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Do cultural values have a role in health equity? A study of Latina mothers and daughters

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Abstract

Objectives: Recently, there has been a call to better understand Latino health and arrive at effective approaches for achieving health equity via research focusing on the association between cultural factors and health. This study examined whether familism, a cultural value that emphasizes warm and close family relationships, would attenuate the negative effects that perceived stress, a psychological process that can worsen health, can have on two physical health indicators- number of health conditions and bodily pain.

Methods: Latina mothers ($n = 85$, M age = 52.68, $SD = 6.60$) with Type 2 diabetes and their daughters ($n = 86$, M age = 27.69, $SD = 7.61$) whose weight put them at risk for also developing the condition were recruited to take part in a larger intervention study aimed at improving weight loss/dietary intake. Participants completed measures of familism, perceived stress, health conditions, and bodily pain.

Results: Results indicated that in the daughters, familism and perceived stress interacted to predict health conditions and bodily pain. As familism decreased, stress was associated with more health conditions and more bodily pain. These interactions were not significant for the mothers.

Conclusions: First, familism has the potential to buffer the negative effect of stress in ways that are protective for health among Latinas at risk for diabetes. Second, this buffering effect has boundary conditions, suggesting that a better understanding is needed of how, for whom, and under what circumstances familism can be beneficial for health.

Keywords

Latinas; familism; stress; diabetes; health equity

The troubling persistence of health disparities for racial and ethnic minorities in the United States is increasingly recognized to require new approaches for achieving health equity (e.g., Arellano-Morales, Elder, Sosa, Baquero, & Alcántara, 2016; Ruiz, Campos, & Garcia, 2016). In the case of U.S. Latinos, progress toward health equity requires understanding this group's complex health patterns that span from areas of health risk to areas of health resilience. For example, U.S. Latinos are at heightened risk for diabetes and asthma (Beckett, Belanger, Gent, Holford, & Leaderer, 1996). At the same time, they also experience better than expected outcomes on key health indicators such as infant birthweight (e.g., Callister & Birkhead, 2002; Hessol & Fuentes-Afflick, 2000) and overall mortality (Markides & Coreil, 1986; Ruiz, Steffen, & Smith, 2013). This latter pattern, termed the *Latino Health Paradox*, suggests that cultural factors may play a protective role for health; a role that may buffer Latinos from the costs of devalued ethnic minority status. This possibility has been theorized but rarely empirically studied (e.g., Katiria Perez, & Cruess, 2014; Ruiz et al., 2016). This study examined one cultural value, familism, and explored its possible links to stress, a psychological process that can worsen health, and two physical health indicators – total health conditions and bodily pain – in a sample of Latina mothers who have Type 2 diabetes and their daughters who are also at risk for Type 2 diabetes. The high prevalence of diabetes among Latinos (Centers for Disease Control & Prevention [CDC], 2017) places our sample at the center of an urgent health disparity and provided a context for testing the relevance of cultural values for health equity for Latinos.

Familism

Familism is a core value among U.S. Latinos that is also relevant to non-Latinos (Campos, Ullman, Aguilera, & Dunkel Schetter, 2014; Schwartz, 2007; Schwartz et al., 2010). It is defined as a way of valuing family relationships that emphasizes a strong attachment to, and identification with, the nuclear and extended family while promoting warm, close, and supportive relationships that prioritize family before the self (e.g., Bardis, 1959; Sabogal, Marin, Otero-Sabogal, Marin, & Perez-Stable, 1987; Triandis, Marin, Betancourt, Lisansky, & Chang, 1982). People with high levels of familism (a) endorse family interconnectedness, (b) use the family unit as a key personal referent, and (c) respect and uphold family honor (Lugo Steidel & Contreras, 2003; Sabogal et al., 1987).

Evidence to date indicates that familism is correlated with better mental health and physical health (e.g., Schwartz, 2007; Schwartz et al., 2010; Valdivieso-Mora, Peet, Garnier-Villarreal, Salazar-Villanea, & Johnson, 2016). The majority of familism work has focused on its relevance to psychological health, including self-esteem, life satisfaction, meaning in life, and overall well-being (Schwartz et al., 2010). However, some evidence also indicates an association between familism and physical health. For instance, Campos et al. (2008) found that familism was positively associated with social support, which in turn was linked to better pregnancy outcomes among immigrant Latinas.

According to Katiria Perez and Cruess (2014), familism may have an impact on health status via direct and indirect effects on symptom management and quality of life. Their review of the literature indicates that familism's emphasis on family cohesion, unity, and collective identity can encourage and promote healthier behaviors, such as committing to an exercise regimen and healthy dietary habits (e.g., Katiria Perez & Cruess, 2011). Similarly, a qualitative study of families with multiple members with diabetes found that young adults' physical activity depended on their parents' support and participation. The young adults were more likely to go to their medical appointments and eat healthier food if they were accompanied by their parents (Pyatak, Florindez, Peters & Weigensberg, 2014). Another study by Weiler and Crist (2009) found that within a sample of migrant Latino workers, family cohesion was associated with the monitoring of health practices. For example, family members offered support in the form of health advice, reminders to take medication, and encouragement to follow treatment regimens.

Research shows that while family relationships may facilitate positive health behaviors, they can also have an undermining effect in disease management (Henry, Rook, Stephens, & Franks, 2013). Among Latinos, the importance of family may remain high but not manifest itself in health protective ways. For instance, Latinos are less likely to change their dietary habits or health patterns if the new health behaviors do not align with their family's goals or needs (Gallo, Penedo, Espinosa de los Monteros, & Arguelles, 2009). In other words, patients with diabetes may not be willing to change their behaviors if those behaviors do not benefit their family as a whole, consistent with familism values that prioritize the family before the self. According to Katiria Perez and Cruess (2011), Latina mothers are also more likely to buy unhealthy food if their families prefer the taste compared to healthy food alternatives. Pyatak et al. (2014) found that Latino families also experienced conflict when they disagreed on food choices. Overall, these studies highlight the central role family relationships may play in the self-care and quality of life of patients dealing with a chronic illness.

A key pathway through which familism may be linked with relationship processes that lead to good health outcomes is by moderating the potentially health-harming effects of stress. Stress is one's mental and physiological response to demands; however, prolonged or repeated stress can lead to poor physical health (Cohen & Wills, 1985). This is particularly relevant to Latino health because, according to the American Psychological Association (2006), Latinos report higher perceived stress compared to non-Latino Whites. Moreover, the leading source of stress for Latinos is the health status of family and loved ones (American Psychological Association, 2006). At the same time, emerging work suggests that familism may buffer the effect of perceived stress on subjective health. That is, for participants with high levels of familism, feeling more stress was not associated with feeling less healthy (Corona, Campos, & Chen, 2017). Although elevated levels of stress put Latinos at risk for health problems, these intriguing findings suggest that shared cultural values may afford some protection from health risks. Given previous findings that Latinos place a great emphasis on familism, these values may serve as a protective factor for health (Campos et al., 2014), including in the context of Type 2 diabetes.

Physical Health in the Context of Diabetes

Type 2 diabetes is a chronic health condition that affects how the body metabolizes sugar or glucose. People with Type 2 diabetes either resist the effects of insulin, which moves sugars into their cells to be used as energy, or do not produce enough insulin to maintain healthy sugar levels. Common symptoms include blurred vision, increased urination, and fatigue (American Diabetes Association, 2017). Some of the major risk factors associated with Type 2 diabetes are being overweight or obese, inactive, and having abnormal cholesterol levels (American Diabetes Association, 2017; Mokdad et al., 2003). Type 2 diabetes may become debilitating, affecting major organs including loss of vision and kidney failure. It is important to also note that Type 2 diabetes can be controlled. While diabetes is a widespread public health concern, people of Latino background are at a higher risk for Type 2 diabetes than non-Latino Whites (American Diabetes Association, 2017).

The day-to-day management of Type 2 diabetes is a constant process that can be complicated by stress (American Diabetes Association, 2017). Patients are advised to follow a healthy lifestyle that emphasizes weight control, healthy eating, and exercise to reduce the risk of additional physical health problems. When efforts to manage one's diabetes are complicated by stress, a patient's overall health status can decline. The American Diabetes Association (2017) highlights two possible negative consequences of stress. First, stress may lead to compulsive eating and impair decision making (American Diabetes Association, 2017). Second, mental stress can be harmful to the glucose levels of a patient with diabetes (American Diabetes Association, 2017).

Another unfortunate result and challenge of diabetes is its tendency to be co-morbid with many other health conditions. For example, cardiovascular disease, kidney disease, strokes, and eye disease frequently co-occur with diabetes or can become a consequence of diabetes (Young et al., 2003). Furthermore, people with diabetes are at higher risk for developing additional conditions such as peripheral vascular disease, which narrows the blood vessels leading to the legs, arms, stomach or kidneys (Young et al., 2003). Overall, managing multiple chronic conditions is a concern for people with diabetes as comorbidity can have negative impact on a mortality risk and quality of life (Piette & Kerr, 2006).

People with diabetes are also at higher risk for suffering from bodily pain or joint pain. Bodily pain can be a direct result of diabetes or related factors, such as weight gain, that contribute to diabetes (Arthritis Foundation, n.d.). People with diabetes are also prone to developing a more serious condition known as neuropathy or nerve damage throughout the body. Typically, this damage to the nerves causes numbness and pain described as stabbing and burning to the feet and arms. According to the Mayo Clinic (2017), more than half of people diabetes develop neuropathy. Patients with painful diabetic peripheral neuropathy report lower quality of life compared to patients without nonneuropathic pain (Davies, Brophy, Williams, & Taylor, 2006). The number of health complications associated with Type 2 diabetes makes it urgent to study factors that may help people to minimize risk of developing diabetes and to manage it more successfully.

The Present Study

Drawing on theorizing that cultural values may be relevant to Latino health and our own conceptual analysis of the possible links between familism, stress, and physical health, we tested whether the cultural value of familism would attenuate the negative effects of perceived stress on health as indexed by one's health conditions and experiences of bodily pain. We expected Latina mothers with Type 2 diabetes and their at-risk adult daughters to report comparable levels of familism and perceived stress as well as comparable correlation patterns among familism, perceived stress, health conditions, and bodily pain. We also expected that familism would moderate the associations of perceived stress with the number of health conditions and bodily pain reported by both mothers and daughters.

Methods

Participants

One hundred and seventy-one participants from a larger intervention study (described below) participated in the present study. The mothers reported ages between 34–66 ($n = 85$, $M = 52.68$, $SD = 6.60$). Although dyads were recruited as pairs, a small subset of participants did not have a matching mother or daughter in the data. Five of the mothers had two participating daughters. Three mothers did not a matching daughter and three daughters did not have a matching mother. The daughters' age ranged between 18–48 ($n = 86$, $M = 27.69$, $SD = 7.61$). The mothers included 83 (97.6%) participants born outside of the U.S. The daughters included 58 (67.4%) participants born outside the U.S. Among the mothers, 72.9% of the participants reported reading and speaking only Spanish, whereas the remaining participants reported reading and speaking both English and Spanish (none spoke English only). In comparison, only 11.6% of the daughter sample reported reading and speaking only Spanish, 86.1% were bilingual, while 2.3% reported reading and speaking only English.

Procedure

The Unidas Por La Vida (*United for Life*) intervention is a lifestyle intervention aimed specifically at Latino women. The intervention included mothers who had been diagnosed with Type 2 diabetes and their daughters who were obese and at risk for diabetes. Mothers and daughters were targeted for the Unidas study because the intergenerational bond can be culturally appropriate for health changes (Sorkin et al., 2013). Eight hundred and eighty-two mother-daughter pairs were assessed for eligibility from two federally qualified health centers (FQHCs) between September 2010 and August 2012. The FQHCs were located in Costa Mesa and Santa Ana, California; these cities have a high population of Latinos and the FQHCs mostly serve Latino patients (for more information, see Sorkin et al., 2013).

To be eligible to participate in the present study and larger study, mothers needed to have a diagnosis of Type 2 diabetes and daughters needed to be in the obese/overweight BMI range ($BMI > 25 \text{ kg/m}^2$). Type 2 diabetes was identified using the International Classification of Diseases, Ninth Revision (ICD-9) codes. In addition, both members of the pair needed to self-identify as Latina, be at least 18 years old, and live within 25 miles from each other.

Participants were excluded if they were pregnant or became pregnant during the study, lacked the competence to give consent, or had any contraindications that prohibited weight loss. Women were recruited at their regularly scheduled doctor appointments. Patients were asked if they were interested in learning how to manage their diabetes and whether they had an adult daughter interested in losing weight. Daughters were contacted by staff to ascertain their interest. Both mothers and daughters signed a consent form and a Health Insurance Portability and Accountability Act (HIPAA) waiver.

Baseline questionnaires included demographic information, health status, social network involvement, and dietary intake. All questionnaires were available in English or Spanish. Participants completed questionnaires at T1 (baseline) and also at T2 (16 weeks later). Participants were randomized into an intervention or control group using a block design. Participants in the intervention groups completed a 16-week program aimed at weight loss and dietary control consisting of group classes, home visits, and booster telephone calls. Participants in the control group received educational material that was mailed to their homes. Participants were weighed at both T1 and T2. This study used information provided in the T1 (baseline) questionnaire of the larger study.

Measures

Familism.—Familism was assessed using nine items drawn from the 14-item Sabogal et al. (1987) Familism Scale. To reduce participant burden, we used a revised scale comprised of two subscales: (a) familial obligations (5 items) and (b) family as key referents for decision making (4 items). The highest loading items for the ‘family obligations’ and ‘family as referents’ subscales were selected as differing the most from other measures in the larger study. A sample item from the familial obligations subscale was: “I would help within my means if a relative told me if he/she was in financial difficulty.” A sample item from the family referents subscale was: “The family should consult close relatives (uncles, aunts) concerning its important decisions” (0=*never*, 5=*always*). We computed an overall mean familism score in which higher scores indicated higher familism. The Cronbach’s alpha was .70 for mothers and .68 for daughters.

Perceived Stress.—Stress was assessed using nine items from the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983). One item out of the 10-item perceived stress scale was inadvertently omitted. To create a statistically normed 10-item scale, respondent’s individual mean was used as the value for the missing item. We then ran all of our models two ways: using the 9-item and 10-item measure. Because the results did not change, we chose to use the 10-item instrument so that the findings presented would benchmark against the literature. The scale measures the degree to which a person’s demands exceed their ability to cope. Participants were asked to rate how often they experience certain feelings or thoughts during the last month (1=*never*, 6= *always*). A sample item included: “How often have you felt that you were unable to control the important things in your life.” Positive items were reverse-scored. The answer options “almost always” and “always” were combined. The scale was recoded to a (0–4) scale and normed to the 10-item scale. Items were added to create a scale score where higher scores indicated higher perceived stress. The Cronbach’s alpha was .81 for mothers and .83 for daughters.

Health Conditions.—The number of health conditions was measured by asking participants whether they had been told by a doctor or other health professional that they had any of 13 conditions: high blood pressure or hypertension, asthma, emphysema or chronic bronchitis, diabetes, stomach or intestinal ulcers, liver disease, kidney or bladder problems, cancer or a malignancy of any kind, heart attack or health failure, stroke (current disability or impairment due to a stroke), hip fracture, and other health conditions (0=*no*, 1=*yes*) (Manton, Stallard, & Corder, 1998). Because the measure included diabetes as one of the 13 conditions, that item was removed for the purposes of the present study. Responses were summed to create a total score where the highest possible score was 12 and higher scores indicated higher numbers of overall health conditions and poorer health.

Bodily Pain.—Bodily pain was assessed using a two-item measure (Ware, & Sherbourne, 1992). Participants were asked “How much bodily pain have you had during the past 4 weeks” (1= *none*; 6= *very severe*) and “During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?” (1= *not at all*; 5= *extremely*). The two different Likert scales were converted to a 100-point scale and then averaged to create a final score. Higher scores indicate more pain. The Cronbach’s alpha was .75 for mothers and .86 for daughters.

Results

Mean levels and Bivariate correlations

We first examined mean levels and bivariate correlations between perceived stress, familism, bodily pain, and health conditions for mothers and daughters. All models were tested using data for which complete cases were available (Cohen, Cohen, West, & Aiken, 2014). For the instances in which mothers had two daughters in the sample, we randomized which daughter was included in the paired sample t-test. The participants with no matching mother/daughter were excluded from this analysis. In these instances, we also repeated analyses with an independent samples t-test and no change to significant differences were found. The means and correlations are reported in Table 1 and Table 2, respectively. Paired sample t-tests indicated that mothers and daughters did not report significantly different levels of familism, $t(70) = -.92, p = .36$, nor significantly different levels of perceived stress, $t(75) = -.77, p = .45$. However, there was a significant difference in the health conditions and bodily pain reported by the mothers and daughters. Mothers reported more health conditions than daughters, $t(72) = -8.14, p < .001$. Mothers also reported more bodily pain than the daughters, $t(74) = -3.82, p < .001$. Independent sample t-test showed that mothers and daughters did not report significantly different levels of familism, $t(161) = -.49, p = .63$, nor significantly different levels of perceived stress, $t(165) = -1.12, p = .26$. Mothers reported more health conditions, $t(120.30) = -8.28, p < .001$, and more bodily pain than the daughters, $t(165) = -3.82, p < .001$.

Hypothesis Testing

To examine our central hypothesis that familism would moderate the effects of perceived stress on various health outcomes for mothers and their daughters, we conducted two-step hierarchical regression analyses. Analyses were conducted separately for mothers and

daughters who were either were at risk or already had Type 2 diabetes. The variables familism and perceived stress were entered in step one. To increase interpretability, the variables were mean centered, as recommended by Aiken and West (1991). An interaction was then computed between the centered familism and perceived stress variables; the interaction was included in step two. If the step two interaction was significant, we tested the simple slopes at low (-1 SD below the mean), mean, and high (1 SD above the mean) levels of familism. If the step two interaction was non-significant, we interpreted the main effects in step one.

Health Conditions

We first examined the mothers. Contrary to hypothesis, the interaction between familism and perceived stress did not predict health conditions in the mothers (see Table 3). When the independent effects of each variable were examined, step one showed no main effect of familism on the number of health conditions. However, there was a main effect of perceived stress on health conditions. Mothers who reported higher perceived stress reported a greater number of health conditions than did those who reported lower perceived stress.

We next examined the daughters. For the daughters, the expected interaction between familism and perceived stress predicting health conditions was significant (see Figure 1). To better understand the interaction, we conducted simple slopes tests to examine the association between perceived stress and health conditions at varying levels of familism. There was a significant positive association between perceived stress and number of health conditions when familism was evaluated at one standard deviation below the mean, $\gamma = 1.97$, $p = .001$, and when familism was evaluated at its mean, $\gamma = .74$, $p = .04$. The association was not significant when familism was evaluated at one standard deviation above the mean, $\gamma = -.49$, $p = .46$. Therefore, at average and lower levels of familism, greater perceived stress was associated with more health conditions.

Bodily Pain

Contrary to our hypothesis, there was no significant interaction between familism and perceived stress predicting bodily pain for the mother sample (see Table 3). Step one also showed no association or main effect between familism and bodily pain. However, there was a positive main effect between perceived stress and bodily pain. Mothers who reported higher perceived stress reported more bodily pain.

For the daughters, the expected significant interaction between familism and perceived stress predicting bodily pain was observed (see Figure 2). Simple slopes tests showed that the association between perceived stress and bodily pain was significant at low levels of familism, $\gamma = .04$, $p = .01$. However, the association was not significant at mean, $\gamma = .01$, $p = .28$, or high levels of familism, $\gamma = -.02$, $p = .38$. Overall, as familism decreased, perceived stress was more strongly associated with bodily pain.

Discussion

This study examined whether familism, a cultural variable, moderated the association between perceived stress and two indicators of physical health in a sample of Latina mothers

who had Type 2 diabetes and their daughters who were at risk for developing Type 2 diabetes. The hypothesis was partially supported. Familism moderated the negative effects of perceived stress on the number of health conditions and the extent of bodily pain for the daughters. These associations were not observed for the mothers. These distinctions emerged even though mothers and daughters did not differ in their levels of familism or perceived stress. Our findings make two contributions to the study of culture and health. First, this study is one of the first to show empirically that a cultural value, familism, may play a positive role in physical health outcomes. Second, these findings indicate that the buffering effect of familism may have boundary conditions, which is relevant for understanding how and when familism may influence health for different people under different circumstances.

The daughters who were at risk for Type 2 diabetes benefited from the moderating effect of familism. We interpret this finding as showing that valuing close and warm family relationships can attenuate the negative effects of perceived stress on health. However, we are mindful that these effects were only observed for the daughters. A possible explanation as to why these effects were only observed in the daughters is that familism may have a protective effect on conditions that are not yet formally diagnosed and, therefore, do not yet generate stress and significant self-care requirements. Familism may benefit health primarily in the context of acute stressors but may be less beneficial in the context of persistent stress that is often associated with a chronic illness. Whether the benefits of familism are constrained by this potential boundary condition or not, these findings are important because stress can have serious health implications for people who are at risk for Type 2 diabetes. For example, stress is well-known to disrupt health management, as well as self-care practices, in ways that ultimately have a physical toll on the body (American Diabetes Association, 2017).

Contrary to the hypothesis, there was no moderating effect of familism on the indicators of mothers' physical health outcomes. In our view, these findings are important to understanding that familism may not be beneficial in all circumstances (e.g., Fuligni et al., 2009). Although the mothers reported experiencing the negative effects of stress and high levels of familism, they did not benefit from the buffering aspect of familism. We interpret this finding as stemming from the objectively poorer health of the mothers; the mothers were already dealing with a serious chronic illness. At that point in one's health trajectory, the health condition may be too severe for familism to be beneficial. Rather, familism may be most beneficial when health is at risk, but before one is facing diagnosable chronic illness. It is also possible that meeting the values of familism may demand more and, for this reason, be less beneficial for mothers. One implication of this finding is the possibility that familism may not always be useful, and it warrants noting that there may also be circumstances when it is detrimental (e.g., Zayas & Pilat, 2008). A better understanding is needed regarding the effects of familism not only in these different illness contexts but also across life stages (e.g., are familism values highest and/or most beneficial among youngest and oldest, but not middle-aged, generations?) and personal circumstances (e.g., do the benefits of familism vary with physical distance from the family?). For now, it is important to acknowledge that there may be circumstances when the emphasis placed on family interdependence and

obligations may lead to additional stress in the context of chronic health conditions and that this possibility merits additional study.

The results of this study are important for moving research on culture and health forward. Research increasingly shows that familism values can be beneficial for health, but too little is known about the psychological processes and circumstances through which familism is linked with health. Other research has shown that familism's links with relationship processes are one path through which familism is indirectly linked with health (Campos et al., 2014). Here, we find that familism plays a role in attenuating perceived stress, a psychological process that can worsen health. We speculate that the way that familism intersects with stress has implications for health, we observed in our sample of daughters. However, we are also mindful that the converse may be true; severe stress may be overwhelming and, as a result, may compromise the possible benefits that could otherwise be derived from familism. Altogether, these patterns suggest that future research on this topic should focus on understanding the varied circumstances and specific populations in which benefits of familism are likely to be observed. Our work suggests that familism may be beneficial for Latinos who are at risk of developing a serious chronic illness, but much work remains to be done to better understand how these processes unfold.

Our findings may also have implications for future research on pathways to health equity. For example, it would be useful for interventions not only to focus on health behaviors and illness management but also to examine how cultural values vary or take on new meanings across different generations within a family. This focus may yield new knowledge that can be utilized to make interventions maximally effective and culturally relevant. It would be useful, as well, to examine whether familism may play a role in the physical health of caregivers of patients with chronic illnesses, or the health of people managing acute illnesses or injury.

The findings of this research highlight that this topic of study is still fairly new and has yet to cohere into a formal theoretical framework that compellingly weaves together the various threads on cultural values, perceived stress, and physical health into a specific theory that can guide predictions for future research. Although we drew from the theorizing of other scholars on the possible role of cultural values for Latino health, as well as our own conceptual analysis, a need still exists for a specific theoretical framework to guide this area of research. It is beyond the scope of this paper, but we hope that readers of this work will be inspired to envision a future theoretical framework for the study of culture values, stress, and health. Tsai and Knutson's (2001) Ideal Affect framework that predicts that social norms about ideal emotions shape actual emotion experience, Dressler and Bindon's (2000) "cultural consonance" framework that suggests that better health outcomes accrue to individuals whose behavior approximates or lives up to cultural expectations, and Arthur Kleinman's (1987) explanatory models framework for understanding how a person's social world affects health are strong examples of the kind of generative frameworks needed for this specific area of research.

Research is also needed that addresses the positive influences of Latino culture on health and health practices. To date, the literature on Latino health has primarily focused on the

negative effects of social disadvantage, such as experiences of discrimination, on mental and physical health (Hwang & Goto, 2008). Other work has investigated whether lower socioeconomic status and overprotective family relationships can compromise Latinos' health (as cited in Gallo et al., 2009). Research on these risk factors is important, but research on resilience factors, particularly those that are embedded within cultural norms, is also important. Indeed, studying sources of culture that may protect health is urgent given the possibility that cultural resilience factors may be lost with assimilation or rejected because of the marginalized status of one's cultural/ethnic group. Thus, it is critical to know whether, as this study showed, Latino cultural values afford some protection from the health-damaging negative effects of stress on at-risk individuals. Such research is particularly important in view of the fact that Latinos are the fastest growing and second largest ethnic minority group in the United States; estimated to account for 31% of the U.S. population by 2060 (U.S. Census, 2010).

Although our study sheds light on the potential of cultural values for protecting health, the limitations of the study should also be noted. First, the modified familism scale used in this study emphasized items that assessed family obligations and family as referents. The scale did not tap support from family, an aspect of familism that may also be relevant for health and self-care (Sabogal et al., 1987; Katiria Perez, & Cruess, 2014). Our findings, therefore, may reflect a conservative estimate of how much familism may be benefiting the mother and daughters in the sample. Future research that includes the support facet of familism is needed to examine this possibility. Second, this study examined only one chronic illness and two physical health outcomes (bodily pain and number of health conditions). More empirical research is needed to understand whether familism may have beneficial effects on physical health in the context of other illnesses/diseases. Last, this study examined cross-sectional data, which limits inferences about directionality or causality.

A strength of the study is that it examined a group of participants who are underrepresented in research and whose health is at risk due to their significant social disadvantages. By investigating the potentially health-protective role of Latino cultural values, researchers and practitioners may be able to better explain and improve the health of the Latino community. Future research should focus on investigating whether familism has the potential to moderate the effects of perceived stress on other health outcomes such as medication adherence, healthy eating, and exercise. It is possible that while familism may not be able to counteract the effects of stress and diabetes on physical health outcomes, familism may have an effect of health practices or outcomes that are more malleable. There is also a need to further examine the protective factors or possible limitations of other relationship cultural values (e.g., *simpatia*) in the context of chronic health conditions (e.g., Merz, 2016). It would also be useful and informative to examine whether the effects of familism are also pronounced in individuals from different backgrounds who place similar emphasis on family relationships. After all, the details of how humans should value family varies, but the importance of family relationships is a human universal. Last, the findings are encouraging for future research examining whether cultural values should be incorporated in longitudinal and intervention health work.

In conclusion, this study sheds light on whether one cultural factor, familism, may benefit the health of people who are at risk for chronic health conditions or complications. However, this study also shows that a better understanding of how, for whom, and under what circumstances familism can be beneficial for health is needed. As new approaches are examined to achieve health equity across racial/ethnic groups, research that brings about a better understanding of the role of cultural context and familial relationships in health management and protection may prove to be a fruitful way forward.

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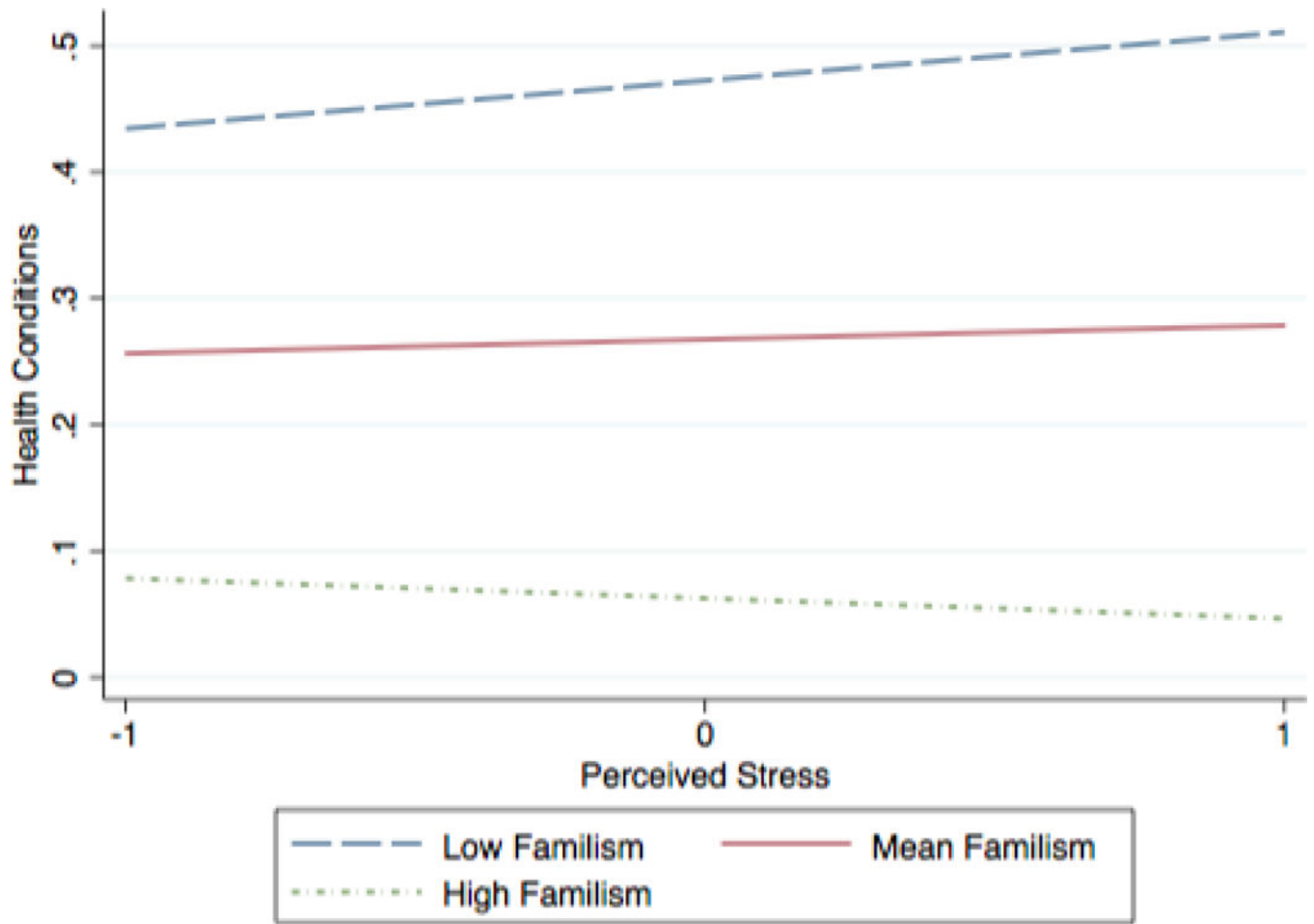


Figure 1.
Interaction effect between familism and perceived stress on health conditions

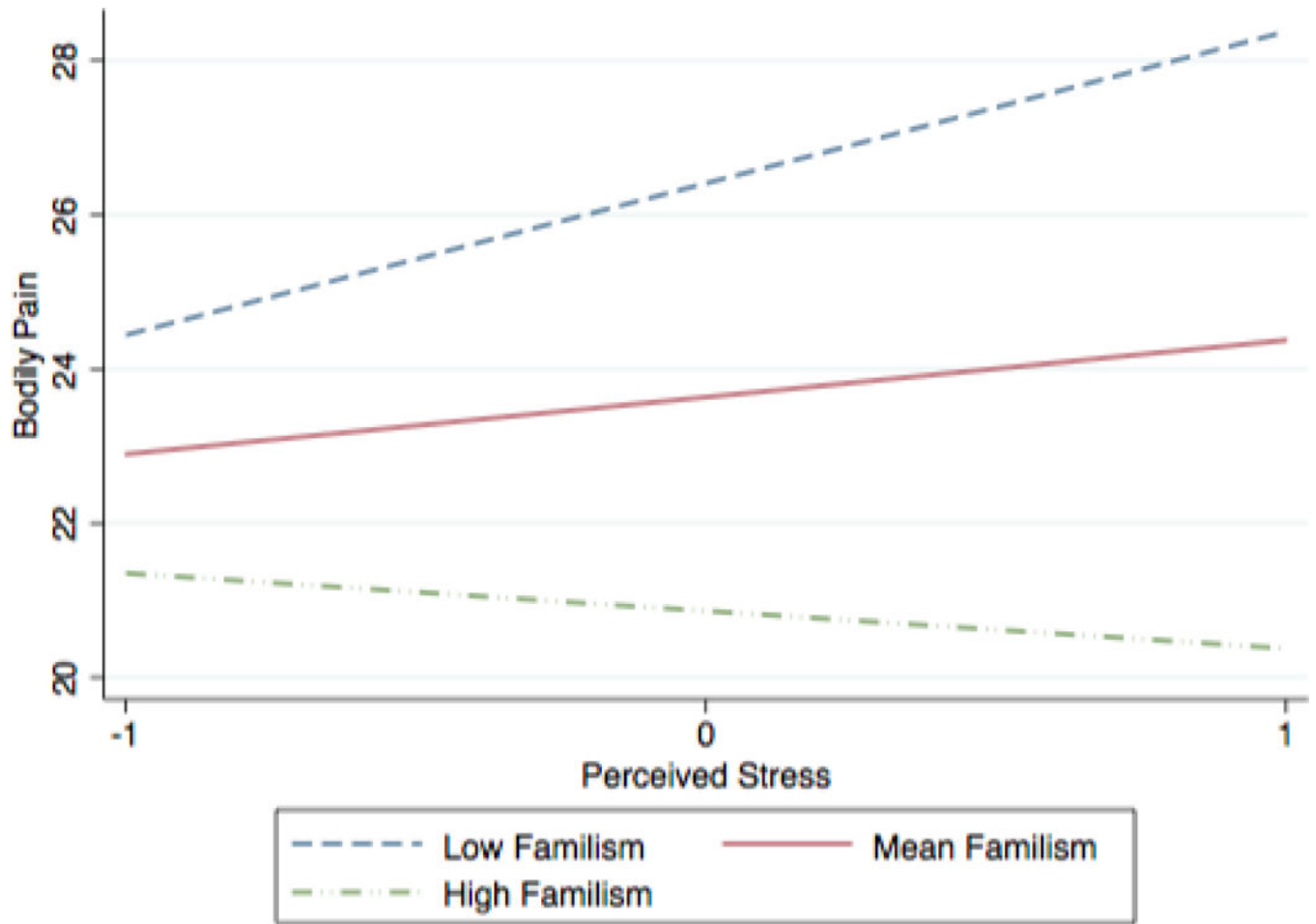


Figure 2. Interaction effect between familism and perceived stress on bodily pain

Table 1.

Bivariate Correlations for Familism, Perceived Stress, and Physical Health for the Mothers and Daughters.

Variable	1	2	3	4
1. Familism	1.00	-.06	-.07	-.06
2. Perceived Stress	-.02	1.00	.27*	.33*
3. Health Conditions	-.20	.14	1.00	.30*
4. Bodily Pain	-.06	.27*	.30*	1.00

Note. $N=171$ *
 $p < .05$.**
 $p < .01$.

Values above the diagonal are correlations for the mothers and values below are for the daughters.

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Table 2.

Means for Familism, Perceived Stress, and Physical Health.

Variable	n	Mean	Standard Deviation
1. Familism			
Mothers	80	3.05	.90
Daughters	83	2.92	.67
2. Perceived Stress			
Mothers	82	16.33	7.24
Daughters	85	15.56	7.18
3. Health Conditions			
Mothers	79	1.38	1.04
Daughters	84	.25	.64
4. Bodily Pain			
Mothers	84	36.83	23.80
Daughters	83	23.47	21.18

Note. N=171

Table 3.

Regression Results of Perceived Stress and Familism Predicting Physical Health.

	Bodily Pain				Health Conditions			
	Mothers (<i>n</i> =78)		Daughters (<i>n</i> =77)		Mothers (<i>n</i> =74)		Daughters (<i>n</i> =78)	
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Familism	-.87 (-.03)	-.73 (-.03)	-1.99 (-.06)	-2.77 (-.09)	-.10 (-.08)	-.10 (-.07)	-.19 [*] (-.22)	-.21 [*] (-.24)
Perceived Stress	1.04 [*] (.32)	1.01 [*] (.31)	.87 [*] (.28)	.73 (.23)	.05 [*] (.28)	.05 [*] (.28)	.01 (.16)	.01 (.12)
Familism [*] Perceived Stress		.32 (.08)		-1.23 [*] (-.26)		.01 (.04)		-.03 [*] (-.23)
Constant	37.28	37.40	23.83	23.64	1.51	1.51	.29	.27
<i>R</i> ²	.11	.11	.08	.15	.09	.09	.08	.13
<i>F</i>	4.50	3.15	3.28	4.24	3.44	2.31	3.14	3.57
<i>R</i> ² change		0		.07		0		.05

*
p < .05.

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