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Social Support, Life Events and Psychological Distress among the Puerto Rican Population in the Boston area of the United States

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Abstract

Objectives: The aim is to investigate the role of social network support in ameliorating the psychological impact of life stressors that are prevalent for the older Puerto Rican population.

Method: Social support was measured through the Norbeck Social Support Questionnaire, and psychological distress through the CES-D and the Perceived Stress Scale. We describe the life stressors (Norbeck Life Events) that Puerto Ricans face and their implications for psychological distress. We present associations between depression, perceived stress, social support, and socio-demographic indicators. The role of social network support—emotional and instrumental—in buffering the effect of negative events is examined. Attention is given to the interacting effect of gender and the type of support.

Results: The analysis shows that dimensions of social support, particularly emotional support, are generally protective of psychological health. However, when delineating the moderating effects of gender, social support is beneficial for men, but manifestly less so for women. Emotional, tangible support and duration of social contacts show a moderating effect on the impact of life stressors on psychological distress which, however, is in a direction opposite to that proposed by the buffering hypothesis.

Discussion: Social ties are generally protective, but may also be contributing, particularly for women, to increased psychological distress in the face of stressful life events.

Keywords

Depression; gender; stress; Hispanics; social networks

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Introduction

The Puerto Rican population in the United States faces unique cultural, social and psychological circumstances. Previous work has illustrated that Puerto Ricans have trajectories, experiences, and sources of stress which differ from those of other Hispanic immigrants and Hispanics born in the United States (Alegria et al., 2007; Tran, 1997). Attention is warranted to the particular context of this group of Hispanics, as they constitute the second largest Hispanic group in the United States as a whole, and the largest one in the Northeast (3.9% of the total population) (US Census Bureau, 2001). There is limited information on the particular health and mental health risks that this group faces, and even more so, about the contextual, structural and psychological factors related to these health risks and health disparities. While existing studies usually delineate associations between demographic characteristics of the Hispanic participants and their health status, few illustrate how social networks, social support, and life stressors are related to health outcomes for the Puerto Rican population (Robison et al., 2003). Deepening our knowledge about these issues is necessary so as to address existing health disparities and to offer appropriate health care and mental health services (Alegria et al., 2007).

Social Support and Health

The importance of social support in protecting well-being has been illustrated for physical health, including for indicators of mortality and in adjustment to chronic disease (Berkman & Syme, 1994). There is also strong evidence that being part of a social network can contribute to positive mental health (Kawachi & Berkman, 2001). It has been suggested that social networks and social participation may buffer some of the effects of social disadvantage on mental health (Stockdale et al., 2007; Vaananen, Vahtera, Pentti, & Kivimaki, 2005). The role of social support is generally beneficial and most findings demonstrate this protective role; yet the impact of social support can also be mixed. For example, when a distinction is made between the role of perceived and received support, received support has a more ambivalent effect (Gleason, Iida, Shrout, & Bolger, 2008). As reviewed by Kawachi and Berkman (2001), there is evidence of contradictory effects of social support for older adults and women with low economic resources.

The function of social networks and social capital among those in socioeconomically disadvantaged groups is a contentious issue. It is known that social support and networks are important in protecting from the stresses of immigration and acculturation. A case has been made, for example, that first generation Latino immigrants are somewhat protected by functional aspects of their social networks in their new country (Abraido-Lanza, Dohrenwend, Ng-Mak, & Turner, 1999; Iannotta, 2003), which can provide resources, a sense of belonging and also motivate culturally bounded health protective behaviors. It is also known that the value of social networks and support varies significantly along a number of characteristics of neighborhoods, families, and individuals. Members of social and economically disadvantaged groups tend to have networks with weaker ties and access to resources (Small, 2007).

One of the possible mechanisms through which social support could thus influence mental and physical health is through exerting *main effects*—in other words, being salutary for all

individuals independent of the extent of stress that they are currently facing. The *stress buffering model* of social support, on the other hand, contends that the social support of others may have an ameliorating effect of life stressors, particularly for individuals who are under greater stress (S. Cohen & Wills, 1985). Social support could be functioning through moderating the appraisal of stressful events when they occur, through changing the emotional impact of these events, or through motivating health enhancing or health risk behaviors, all of which can have physiological implications (Uchino, 2006). These two models could be relevant concurrently, and it has been postulated that some dimensions of social support (particularly structural ones) exhibit main effects, while functional ones, such as emotional support, could exhibit buffering effects (S. Cohen & Wills, 1985; Kawachi & Berkman, 2001; Wills & Fegan, 2001).

Health and Social Support among Puerto Ricans in the United States

Previous research with the Puerto Rican community has indicated that they have greater vulnerability in relation to physical and mental health as compared to other non-Hispanic and Hispanic groups. Puerto Ricans have greater prevalence and severity of several conditions, including functional limitation, diabetes (Tucker, Bermudez, & Castaneda, 2000), hypertension and arthritis (Tucker, Bermudez et al., 2000; Tucker, Falcon, Bianchi, Cacho, & Bermudez, 2000).

Most research on depressive symptomatology has shown higher prevalence among Hispanic populations compared to non-Hispanic whites and other ethnic groups, but usually has not distinguished between the different Hispanic groups (Hiott, Grzywacz, Arcury, & Quandt, 2006; Mills & Henretta, 2001). From the research which does make such a distinction, however, there is evidence that the prevalence of depression among the Hispanic population in the United States is highest for the Puerto Ricans (Moscicki, Rae, Reiger, & Locke, 1987; Vera et al., 1991). One study, for example, found that 33 % of the Puerto Ricans had a score on the CES-D indicative of clinically relevant depressive symptoms and 29 % reported suicidal ideation (Weingartner, Robinson, Fogel, & Gruman, 2002). Alegria et al (2007) found that the Puerto Rican group had the highest prevalence of depression (as well as anxiety), as compared to Mexicans, Cubans and other Latinos in the United States (Alegria et al., 2007). Another study illustrated that Puerto Ricans and non-Hispanic whites had the highest lifetime rates of major depression, and, relative to whites, blacks, Mexicans and Cubans, Puerto Ricans had the highest rates of suicide attempts (though lower rates of suicide completion) (Oquendo, Lizardi, Greenwald, Weissman, & Mann, 2004). Work with Hispanic elders from the Massachusetts Hispanic Elderly Study (MAHES) study illustrated that, compared to Dominicans, other Hispanics and non-Hispanic whites, Puerto Ricans had the highest prevalence of depressive symptomatology as measured by the CES-D (Falcon & Tucker, 2000).

Given the limited literature on Puerto Rican health in general, it is not surprising that there is little previous work on social networks and health for this group and that most of the existing work is limited in scope (Sanchez-Ayendez, 1988). A few studies have examined social networks and their impact on other domains, such as settlement and employment search (Falcón, 2007; Falcon & Melendez, 2001). A running thread through these findings is

that Puerto Ricans, similarly to other immigrant groups, display extensive use of social networks in accessing housing and searching for employment. At the same time, migration is a disruptive process that unsettles family, kin, and friendship relationships. For the Puerto Rican community, which does not have legal limitations in traveling, the instability of social networks is a constant. Aranda (2007) details how many of her subjects reported losing "face-to-face" contact and the breakdown of social networks as a primary source of their discontent after migration. Ultimately, the unavailability of adequate social support increases depressive symptoms for this group (Robison et al., 2003). Further, this population has few years of schooling and limitations in the use of the English language, which may exacerbate their relative isolation from social activities and formal institutions in the mainland.

Given the disadvantaged health characteristics for the Puerto Rican community, it is of interest to understand how social networks and social support may contribute to or reduce their health disparities. The current paper is based on the Boston Puerto Rican Health Study, being conducted by the Puerto Rican Center for Population Health and Health Disparities, and funded by the National Institute on Aging. This interdisciplinary study aims to identify multiple predictors and correlates of accumulated biological burden, or allostatic load, in middle aged and elderly Puerto Rican residents of the greater Boston area. It has a prospective design, collecting base-line and two year follow-up data, and follows chronic health conditions, nutritional status, anthropometric and biological indicators, cognitive ability, activities of daily living, psychological distress, social support, and stressors. The main aim of this paper is to investigate the role of social support in ameliorating the psychological impact of life stressors that are prevalent for the Puerto Rican population in the Boston area.

Methods

Sample

The Boston Puerto Rican Health Study targets the Puerto Rican adults aged 45 to 75 in the greater Boston area. Using data from the 2000 census, participants were drawn from high-density areas (blocks with 10 or more Hispanics). The participants were interviewed at their homes through a structured questionnaire lasting between 3 to 4 hours, on average. An overwhelming majority of respondents (87%) completed the interview in Spanish, while only 2% completed it fully in English and 11% in a combination of the two languages.

Of 1,740 subjects invited to participate in the study only 12.9% declined participation. Over 1,300 interviews have been completed and 1,020 have been fully coded and are available for the analysis in this paper. Twenty eight percent (n=286) of the participants were men and 72% were women (n=734). The age distribution of the sample ranged from 45 to 75 years, with a mean age of 57.76 (SD=7.37). The sample is overwhelmingly Puerto Rico born with 97% born on the island. The length of residency in the United States varied from 0 to 64 years, with a mean of 34.05 years (SD=11.78). More than 40% of the participants were divorced or separated, 32% were married, 14% were widowed and 13% were never married. About 4% of the respondents had no schooling, 45% had received an education up to 8th grade, 36% up to 12th grade, 10% attended some college, 3% had a bachelor's degree, and 2% at least some graduate school education. Less than a quarter of the respondents were

employed at the time of interview (21%) and over half (56%) were living below the poverty index, as defined by total household income (Department of Health and Human Services, 2007).

Methods

Dependent variables.

Depressive symptoms: We used the Center for Epidemiological Studies Depression Scale (CES-D) to assess depressive symptomatology (Radloff, 1977). This instrument has been shown to have good validity in older adults (Radloff, 1986), as well as in Hispanics (Moscicki et al., 1987), including the Puerto Rican population in the US mainland (Falcon & Tucker, 2000; Mahard, 1988; Potter, Rogler, & Moscicki, 1995). It consists of 20 items that ask the respondents about their mood during the past week. Scores of 16–21 indicate moderate levels of depressive symptoms and scores of 22 and higher indicate possible clinically relevant depressive symptoms. The internal consistency based on the coefficient alpha for this scale was 0.91.

Perceived stress: We used the 14 – item Spanish version of the Perceived Stress Scale (Sheldon Cohen & Williamson, 1988), as developed by Gonzalez and Landero (Gonzalez & Landero, 2006). It is based on the definition of stress as a perception that events in one's life are threatening and one's resources are not adequate to cope with them. The PSS measures the extent to which respondents perceive their lives over the past month as unpredictable and uncontrollable. The coefficient alpha for this scale was 0.85.

Independent Variables.

Life events: Respondents were asked to mark the life events they have experienced during the past year, using the 82 item Life Events Questionnaire (Norbeck, 1984). The Life Events are grouped into categories related to: health, work, school, residence, love and marriage, family and close friends, parenting, personal or social, and crime and legal matters. For every event that has happened to them during the year, respondents mark whether they assessed it as a "good" event or a "bad" event. Additionally, they were asked to rate what was the extent of the impact of the event on their lives, using a scale from 0 (no effect) to 3 (great effect). The scoring was conducted by calculating the total sum of the impact of the good events and the total sum of impact of the bad events.

Social support: To measure the respondents' available social support and social network characteristics, we used the Norbeck Social Support Questionnaire ((Norbeck, 1995; Norbeck, Lindsey, & Carrieri, 1981, 1983). This instrument asks respondents to list the important people from who they receive support in their daily lives. For our study, respondents could list up to 16 important people and thus we calculate the social network size. Further, respondents were asked to rate the extent of support provided by each person. Emotional support provided by each person in the networks includes affect and affirmation. Tangible support is related to the instrumental aspects provided by the network. Emotional support and tangible support are dimensions of the functional support perceived by the respondent. Respondents were asked to give the duration of the relationship and the

frequency of contact. Thus, the structural dimension of social support is conceptualized as the total number of people, the duration of the relationship, and the frequency of contacts.

As the scores for the different dimensions of social support are calculated by adding the perceived support for each member of the person's social network, they are highly inter-correlated. Therefore, for the purposes of the correlation and linear regression analyses, we used the averages for each dimension (dividing the total score by the number of people in their network).

Social activities: To operationalize the extent of social integration through family and community activities, we used the Social and Community Support and Assistance Questionnaire. This instrument was developed for the Massachusetts Hispanic Elderly Study (MAHES) (Falcon & Tucker, 2000). From this questionnaire, we used the count of 14 items from the subscale for participation in social activities during the past two weeks. This subscale asks about telephone contacts with friends, volunteer work, church attendance, attendance of sport events, involvement with hobbies and others.

Socio-demographic and Control Variables.

Acculturation: The scale used to assess the level of language acculturation was adopted for use with the Puerto Rican population in the Massachusetts Hispanic Elderly Study (MAHES) (Falcon & Tucker, 2000), and is based on the Acculturation Scale for Hispanics (Marin & Gamba, 1996). To assess general language acculturation we used one item, which asks the respondents, which is the language that they use most often in their daily lives. For the purposes of the analyses, we have combined those that use "mostly English" with those that use "only English". A second item (with seven sub-questions) indicates which language they use during different daily activities (watching television, reading, speaking with neighbors, etc.), from which we calculated the extent of English language use in daily activities.

Health status: Two indicators of health status are included--a measure of self-rated health (SRH) and a count of existing medical conditions. Self-rated health is assessed with a 5-point Likert scale, ranging from 5= excellent to 1= poor. This measure has been shown to be a reliable predictor of morbidity and mortality for several populations, including Latinos (Finch, Hummer, Reindl, & Vega, 2002; Idler & Benyamini, 1997). The number of medical conditions was identified through a list of 18 diagnoses. The respondents were asked "Has a doctor ever told you that you had any of the following illnesses or conditions?" Thus, while it is a self-report measure, it asks not about symptoms, but about diagnosis confirmed by a health care provider.

Indicators are included for gender, age, education, marital status, length of residency in the United States, number of people in the household, current employment status, and average household income per household member (calculated from the total household income divided by number of people in the household). Household standing relative to the poverty line was calculated using the guidelines from the US Department of Health and Human Services (Department of Health and Human Services, 2007).

Results

Descriptive and Bivariate Analysis

Dependent variables.—For the total sample, the mean CES-D score was 20.30 (SD=13.32), which falls in the symptomatic category. Two out of every five respondents (43%) scored high enough (≥ 22) to be considered to exhibit symptoms of clinical depression. The PSS scores for this sample were higher than those in a probability sample in the United States for all categories, except for respondents with college and graduate education levels (Sheldon Cohen & Williamson, 1988).

Average CES-D and PSS scores were higher for women than for men (Table 1). Age was inversely related to both the CES-D score and the PSS score. Both stress and depression symptoms were higher with more education, until High school/Some college and were then lower, with more advanced degrees. Married people had significantly lower CES-D and PSS scores compared to those that were divorced or had never married. Participants with lower SES and those who were below the poverty line had significantly higher levels of depressive symptoms and perceived stress. Being currently employed was also associated with lower depressive symptoms (Table 1).

Independent variables.

The Life Events Scale provides information on the number and types of stressors in the lives of our participants during the previous year. Respondents reported, on average, 3.70 positive events during the prior year with a range of 0 to 19 events. On the other hand, respondents reported 3.49 negative events with a range of 0 to 21 events. In general, most events fell into the health and family categories with women showing a larger number of events related to health, family and parenting, while men reported a larger number of crime-related events, as compared to women. The most common positive events reported included making new friends, taking a vacation, a major personal achievement, and the birth of a grandchild. In contrast, the most common negative events included the death of a family member or close friend, a change in sleeping habits, a change in the health of a family member or friend, a major personal illness or injury, and a major change in finances. Bivariate analysis showed that the impact of negative life events was associated with higher levels of depressive symptoms (r=0.39, $p < 0.01$) and perceived stress (r=0.33, $p < 0.01$). The impact of positive life events, on the other hand, did not correlate with depression or perceived stress.

In the Norbeck Social Support Questionnaire respondents reported just under 6 contacts in their network; for many these were long term relationships (five years and older) rather than new acquaintances. Women identified 5.75 people within their network while men identified 5.21 ($F=5.51_{(1,1018)}$, $p < 0.05$). This is smaller than the size of social networks found by Norbeck (1995) for their normed sample, which was 10.9 people for women and 10.8 people for men. The Social and Community Support and Assistance Questionnaire, our measure of social integration and participation, showed that they participated in 0 to 13 social activities, with an average of 6 activities. Bivariate analyses show that the higher the number of people in the social network (r=−0.10, $p < 0.01$), the higher the emotional (r= −0.18, $p < 0.01$) and tangible support (r=−0.12, $p < 0.01$) perceived, and the more social activities they were

engaged in (r=−0.18, $p < 0.01$), the lower their depressive symptoms. The associations were similar for perceived stress. Duration and frequency of social support were not associated with psychological distress.

Control variables.—Over 75% of the respondents indicated using only Spanish or mostly Spanish in conducting daily activities. Eighteen percent reported using both languages the same and 6% use English. There was no significant difference in the levels of depressive symptoms or perceived stress by general language use. According to English language use in daily activities, the more acculturated the individuals, the lower their depression score (r= −0.09, $p < 0.01$). Similarly, the longer time they have spent in the United States, the lower their depression score (r=−0.09, $p < 0.01$) and perceived stress (r=−0.06, $p < 0.05$).

The majority of respondents stated that their health was fair (58%), while 14% described it as poor. Only 5% rated their health as excellent, 6% as very good, and 18% as good. As for the second indicator of health status, the number of medical conditions ranged from 0 to 11 with an average of 4.24 conditions (SD=2.36). Self reported health status was strongly related to psychological distress. People with poorer ratings of health had significantly higher CES-D (r=−0.36, $p < 0.01$) and perceived stress scores (r=−0.33, $p < 0.01$). Additionally, people who had greater numbers of diagnosed medical conditions also had more depressive symptomatology (r=0.24, $p < 0.01$) and perceived stress (r=0.14, $p < 0.01$).

Multivariate Analysis

We conducted linear regression analysis, predicting the effects of the negative life stressors on the CES-D depression score and the PSS separately.

In the first model (Table 2), we entered the negative life events to evaluate the total effect of the stressors on depressive symptoms ($\beta = 0.40$; $p < 0.001$). This effect was, as expected, positive and very significant—a higher number of negative life events translate into more symptoms of depression. Including the health and demographic control variables in model 2 attenuated this association only slightly ($\beta = 0.36$; $p < 0.001$). Being a woman, younger, with less years of schooling, having lower SES and a larger number of medical conditions were all associated with more depressive symptoms. Including the social support variables in model 3 had no impact on the effect of negative life events on depression. With the exception of SES, there was no change in significance among the control variables, nor did the relationships change from what was earlier described. Of the indicators of social support, only emotional support and number of social activities were associated with lower depressive symptoms. The total model explains 29 % of the variance in depressive symptomatology.

The regression analysis with perceived stress as the dependent variable was conducted in a parallel way, and the results are similar, though the models explained less of the variance for perceived stress than they did for depression (adjusted $R^2 = 0.20$).

Testing for moderating effects

Gender and the different dimensions of social support were tested as moderators (Barron & Kenny, 1986; S. Cohen & Wills, 1985). A moderator would be a variable which influences

the effect of the predictor on the dependent variable (Barron & Kenny, 1986). To facilitate interpretation of the models with interaction terms, all of the independent variables in the model were centered by subtracting the respective mean from each value (Aiken & West, 1991). Product terms were created by multiplying the potential moderator with the predictor in each model. Separate regression models were tested for each dimension of social support. The control variables were entered first, then the predictor, the moderator, and the product of moderator and predictor. A significant *p* value for the product was interpreted as an indication of existing interaction, i.e. a moderating effect.

We tested for moderating effects of gender on the relationship between the different dimensions of social support and psychological distress. Tangible support (β =0.14; $p < 0.05$) and frequency of social contacts (β =0.13; $p < 0.05$) showed an interaction effect with gender, in relation to depressive symptoms. For men, higher tangible support and frequency of social contacts had a stronger inverse association with depressive symptoms than for women. When using the perceived stress score as the dependent variable, the interaction of gender by emotional support was significant (β =0.19; $p < 0.01$). The interaction for gender and the frequency of social contacts was also significant (β =0.16; $p < 0.05$), and is presented in Figure 1. Similarly, the availability of emotional support and frequency of social contact was more strongly associated with lower perceived stress symptoms for men, than for women. Among women, the CES-D score decreased with increased network contact but at a lower rate than for men, while perceived stress actually had a tendency to increase for women with more frequency of social contacts (Figure 1). These findings suggest that social networks and their function are not only gender specific but, for women in this population they are not as protective of mental health as they are for men, and may also be a source of additional burden.

Testing for main and buffering effects of the dimensions of social support

The potential role of social support as a buffer of the effect of negative life events on depressive symptoms and perceived stress was tested through the presence of moderation effects (Barron & Kenny, 1986; S. Cohen & Wills, 1985). We tested to see if each dimension of social support influenced the effect of negative life events on depressive symptoms and perceived stress separately.

For depressive symptoms as the dependent variable, main effects were evident for emotional support (β = −0.11; $p < 0.001$) and social activities (β = −0.20; $p < 0.001$), but none of the interaction terms were significant. In other words, for this population, although some dimensions of social support were associated with lower symptoms of depression, they did not appear to buffer the effects of negative life events.

For perceived stress as the dependent variable, however, moderating effects were observed. Emotional support showed both main and moderated associations with perceived stress (Figure 2). Tangible support (β = 0.06; $p < 0.05$) and duration of contacts (β = 0.07; $p < 0.05$) showed only moderating effects; social activities showed only main effects (β = −0.20; $p < 0.001$). The interactions, however, were in a direction opposite to what would be expected, as described by Cohen and Wills (1985), for a buffering effect. Increased levels of emotional support, tangible support and duration of contacts, rather than buffering at higher

levels of stressors, were associated with higher levels of perceived stress as the number of negative life events increased. Interacting with a network of distressed social contacts may be, in itself, a stressful event. Thus, rather than buffering the impact of negative events on stress related outcomes, we find that some dimensions of the social networks may actually have an opposite tendency.

Discussion

Our analyses corroborate previous research, which has found that the Puerto Rican population of middle aged and older adults, is vulnerable according to multiple indicators (Alegria et al., 2007; Tucker, Bermudez et al., 2000; Tucker, Falcon et al., 2000; Weingartner et al., 2002). Our sample was disadvantaged according to their economic situation, with over half living below the poverty level (Department of Health and Human Services, 2007). The subjective evaluation of the participant's health was also of concern, with nearly three quarters of the respondents rating their health as fair or poor. Similarly, the levels of psychological distress, as assessed by the CES-D scale and the PSS, were also high. In fact, the levels of depressive symptomatology in our study were higher than those in the existing literature (Weingartner et al., 2002). The levels of perceived stress were also much higher than those reported for a probability sample in the United States (Sheldon Cohen & Williamson, 1988).

Psychological distress was strongly related to the experience of negative life events. While our participants had experienced similar counts of positive and negative events, the effect of the negative events was more pronounced, while positive events had no apparent protective effect on levels of psychological distress. Many of the reported life events were related to major losses of social contacts or problems with important people in their lives.

The Puerto Rican population in the Boston area appears to live in relative social isolation, within social networks that are small and constantly at risk of being altered. Most of our participants had migrated to the mainland from Puerto Rico a long time ago. Yet, our findings indicate that this migration, associated with disruption of social networks and difficulties in creating new ones in the receiving communities, is still influencing psychological well-being. Members of their social networks are likely to move often, and the participants themselves are more prone to move back and forth between Puerto Rico and the mainland. Thus, even after a long time in the United States, the initial and on-going migrations continue to disrupt their networks and to relate to psychological distress (Falcón, Rodriguez, & Cortes, 2006).

The high levels of depressive symptoms we found in the Puerto Rican population were associated with lower levels of the functional parameters of social support and lower social engagement. The availability of emotional support was negatively related to psychological distress and its effect was retained in the multivariate analysis. The multivariate analyses showed that the number of social activities in which participants were involved, our indicator of social integration, were the strongest protective correlate of psychological well-being. Social integration did not, however, exhibit buffering effects, as can be expected for this dimension of social relations (S. Cohen, 2004). A greater level of social engagement

may be critical in reducing depressive symptoms and perceived stress for older adults (Glass, Leon, Bassuk, & Berkman, 2006).

As previously reported for Puerto Ricans, the levels of psychological distress were significantly higher for women as compared to men (Falcon & Tucker, 2000; Robison et al., 2003). Not only is the prevalence of symptoms different, but there are gender differences in the dynamics between stressors, psychological distress, and distress. Depressive symptoms and anxiety have been shown to be related to different dimensions of social support for Latino men as compared to women (Hiott et al., 2006). Additionally, in some cases social support may be helpful in buffering the effects of stressors on depressive symptoms for men, but not for women, as illustrated for the dimensions of emotional support, instrumental support and provision of support (Takizawa et al., 2006). In other words, social ties could be providing more of value for men than they are for women (S. Cohen, 2004).

The ways in which social support was associated with depressive symptoms for our sample were somewhat different for men and women -- tangible support and frequency of social contacts being more clearly protective of depressive symptoms for men than they were for women. Emotional support and frequency of contacts were also more protective of perceived stress for men than for women. While they ameliorated the effects of stressors on perceived stress for men, in contrast, frequency of social contacts actually had a tendency to be associated with greater perceived stress for women.

Women’s networks are more likely to include other women and to include kin and neighborhood-based friends than those of men. Men’s networks are more likely to include workplace contacts and be less kin-based. Thus, it is likely that the social networks of women in this sample are more homogeneous than those of men, and are composed by individuals that are personally closer to the respondent and more likely to share many of the burdensome aspects of intimate social relations (S. Cohen, 2004; Kawachi & Berkman, 2001; Takizawa et al., 2006). For women, the closeness of social ties could also mean greater adherence to more traditional family norms which can be repressive for women (Kawachi & Berkman, 2001). They could mean more care-taking responsibilities, which can be depleting, and greater immersion into the distress of others within their networks (Robison et al., 2003).

We found that many of the dimensions of social support exhibited main effects for psychological distress in the face of negative life events. There were also significant interaction effects when perceived stress was predicted, but these were not buffering effects. Social support appears to moderate the effect of negative life events on perceived stress, however this moderation is exemplified in the fact that higher levels of social contacts in the face of more life stressors were actually associated with greater psychological distress. Since this study is cross-sectional, several explanations of this observation can be put forth. It is possible that when stressful life events such as illness and loss happen to people, the social network comes together to offer support - this could be the reason we observe higher levels of social support being associated with higher perceived stress in the face of greater life stress.

On the other hand, social ties might be contributing to greater perceived stress for this sample, particularly in the face of adversity. In the existing literature, buffering effects are usually found for the functional parameters of social support, rather than for the structural parameters (S. Cohen & Wills, 1985). They are also hypothesized to be relevant in cases in which the existing functional dimensions of social support match the needs elicited in the stressful situations. Considering that the stressful events in the lives of our participants were mostly related to serious health problems and losses of family and friends due to separations and other reasons, we can assume that the support that is available may not be adequate to their needs when dealing with these stressors – as social support is actually depleted by these events. As underlined by the proponents of the buffering model, when there might be a confounding of the life events measure and the social support measure (i.e. when the stressful life events are in themselves a depletion of social support), interpretation of buffering effects needs to be conducted with caution (S. Cohen & Wills, 1985).

Considering the direction of the interaction effects between negative life events and social support, we conclude that, for this population, the social relations are somewhat ambivalent in their functioning – they can be protective, but they can also contribute to increased psychological distress. This can also be seen also from our ethnographic observations and interviews conducted as part of the larger study, social relations are referred to as important sources of support, but also as recurring sources of stress and loss (Falcón et al., 2006).

The stressors and hardships identified in this sample of Puerto Rican adults in the Boston area, including multiple negative life events, poor health status and loss of social contacts, are strongly implicated in their relatively high levels of psychological distress. Involvement in social networks and social activities can be protective of psychological well-being, particularly for men. They can also be a source of significant stress and loss. Thus, the existing social networks for the Puerto Rican population that has migrated from Puerto Rico and lives in the Boston area are not as substantial and as protective as they have shown to be for other populations. This may be one of the reasons that psychological distress is so prevalent for this group. The finding that engagement in social activities is consistently associated with psychological well-being for our sample leads to the conclusion that the most helpful form of interventions for this group would aim to provide options for engaging in such activities in a way that is easily accessible and combined with supportive companionship.

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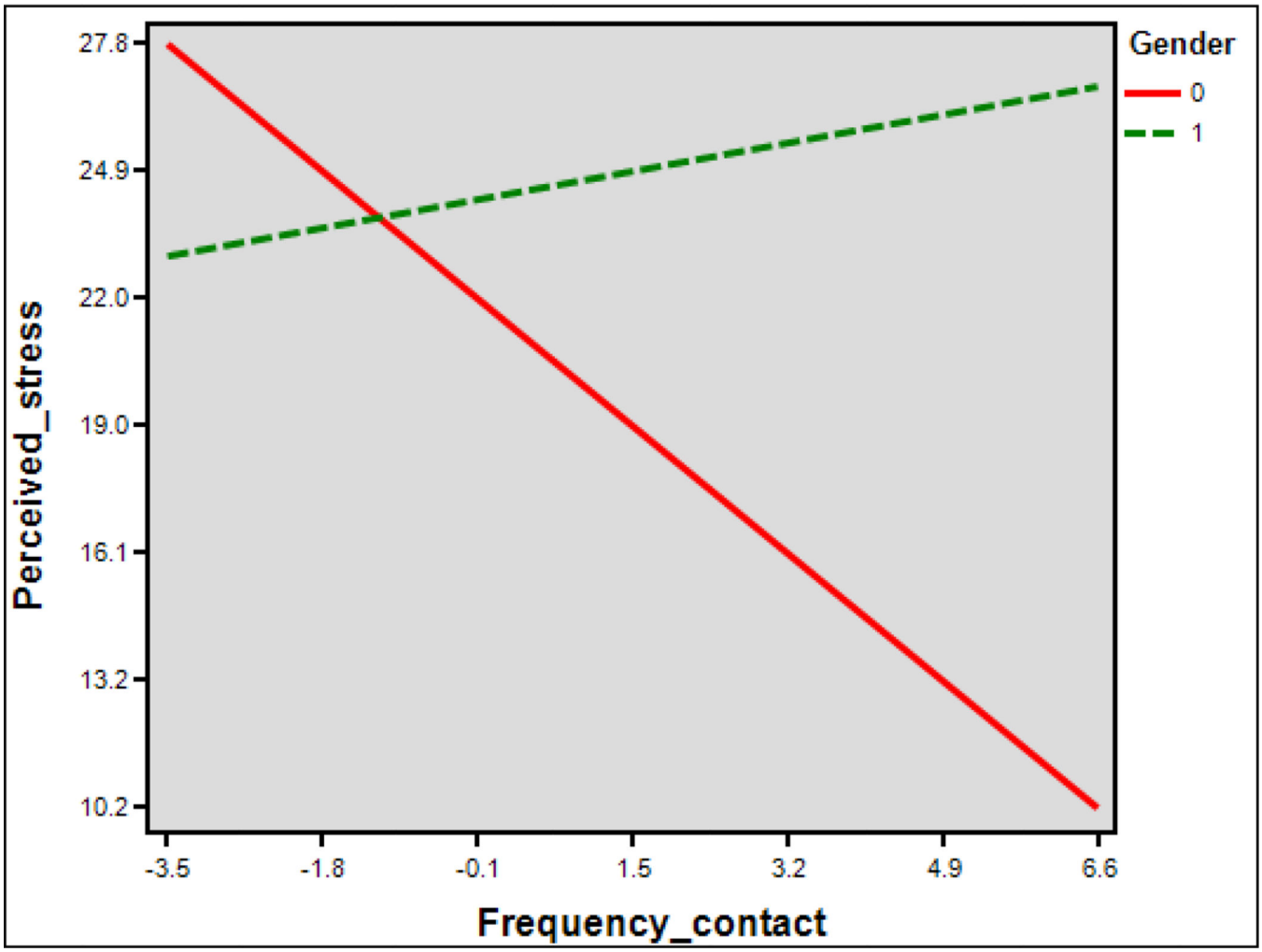

Figure 1.
Interaction between Social support (frequency of contacts) and gender (0 = male, 1= female), with Perceived Stress as the dependent variable

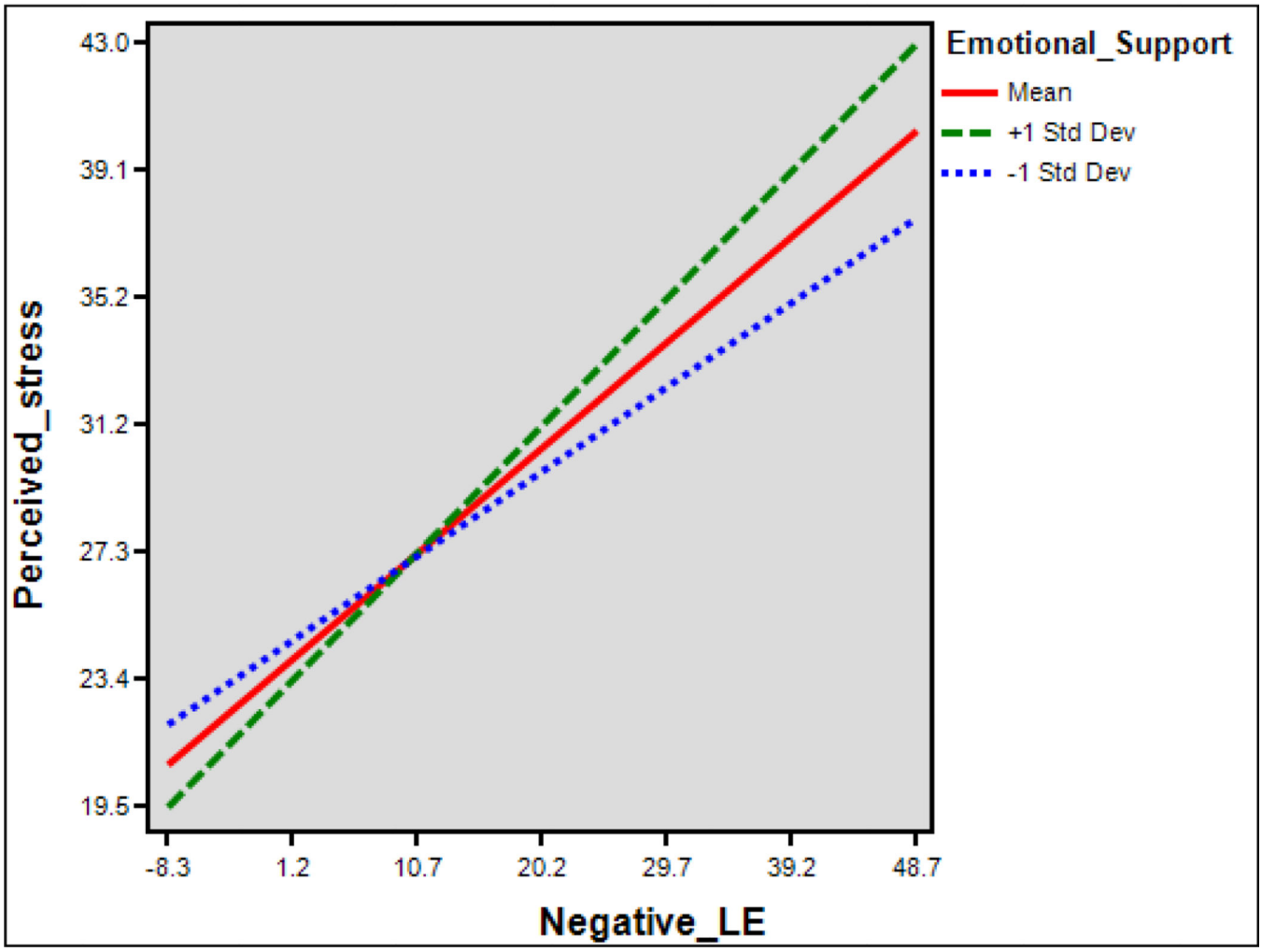

Figure 2.
Interaction between Emotional Support and Negative Life Events, with Perceived Stress as the dependent variable

Table 1.

Scores for Depressive symptomatology (CES-D) and Perceived Stress Scale (PSS), according to demographic categories

	n	CES-D	SD	F	PSS	SD	F
Gender				44.13 $_{(1,1016)}$***			21.02 $_{(1,1015)}$***
Men	285	15.9	11.8		21.3	9. 9	
Women	733	22.0	13.5		24.4	9.2	
Age				8.71 $_{(2,1015)}$***			14.09 $_{(2,1014)}$***
44–55	431	22.2	13.6		25.2	9.4	
56–65	401	19.4	13.1		22.8	9.3	
66–75	186	17.9	12.6		21.2	9.50	
Education				3.90 $_{(5,1010)}$**			4.44 $_{(5,1009)}$**
No school	39	19.1	12.5		20.4	10.6	
Up to 8th	460	21.2	13.2		23.7	9.8	
Up to 12th	361	20.6	13.5		24.3	9.2	
Some college	105	19.5	13.7		23.7	8.5	
Bachelor’s	28	12.7	8.9		18.2	8.1	
Some grad	23	12.8	12.4		18.7	10.6	
Marital Status				7.49 $_{(3,1010)}$***			5.29 $_{(3,1009)}$**
Married	327	17.8	13.1		22.5	9.8	
Divorced	407	21.9	13.0		24.6	9.0	
Widowed	145	19.3	13.5		21.8	9.6	
Never married	135	22.4	13.8		24.6	9.9	
SES				18.33 $_{(2,971)}$***			9.40 $_{(2, 970)}$***
$0–5000	278	22.1	13.4		24.6	9.9	
$5001–10,000	493	21.4	13.5		24.0	9.2	
Over $10,000	203	15.9	11.9		21.4	9.2	
Employment				49.74 $_{(1,896)}$***			32.89 $_{(1,896)}$***
no	708	21.5	13.5		24.2	9.7	

	n	CES-D	SD	F	PSS	SD	F
yes	190	14.1	10.7		19.8	8.3	
Poverty Index				24.88 (1,972) ***			5.48 (1,971) *
above	401	17.94	12.63		22.80	9.03	
below	573	22.22	13.55		24.24	9.69	
Language use				2.56 (3,1005)			0.38 (3,1004)
Only Spanish	382	21.70	12.84		23.91	9.61	
Mostly Spanish	387	19.55	13.62		23.26	9.53	
Both the same	182	19.57	13.84		23.18	9.54	
English	58	18.03	12.07		23.46	8.95	

ANOVA:

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

Table 2.

Linear regression analysis with CES-D score as dependent variable.

	Model 1	Model 2	Model 3
	β	β	β
Negative life events	0.40***	0.36***	0.36***
Gender		0.12***	0.13***
Age		−0.16***	−0.16***
Education		−0.13***	−0.08*
SES		−0.06*	−0.04
Language use		−0.05	−0.03
Medical conditions		0.16***	0.14***
Emotional support			−0.09**
Tangible support			−0.03
Duration of support			0.02
Frequency of support			−0.01
Social activities			−0.19***
Adjusted R^2	0.16	0.25	0.29

Linear Regression Analysis – β

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$