturative stress was associated with increased rates of both positive and negative religious coping. Although it was anticipated that only positive religious coping would be positively related to acculturative stress, it stands to reason that experiencing elevated stress levels could trigger an increase in coping mechanisms, be it positive or negative religious coping. Certain Latino immigrant subgroups in the sample were more prone to acculturative stress and the utilization of religious coping. Specifically, female and undocumented participants reported more acculturative stress. These results are consistent with existing literature suggesting that immigration impacts Latina women and undocumented immigrants in a more negative manner with greater levels of stress, lower life satisfaction, and poor health perceptions (Cuellar, Bastida, & Braccio, 2004; Finch & Vega, 2003). Latina immigrant women also used more positive religious coping, whereas undocumented Latino immigrants used positive and negative religious coping more frequently than documented immigrants. Previous studies provide support for

the prominent use of religious coping among vulnerable and disenfranchised populations such as the elderly (Pargament, Koenig, & Tarakeshwar, 2001) and other ethnic minorities such as African Americans (Chatters, Taylor, Jackson, & Lincoln, 2008). Present findings expand the literature by suggesting that religious coping is also a prevalent coping mechanism among Latino immigrants who are experiencing acculturative stress.

Results revealed that Latino immigrants who used more positive religious coping also engaged in less alcohol use behaviors. As such, positive religious coping may be a protective factor in the alcohol use behaviors of recent Latino immigrants. Although no direct effects were found between negative religious coping and alcohol use behaviors, negative religious coping was found to moderate the relationship between acculturative stress and alcohol use. Participants with higher levels of negative religious coping reported more alcohol use when they experienced high levels of acculturative stress.

The present study findings contribute to a growing body of literature examining ways in which maladaptive facets of religiousness and spirituality can exacerbate acute and chronic stressors while making physical and mental health-related problems more debilitating. Negative religious coping has previously been associated with increased rates of anxiety (McConnell, Pargament, Ellison, & Flannelly, 2006), depression, emotional distress (Fitchett, Murphy, Kim, Gibbons, Cameron, & Davis, 2004; Herrera, Lee, Nanyonjo, Laufman, & Torres-Vigil, 2009; Szymanski & Obiri, 2010), lower quality of life, decreased sociability (Chatters, 2000), lower self-esteem (Pargament et al., 1998), and physical health risk behaviors (Rabinowitz, Hartlaub, Saenz, Thompson, & Gallagher-Thompson., 2010) as well as increased risk of mortality (Pargament et al., 2001). Results from the present study suggest negative religious coping may also be a risk factor for engaging in alcohol use behaviors among recent Latino immigrants experiencing acculturative stress.

Limitations

The findings should be interpreted in light of certain limitations. An evident limitation was the use of respondent driven sampling (RDS). Although RDS is successful in recruiting hidden populations, such as undocumented immigrants, who make up 22% of the U.S. Latino population, it does not ensure a representative sample (Passel & Cohn, 2011). Second, the study lacked information concerning the religious affiliation of study participants. According to the Pew Research Center 2013 National Survey of Latinos and Religion, the majority of Latinos in the United States identify as Catholic (55%), followed by Protestant (22%, including 16% that describe themselves as born-again or evangelical), 18% are unaffiliated, and 4% other. These reports suggest that, evangelical Protestantism appears to be gaining adherents in the United States among Latinos (Pew Research Center, 2014). Attitudes, norms and behaviors can differ strongly between religious denominations (Garcia, Ellison, Sunil & Hill, 2013). The Roman Catholic and mainline Protestant (Episcopalian, Presbyterian) Church have a longstanding history of accepting alcohol use in their congregations. Conversely, the more conservative fundamentalist and evangelical Protestant religious groups tend to have strong views against alcohol consumption (Ellison, Bradshaw, Storch, Rote, & Trevino, 2008). In a national study examining demographic predictors of alcohol use attitudes among Latinos, being Protestant predicted increased

negative attitudes about alcohol consumption relative to Catholics (Mills & Caetano, 2010). As such, Latino Protestants have been found to be far less likely to engage in heavy drinking behavior compared to Catholics (Ellison et al., 2008). Given the lack of information on religious affiliation in the present study outcomes, there is an important and understudied possibility of significant variations in alcohol use and religious coping styles on the basis of religious denomination.

Lastly, because this study utilized a cross-sectional research design, our findings are correlational and do not establish a causal link between acculturative stress, religious coping, and alcohol use. Future longitudinal studies are needed in order to continue to shed light on the long-term influence of religious coping on relations between acculturative stress and alcohol use among Latino immigrants.

Implications and Future Research Directions

Despite its limitations, this study casts light on the impact that religious coping has on the adaptation process of recent Latino immigrants. Immigration is a complex social, cultural, and political process. Despite growing numbers of Latinos immigrating to the United States, challenges in understanding the service needs of this population have never been greater (Alegria et al., 2006). This study contributes to the limited knowledge on the relations between religious coping, acculturative stress, and alcohol use among recent Latino immigrants. The current findings suggest a need for greater attention to religiosity as a Latino cultural value in substance abuse programs targeting Latinos. These results also signify a step toward expanding scientific understanding of function and effect of religious coping among the largest and fastest growing immigrant group in the United States.

Future investigations should aim to understand culturally specific religious coping styles among Latinos. Previous studies on religious coping among Latinos have viewed the construct from a conventional religious perspective. Current standardized scales measuring religious coping have been constructed from a Judeo-Christian perspective. However, among Latinos, religious/spiritual traditions are quite varied (Gallant, Spitze, & Grove, 2010). Gloria and Peregoy (1996) report that the three most prominent traditional or folk religious belief systems among Latinos living in the United States are: (a) Curanderismo, (b) Espiritismo, and (c) Santería. Gonzalez-Whippler (2001) estimates over a hundred million practitioners of Santería alone in Latin America and the United States. Future studies are needed to investigate the function and effect that these beliefs and practices have on the coping process of Latinos. This knowledge could lead to an enhancement in culturally relevant approaches that identify, sustain, and incorporate religious coping as a Latino cultural value into grounded interventions with this population.

In light of the differences in religious coping styles and alcohol use behaviors observed across Cuban and South and Central American recent Latino immigrants in this study, there also appears to be a need to pay closer attention to religious variations in alcohol use, as well as other health practices, across Latino national origin groups. Existing studies examining ethnic/racial variations in religious coping and health behaviors have focused on comparing Whites, Blacks, and Latinos (Horton & Loukas, 2013). Among Latinos, Mexican samples have primarily been utilized in examining associations between religious coping and health

risk behaviors, while only a limited number of recent studies have included Cuban and South and Central American participants (Allen et al., 2014; Mills & Caetano, 2010). There appears to be a pressing need to better understand the aspects of religiousness that can curtail involvement in harmful health behaviors across these Latino subgroups as they have been vastly understudied in the literature, yet are becoming largely representative of the U.S. Latino population (Pew Hispanic Center, 2012).

Overall, gaining a better understanding of the stress and coping processes in the lives of recent immigrants can help inform public policy and tailor prevention and intervention programs by targeting the specific needs of this population. Moreover, this knowledge can assist clinicians and service providers in adequately empowering Latino immigrants to become healthy members of their host societies (Yakushko, Watson, & Thompson, 2008).

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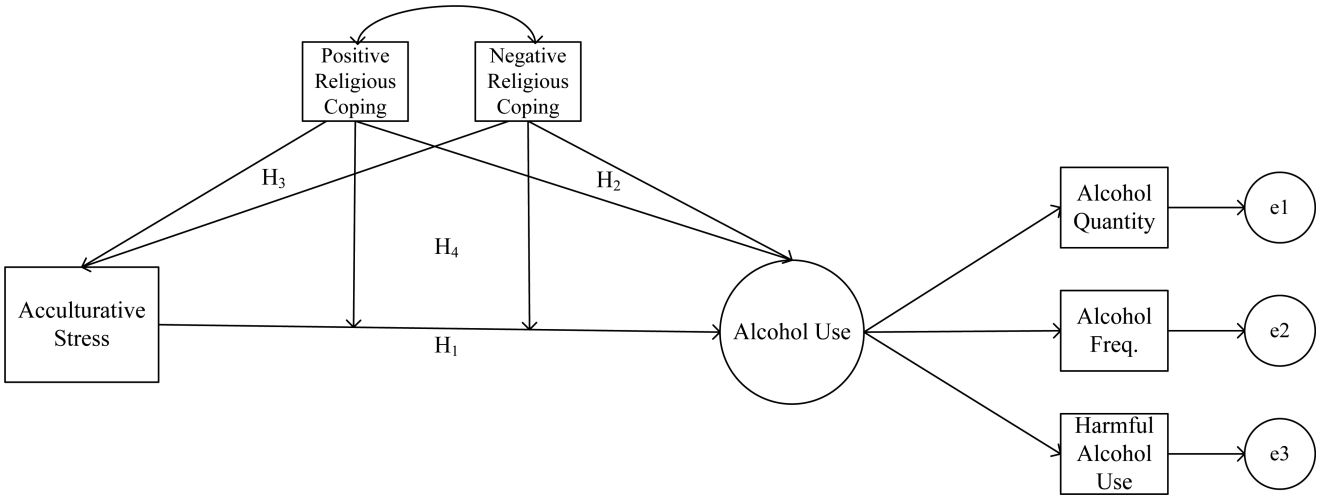
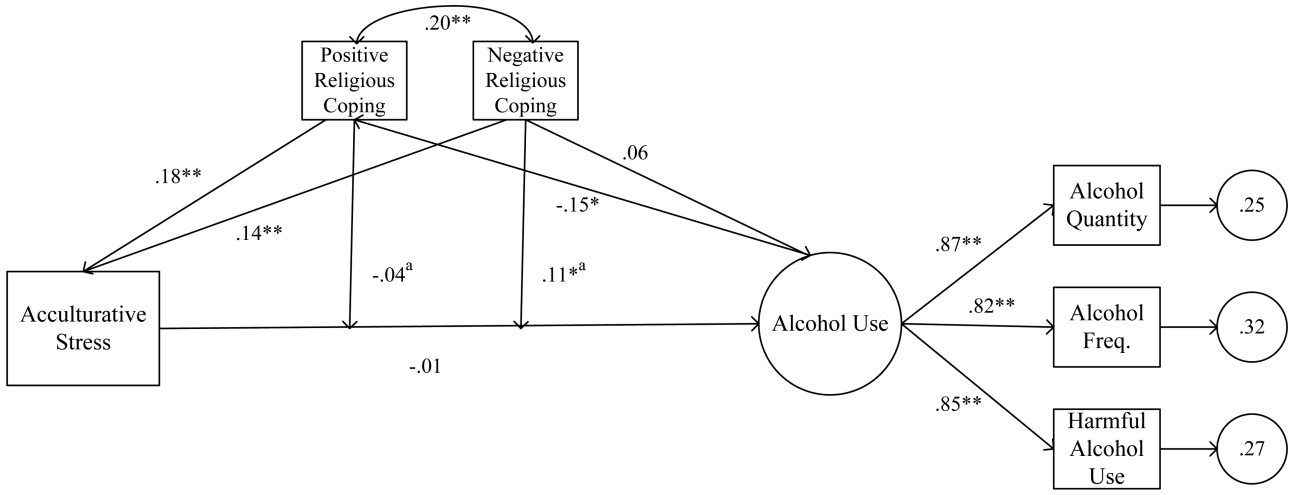


Figure 1a.
Research Model Testing the Relations between Acculturative Stress, Religious Coping, and Alcohol Use



Note. [a] Parameters reported in unstandardized path coefficients; *= $p < .05$; ** = $p < .01$.

Figure 1b.
Results of Research Model Testing the Relations between Acculturative Stress, Religious Coping, and Alcohol Use

Table 1

Correlations of Key Observed Variables

	Variable	M	SD	1	2	3	4	5	6
1	Pos. Rel.Coping	2.51	0.95	1					
2	Neg. Rel. Coping	1.42	0.52	0.25**	1				
3	Accultur. Stress	5.05	2.50	0.25**	0.20**	1			
4	Alcohol Quant.[a]	4.93	5.07	0.05	0.02	−0.02	1		
5	Alcohol Freq. [a]	8.16	12.99	0.02	−0.02	−0.02	0.71**	1	
6	Prob. Alcohol Use	4.22	4.73	0.02	−0.04	−0.02	0.74**	0.72**	1

Note.

** $p < .01$;

[a] Non-transformed mean and standard deviation values are presented.