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Abstract

U.S. Hispanics, especially women, experience a disproportionate amount of disease burden for depression. This disparity among Hispanic women necessitates examination of factors associated with depression. The objective of this study was to use an adaptation of the Stress Process Model to test if self-esteem mediated the relationship between Hispanic stress and depressive symptoms. Data for this secondary analysis were from a previous randomized-control HIV prevention trial. Participants were 548 Hispanic women (19-52 years). Data collection measures included the: Center for Epidemiological Studies – Depression Scale (CES-D), Rosenberg Self-Esteem Scale (RSE), and Hispanic Stress Scale (HIS). The bootstrap method in Mplus 6 was used to test mediation. Results indicated that self-esteem was inversely related to depression and Hispanic stress was found to be positively related to depression. Self-esteem partially mediated the relationship between stress and depression. Strategies to improve/maintain self-esteem should be considered in future interventions for Hispanic women with depression.

Keywords: Latinas/Hispanics, depression, CES-D, Hispanic stress, self-esteem

Predictors of Depressive Symptoms among Hispanic Women in South Florida

In general, U.S. Hispanics experience health disparities related to the identification, treatment, and consequences of depression (Lewis-Fernández & Kleinman, 1994). Hispanic, meaning a person of Latin/ South American, or Spanish heritage, is an all-inclusive term and it must be noted that many different subgroups exist and could have considerable differences regarding their experience with depression including amount of time lived in the U.S. (Weinick, Jacobs, Stone, Ortega, & Burstin, 2004). Depression is defined as a mental disorder with symptoms such as depressed mood, loss of interest, low self-worth, disturbed sleep or appetite, low energy, and poor concentration that leads to difficulties in a person's ability to take care of themselves (World Health Organization, 2010). There is conflicting evidence on whether U.S. Hispanics have a higher prevalence of depression than other U.S. racial and ethnic groups (Caetano & Cunradi, 2003; Delgado et al., 2006). However, Hispanics are less likely to have access to or utilize physical and mental health care services and are less likely to have their depressive symptoms identified and treated (Schiller, 2012). The lack of culturally appropriate health care services to correctly identify depressive symptoms for Hispanic populations puts them at disproportionate risk compared to other populations for unidentified and untreated depression and its consequences. This is particularly true for Hispanic women, who are more likely to experience depressive symptoms than men (Centers for Disease Control and Prevention, 2010). The literature shows that women are twice as likely to suffer depression as compared to men and in several cases the diagnosis is often associated with somatic complaints. These types of complaints serve as barriers to establishing effective prevention strategies among these women. Also, depressed women are more accepting of their symptoms, have higher thresholds

for suffering and for not seeking treatment for their symptoms (Afifi, 2007; Amin & Bentley, 2002; Centers for Disease Control and Prevention, 2010; Ferrer, Cianelli, & Peragallo, 2004).

Depression is one of the factors that increase a woman's vulnerability to acquire HIV (Brown et al., 2006; Cheng & Chan, 2007; DiClemente et al., 2001). Klein, Elifson, and Sterk (2008) stated that the presence of depressive symptoms is an aspect that adversely affects women's attitudes towards condom use and increases HIV risk behaviors. This relationship can be associated with the fact that people with high levels of depressive symptoms give less value to their lives, grounded on the feeling of hopelessness that surrounds them, and they are less willing to participate in behaviors that protect against HIV acquisition (Cheng & Chan, 2007; Myers et al., 2002; Van der Does, 2002).

The stress process, as described by Pearlin, Menaghan, Morton, and Mullan (1981), has been used to conceptualize the interacting relationships of stress, self-esteem, and depression in the unique cultural context of Hispanic women (Berry, 1997; Stroup, Lawrence, & Trevino, 1992). The stress process is conceptualized into three domains: 1) source of stress, 2) mediators of stress, conditions that can alter the impact of the sources of stress, and 3) manifestation of stress resulting in physical and psychological symptoms (Pearlin et al., 1981). In the stress process, stress and self-esteem may be independent of depressive symptoms, and self-esteem may be a mediator of the relationship between stress and depressive symptoms. The following paragraphs describe the literature that link studies between 1) Hispanic stress and depressive symptoms, 2) self-esteem and depressive symptoms, and 3) Relationship Pathways in the stress-process model.

Hispanic stress describes events that are often experienced by immigrants or members of non-majority ethnic groups, specifically for Hispanics. Hispanic stress is often defined by

occupational/economic stress, marital stress, immigration stress, and family/culture stress factors. Previous studies have found that these Hispanic stress factors are related to depression (Cervantes, Padilla, & Salgado de Snyder, 1991; González, Haan, & Hinton, 2001; Posner, Stewart, Marín, & Pérez-Stable, 2001). In a study conducted by De Santis, Gonzalez-Guarda, and Vasquez (2012), they depression and Hispanic stress were significantly correlated ($r = 0.33$). Despite evidence for the link between components of Hispanic stress and depression through the stress process model for Hispanic men, little research has been conducted to test their relationships among Hispanic women.

Self-esteem has been defined as a continuum of self-worth (Rosenberg, 1965). Self-esteem is inversely related to depressive symptoms among Hispanic women (González-Guarda, Peragallo, Vasquez, Urrutia, & Mitrani, 2009; Rosenberg, 1965). Various researchers have concluded that self-esteem is inversely related to depressive symptoms in Hispanics (De Santis et al., 2012; González-Guarda et al., 2009). As previously mentioned in the study conducted by De Santis et al. (2012), the sample was comprised of almost exclusively immigrant adult Hispanic men living with HIV. The sample in the study conducted by González-Guarda et al. (2009) was comprised of adult Hispanic women, the great majority were immigrants. In both of these studies, depressive symptoms were measured by the Center for Epidemiological Studies – Depression Scale (CES-D) and self-esteem by the Rosenberg Self-Esteem Scale (1965). Although these studies provide support for the strong inverse relationship between self-esteem and depression among Hispanic men and women, they were limited to main effect analyses that did not explore multiple relationship pathways in which stress, self-esteem and depression may be related.

Self-esteem is one common theoretical mechanism through which stress might influence depression (Pearlin et al., 1981). Several studies described above have linked stressors unique to Hispanics and self-esteem to depression, but only one study was found that attempted to link these constructs using a stress process model in which self-esteem mediated the link between stress and depressive symptoms (Land & Hudson, 2004). Land and Hudson (2004) conducted a cross-sectional purposive sample of 154 Latina AIDS caregivers. The researchers found that low self-esteem predicted depression for Latinas, and that self-esteem partially mediated the relationship between stress of care giving and depression.

Purpose

The current study was designed to expand understanding of Hispanic Stress, Self-esteem, and Depressive Symptoms and the stress process model for Hispanic women. The objectives of the current study were to 1) evaluate the relationship of Hispanic stress and self-esteem to depressive symptoms among Hispanic women and 2) examine if self-esteem mediated the relationship between Hispanic stress and depression. If distinct predictors of depressive symptoms among Hispanic women can be identified, then health care professionals, and especially nurses who care for this population, would be better prepared to identify and provide appropriate treatment for Hispanic women with depression.

Methods

Design

Participants

Baseline data ($N = 548$) from a randomized trial of Salud-Health, Educación- Education, Prevención- Prevention, Autocuidado- Self-Care (SEPA) were used for this study (Peragallo, Gonzalez-Guarda, McCabe, & Cianelli, 2012). SEPA was a culturally tailored HIV prevention

program specifically designed for Hispanic women. Eligibility criteria for the study included identifying oneself as a female Hispanic and being sexually active within the past 3 months. Participants were recruited from 1) a community-based social service organization for Hispanics, 2) an urban Florida Department of Health site, 3) fliers posted in the community, and 4) public service messages delivered via radio and television. Nearly three quarters (74%) of women in this sample reported their health as either good or very good in the past three months. They represented 22 countries of origin with the highest proportions from Colombia (34%), Cuba (13%), and Peru (8%). Of the 548 women, 343 (63%) reported they were uninsured and 369 (67%) reported being unemployed at the time of the data collection. Twenty-two percent of women had no children and 57% had 1 or 2 children. **Monthly family income was reported in the following categories: a) below \$1000 (151 women or 28%), b) between \$1000 and \$1999 (224 women or 41%), c) between \$2000 and \$2999 (100 women or 18%), d) between \$3000 and \$3999 (43 women or 8%), and e) greater than \$4000 (24 women or 4%). Six women (1%) did not report their income.** Table 1 presents additional characteristics of the Hispanic women in the current study.

Data Collection Procedures

The study was approved by the Institutional Review Boards of The University of Miami in Coral Gables, Florida and The Florida State Department of Health in Tallahassee, Florida. Data was collected through standardized, face-to-face interviews, which were conducted in the preferred language (Spanish or English) of the participant by bilingual female assessors between January 2008 and April 2009 at a local community organization and a nearby research office. All measures were available in English or Spanish. The baseline interviews took approximately

three hours a monetary incentive (\$50) was given to the participants for their time, travel and childcare expenses.

Measures

Hispanic stress was measured using the Hispanic Stress Inventory (HSI; (Cervantes et al., 1991). The HSI consists of 73 items with five subscales: a) Occupational/Economic Stress, b) Marital Stress, c) Family/Cultural Stress, d) Immigration Stress, and e) Parental Stress. Parental stress was not administered in the current study because not all of the women were mothers, and parenting was not a focus of this study. Cronbach's alpha for the subscales in this study ranged from .74 to .83. This instrument assesses two aspects of each subscale: frequency (referring to whether a stressful event has occurred) and appraisal (referring to the respondent's perception of emotional reactions to the stressful event). Due to the participant's perceptions of a stressful event being more informative than how often an event occurred, for the purposes of the current study the authors chose to examine only the appraisal aspect.

Self-esteem was measured using the RSE (Rosenberg (1965). This scale has 10 items measuring an individual's perception of self-worth with item responses on a 4-point Likert scale ranging from *strongly agree* to *strongly disagree*. The total score ranges from 0 – 30, with higher scores indicating greater self-esteem. Internal consistency reliability in this study was good, Cronbach's $\alpha = .84$. Self-esteem was positively skewed, resulting in a square root transformation being used for analysis.

Depressive symptoms were assessed with the CES-D (Radloff (1977), a reliable measure of depressive symptoms that has been used as a screening tool and for research in for clinical depression for the past 30 years. This 20 item questionnaire uses a Likert response format to measure frequency of depressive symptoms during the past week. Respondents are considered to

have depressive symptoms when a score ≥ 16 . English and Spanish versions have been widely used with Hispanics over the past three decades (Cervantes et al., 1991; González et al., 2001; Kim, Chiriboga, & Jang, 2009; Roberts, Vernon, & Rhoades, 1989). In the current study, the internal reliability of the CES-D was strong, Cronbach's $\alpha = .94$. Due to the depressive symptoms variable being positively skewed, a square root transformation was used to make the distribution more normal.

Data Analysis

Structural Equation Modeling (SEM) using Mplus version 6.21 (Muthen & Muthen, 1998-2007) was used for all analyses. Full information maximum likelihood estimation allowed the inclusion of cases with missing data. Preliminary measurement modeling was used to create one Hispanic stress latent variable. The following cutoffs for model fit indicated that: good was Comparative Fit Index (CFI) $> .95$ and Root Mean Square Error of Approximation (RMSEA) $< .05$; and 'acceptable' was CFI $> .90$, and RMSEA $< .08$ (Musil, Jones, & Warner, 1998). First, a measurement model with a single latent factor explaining variation in the four Hispanic stress subscales was tested. Next, we tested whether Hispanic stress and/or self-esteem were related to depression in a SEM model. If both predictors were significantly related to depression, mediation was tested using the bootstrap method described by MacKinnon, Lockwood, and Williams (2004). This method indicates standard error estimates by re-sampling and correcting for bias in the central tendency of the model estimates, and resulted in a coefficient, 95% confidence interval, and p-value associated with the product of the paths to and from the mediator.

Results

Measurement model

The measurement model tested whether Hispanic stress could be explained with a single latent variable. The initial model did not have acceptable fit, CFI = .867, RMSEA = .311. Modification indices suggested that the model fit would be improved by allowing covariance between the errors in immigration stress and occupational/economic stress. Because being an immigrant can impact occupation and economic stressors, this relationship seemed to make sense, therefore a second model was tested that included this term. The modified model resulted in good fit CFI = 0.998, RMSEA = 0.049. Table 2 shows the loadings for each of the four Hispanic stress subscales.

Relationships to Depression

A model with a latent Hispanic stress and observed self-esteem variables predicting depressive symptoms did not have acceptable fit, CFI = 0.90., RMSEA 0.168. Hispanic stress was significantly related to depressive symptoms, $B = 0.77$, $SE = 0.07$, $p < .001$. Self-esteem was significantly inversely related to depressive symptoms, $B = -1.21$, $SE = 0.11$, $p < .001$.

Mediation

The mediation model included a path between Hispanic stress and self-esteem, and the indirect path from Hispanic stress through self-esteem to depressive symptoms. The mediation path is displayed in Figure 1. The mediation model had an acceptable fit to the data, CFI = .989, RMSEA = 0.059. Hispanic stress was significantly inversely related to self-esteem, $B = 0.25$, $SE = 0.03$, $p < .001$, and accounted for 23% of the variation in self-esteem. Hispanic stress was significantly related to depressive symptoms, $B = 0.81$, $SE = 0.06$, $p < .001$. Self-esteem was significantly inversely related to depressive symptoms, $B = -1.02$, $SE = 0.13$, $p < .001$. Hispanic stress and self-esteem jointly explained 52% of the variance in depressive symptoms. The indirect effect from Hispanic stress through self-esteem to depressive symptoms was significant,

$B = 0.16$, $SE = 0.02$, $p < .001$, 95% CI [0.19, 0.32], which indicated that self-esteem mediated the relationship between Hispanic stress and depressive symptoms.

Discussion

This study examined the relationships between Hispanic stress, self-esteem, and depression. In this study Hispanic stress was defined and measured as the compilation of various common factors that contribute to stressful situations among U.S. Hispanics, including occupational, economic, marital, family/cultural and immigration stressors. Taken together, they were conceptualized from a stress process framework, to predict depressive symptoms. Findings from this study indicated that Hispanic stress was positively associated with depressive symptoms, suggesting that with higher the levels of reported stress more severe depressive symptoms were experienced by the individual. Although few studies have examined the effects of a comprehensive set of stressors associated with being Hispanic in the U.S. and having depressive symptoms, , this study did find this relationship to be consistent with the stress process model (Pearlin et al., 1981). The stress process model can further be used to guide research that clarifies both the unique contributions of specific stressors and how these interact to contribute to psychological and physical health outcomes. Determining the effects of stressors is important to identify the most important targets for intervention (e.g., occupational vs. immigration, or occupational and immigration) that have the most potential for minimizing health disparities among Hispanics.

In this study, higher reported self-esteem was expected to mediate the psychological impact of Hispanic stress on depressive symptoms. The finding from this study are consistent with reports by other researchers working with diverse Hispanic populations in the U.S. regarding the protective effect that self-esteem has on depressive symptoms (Cianelli et al.,

2013; González-Guarda et al., 2009; Iwata, Turner, & Lloyd, 2002; Rosenberg, 1965). Previous research studies included samples consisting primarily of Mexican-Americans, Puerto Ricans, and Cubans. Larger numbers of women from Colombia, Cuba, and Peru were in this sample; all previously understudied subgroups which strengthens the argument that self-esteem plays an important role on psychological health outcomes across Hispanics subgroups. Although this appears to be an area where there is consistency across studies, future research is needed to be conducted to clearly describe the demographic, cultural and social-environmental contributors to self-esteem and depression across Hispanic subgroups. These studies should examine both inter-ethnic and intra-cultural variations that exist across racial/ethnic groups and cultural subgroups. Women's psychological well-being is important for society because depressive symptoms interfere with a woman's and her family's daily life and normal functioning. The state of depression causes distress for the woman, the family and those who care about her. This is important considering that women are the main support and care providers for the family (Afifi, 2007; Cianelli et al., 2013). In addition, there is a need for better diagnosis and treatment of mental health needs of women, partially related to their culturally reinforced subordinate position in relation to their male partners. Reducing depression is important both for women's general health and as a factor in enabling them to engage in healthy sexual behaviors (Cianelli et al., 2012).

When considering the results of this study it is important to note that the CES-D, a much debated measure of depressive symptoms, was used in this analysis (Cervantes et al., 1991; Crockett, Randall, Shen, Russell, & Driscoll, 2005; Kim et al., 2009; Roth, Ackerman, Okonkwo, & Burgio, 2008). The interpretations of items on either the RSE or the CES-D may differ, and therefore limit generalizability, from Hispanics who were not of Mexican and Puerto

Rican descent as in the primary study samples (Pascoe, Stolfi, & Ormond, 2006). Second, the study findings indicated high levels of self-esteem. Third, all the measures used were self-reported. Further research is needed to evaluate the cultural equivalency of these measures across Hispanic subgroups, and then refine or enhance these measures to adapt for cultural equivalency if needed. When possible, these self-report measures should be combined with diagnostic verification and biological measures such as salivary or hair cortisol to assess the stress response. Fourth, the participants were participating in a HIV prevention study. Although all the data was taken from the baseline assessment, prior to any involvement in HIV prevention activities, the fact that participants were a convenience sample and willing to participate in HIV prevention activities may limit generalizability of study findings to the general population of Hispanic women. Finally, because this study was a cross-sectional design, cause and effect relationships cannot be established.

To advance the field of health disparities research related to stressors experienced among Hispanic women and improve their psychological well-being, it is important to develop and formally test culturally specific interventions that address common stressors among Hispanic women living in the U.S. experience. This study's findings indicate the effect of self-esteem on depressive symptoms which contribute to knowledge related to the stressors unique to primarily immigrant Hispanic women. This new knowledge of the relationships among Hispanic stress, self-esteem, and depressive symptoms provide insight on the contribution of self-esteem to depressive symptoms and should be used in future interventions. The study findings found depression associated with greater stress load is partially mediated by the presence of self-esteem. Interventions designed to improve self-esteem may be able to mitigate depression related to stress. Such interventions could include: family dynamics and roles and coping

strategies with economical/occupational stressors. Gonzalez-Guarda et al. (in press) found that family support had a significant interaction with Hispanic stress in the context of the Syndemic Factor (e.g. latent variable of substance abuse, violence, risky sexual behavior and depression) and should be considered when developing future interventions to reduce stress and increase self-esteem among Hispanic women living in the U.S. In essence, strategies for Hispanics in the U.S. are needed to reduce stressors and to promote self-esteem. Nurses in primary public health settings are uniquely qualified in their pivotal positions as hands-on caregivers to implement tailored and culturally sensitive interventions for Hispanic women.

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