Testing Sociocultural Explanations for Latino Health Paradoxes: The Case of Social Support and Depression

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Abstract

We tested sociocultural explanations for Latino health outcomes by examining whether positive social support from and negative interactions with spouses/partners, friends/relatives, and children explained nativity differences in depressive symptoms among Latinos. We analyzed data from the 2001-2003 Chicago Community Adult Health Study. Immigrants and U.S.-born Latinos reported similar levels of positive support from friends/relatives and spouses/partners; however, U.S.-born Latinos reported higher levels of negative interactions with friends and spouses but lower levels of negative interactions with their children. Negative interactions with spouses/partners and from friends/relatives explained the nativity differences in mental health among Latinos in Chicago. Except for marital support, none of the other sources of positive social support explained the mental health advantage observed among immigrants. Our study shows that availability and quality of social support by nativity in the United States is multifaceted, and that explanations in the literature for immigrant and Latino health outcomes require deeper examination and more nuanced theorizing.

Keywords: social support, depression, immigration, Latinos, immigrant health paradox

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Introduction

Depression is a major health problem affecting a large proportion of adults in the United States, with the prevalence of major depression more than doubling from 3.3% to 7.1% from 1991-1992 to 2001-2002 (Compton, Conway, Stinson, & Grant, 2006). Despite their lower socioeconomic status, Latinos usually face lower risks of most psychiatric conditions, including depression, than non-Latino Whites (Alegria et al., 2008; González, Tarraf, Whitfield, & Vega, 2010). However, there are important differences in prevalence rates by nativity and Latino subgroups.

Scholars have considered paradoxical the fact that certain immigrant Latinos experience better mental health outcomes than U.S.-born Latinos. Given the strong association between social ties and health, scholars have proposed that one possible explanation for the better-than-expected mental health outcomes observed among certain Latinos immigrants, relative to their U.S.-born counterparts, may be the greater availability and better quality of social support (Almeida, Subramanian, Kawachi, & Molnar, 2011; Escarce, Morales, & Rumbaut, 2006; Vega & Amaro, 1994). This explanation suggests that, because of their cultural orientation, Latino immigrants are more likely to have larger social networks and higher levels of support than U.S.-born Latinos. Furthermore, according to this explanation, as U.S.-born Latinos are exposed to a more individualistic culture in the United States, their social networks tend to become smaller and less supportive, which in turn negatively impacts their health (Escarce et al., 2006). Despite the prominence of this explanation in the Latino health literature, few studies have empirically examined its validity (Almeida et al., 2011). At minimum, doing so requires an assessment of Latino social ties by nativity status as well as an empirical assessment of whether social ties explain nativity differences in health outcomes. Even fewer studies have examined the relative

contribution of different sources of support (e.g., spouses/partners, friends/relatives, children) and the nature of social interactions (i.e., positive or negative) for explaining nativity differences in health outcomes (Almeida et al., 2011).

To gain a better understanding of Latino social ties, immigration, and mental health outcomes, we analyzed data from the Chicago Community Adult Health Study (CCAHS). Our objectives are two-fold; first, we test the proposition that immigrant Latinos have higher levels of social support than U.S.-born Latinos; and second, we examine whether social ties explain nativity differences in depressive symptoms among Latinos in the United States. Because social ties are multifaceted, we focus on both positive and negative aspects of relationships with spouses/partners, friends/relatives, and children.

Latino Mental Health Patterns

Data collected from the most recent and comprehensive study of Latino mental health in 2002-2003—the National Latino and Asian American Study (NLAAS)—indicated that about a third of Latino adults reported experiencing a psychiatric disorder during their lifetime (28.1% among men and 30.2% among women) (Alegria et al., 2007), and the prevalence of 12-month depressive disorder reached 10.8% among Latinos (Alegria et al., 2008). A closer look at Latino mental health patterns reveals that they vary by Latino subgroup and nativity status. For instance, Puerto Ricans experience higher levels of depression than Mexicans and Cubans (Alegria et al., 2007). Furthermore, studies have shown that, in general, U.S.-born Latinos have higher levels of psychiatric morbidity, including depression, than immigrants (Alegria et al., 2008; Almeida et al., 2011; Grant et al., 2004). For example, based on data from the National Comorbidity Survey Replication (NCS-R) and NLAAS, Alegria and co-authors (2008) showed

that U.S.-born Latinos had higher prevalence of a major depressive episode (18.6% vs. 13.4%) and other depressive disorders (19.8% vs. 14.8%) than Latino immigrants. Nonetheless, a more complex picture emerges when data are disaggregated by nativity and ethnicity. Mexican immigrants had lower rates of depressive disorders than U.S.-born Mexicans (Alegria et al., 2008). However, the opposite pattern was found among Cubans and Puerto Ricans, such that those born in the United States had lower rates of lifetime major depression than their immigrant counterparts (Gonzalez et al., 2010).

Understanding Latino Mental Health Patterns: The Role of Social Support

Social support, by means of emotional, instrumental or financial support, may buffer or reduce the impacts of stressful life events; however, there is mixed evidence for the relationship between immigrant status and social ties. Some studies have found higher levels of social support and social integration among Latino immigrants than among their U.S.-born counterparts (Almeida, Kawachi, Molnar, & Subramanian, 2009; Landale & Oropesa, 2001; Vega, Kolody, Valle, & Weir, 1991; Zambrana, Scrimshaw, Collins, & Dunkel-Schetter, 1997), whereas others have reported similar or lower levels of social ties among U.S.-born and immigrant Latinos (Almeida et al., 2009; Golding & Baezconde-Garbanati, 1990; Harley & Eskenazi, 2006; Landale & Oropesa, 2001; Rodriguez, Mira, Paez, & Myers, 2007; Vega & Kolody, 1985; Viruell-Fuentes, Ponce, & Alegria, 2012). Differences in measurement and sampling strategies used across these studies (e.g., focus on women, geographic region) may account for some of these divergent findings.

Social support, particularly emotional support, has been shown to buffer or reduce the risk of depression and depressive symptoms among Latinos in the United States (Almeida et al.,

2011; Kollannoor-Samuel et al., 2011; Vega et al., 1991). Studies have indicated that positive support from family and friends have a protective effect on the risk of major depression among Latinos; however, in analyses that mutually adjust for different sources of support, only family support remained statistically significant (Almeida et al., 2011). High levels of family support seem to be particularly health protective for Mexican immigrants (Almeida et al., 2011).

Most of the current literature focus on positive aspects related to social support, even though some social interactions are negative in nature. Negative interactions and hassles with spouses/partners, friends/relatives, and children can be stressful, and there is evidence for an association between such daily hassles with higher levels of cortisol, which contribute to the development of depression (Sher, 2004). Daily hassles have been associated with anxiety symptoms among young Latinos in the United States (Suarez-Morales & Lopez, 2009). Poor family functioning and family conflict as well as perceived lack of or dissatisfaction with social support have been associated with poor mental health among Latinos (Sarmiento & Cardemil, 2009; Swenson, Baxter, Shetterly, Scarbro, & Hamman, 2000). Therefore, to achieve a clearer understanding of the relationship between immigrant status and social ties requires paying attention to various dimensions of social ties, including different types of relationships and the quality of these relationships.

Methods

Data

We analyzed cross-sectional survey data from CCAHS, a multistage probability sample of 3,105 adults, ages 18 and older living in Chicago, Illinois, stratified into 343 neighborhood clusters previously defined by the Project on Human Development in Chicago Neighborhoods

(PHDCN) (Morenoff et al., 2007; Sampson, Raudenbush, & Earls, 1997). The data were collected between May 2001 and March 2003 via face-to-face interviews with one individual per household, with a response rate of 71.8 percent. The sample included 804 Latinos, 1,240 non-Latino Blacks, 981 non-Latino Whites, and 80 people of other races/ethnicities. Our study focused on the Latino subsample. The data were weighted to match the age, race/ethnicity, and sex distributions of the 2000 Census population estimates for the city of Chicago. Additional details of the CCAHS race/ethnicity classification methods and weighing procedures have been previously published (Morenoff et al., 2007; Viruell-Fuentes et al., 2012).

Variables

Six variables related to social ties were analyzed: spouse/partner positive support, friend/relative positive support, children positive support, spouse/partner negative hassles, friend/relative negative hassles, and children negative hassles. Spouse/partner positive social support was measured by taking the mean of the reverse-coded responses to two questions about the extent to which respondents reported that their spouse/partner (1) made them feel loved and cared for, and (2) were willing to listen to their worries and problems. A friend/relative positive support index was constructed by taking the mean of the reverse-coded values of two questions where respondents reported the extent to which friends/relatives (1) made them feel loved and cared for, and (2) were willing to listen to their worries and problems. The answers were reverse-coded because the original response options to these questions ranged from one to five, with higher values indicating lower levels of support. With reverse-coding, the final index ranged from one to five, where higher scores indicated higher levels of positive support.

The spouse/partner negative hassles index was constructed by taking the mean of the reverse-coded values of two questions regarding the extent to which respondents reported that

their spouse/partner (1) makes too many demands on them and (2) is critical of the respondent or what she/he does. The friend/relative negative hassles index was constructed by taking the mean of the reverse-coded values of two items where respondents assessed the extent to which friends/ relatives (1) make too many demands on them, and (2) are critical of the respondent or what she/he does. The answers for these indices were reverse-coded because the original response options to these questions ranged from one to five, with higher values indicating lower levels of negative hassles. With reverse-coding, the final indices ranged from one to five, where higher scores indicated higher levels of negative hassles.

Children positive support was measured by one item where respondents were asked how much their children made them feel loved and cared for. Because the original response options ranged from one to five, with higher scores indicating lower levels of support, we reverse-coded this variables so that higher scores indicated higher levels of support. Children negative hassles were measured by one item where respondents were asked the extent to which they felt their children made too many demands on them. The original variable was reverse-coded, such that the variable used in our analyses ranged from one to five, with higher scores indicating higher levels of hassles.

The questions regarding spouse/partner positive support and negative hassles were only asked of those who were married or had been living with an intimate partner for one year or more. Only respondents who had children of any age living in the household or elsewhere were asked the questions related to positive support and negative hassles from children (the category "children" included biological, adopted, step, and foster children).

Symptoms of depression were measured by an 11-item index adapted from the Center for Epidemiological Studies Depression (CESD) scale (Kohout, Berkman, Evans, & Cornoni-

Huntley, 1993), which in our study had an alpha coefficient of 0.86 for the Latino sample. Nativity was dichotomized as foreign-born versus U.S.-born. Ethnicity was also dichotomized as Mexican and non-Mexican (i.e., Puerto Rican and Other Latino). Additionally, we included controls for demographic characteristics and socioeconomic status. We accounted for sex, age (a continuous measure in years), marital status (currently married vs. not), whether participants had children (yes vs. no), educational level in years (less than 12, 12, 13-15, and 16 and more), and family income (a categorical indicator in dollars). We also controlled for physical health via a count of health conditions (out of 13) the respondent had been diagnosed with in his or her lifetime.

Analytic Strategy

In our first set of analyses, we used Ordinary Least Squares (OLS) multiple regression analysis to examine nativity differences in the quality of social relationships with spouses/partners, friends/relatives, and children. Three models were explored. In Model 1, we controlled for sex and age; Model 2 additionally accounted for Latino origin, education, income, marital status, and whether participants had children; and Model 3 further adjusted for the number of chronic health conditions (Model 3). In our second set of analyses, we assessed whether social ties helped explain the relationship between immigrant status and depressive symptoms using OLS multiple regression analysis, after accounting for demographic and socioeconomic characteristics as well chronic health conditions. All analyses were weighted to account for selection rates, household size, and neighborhood clustering using the complex survey feature of Stata, version 10.

Results

In the CCAHS, most of the participants (64%) were foreign-born. Compared to foreign-born Latinos, U.S.-born Latinos reported similar levels of positive support from spouses/partners and children, but higher levels of positive support from friends and relatives. At the same time, U.S.-born Latinos had higher levels of negative hassles from all sources. In addition, an immigrant advantage in mental health was evident, such that foreign-born Latinos, who were also older, reported lower levels of depressive symptoms than U.S.-born Latinos. A higher proportion of foreign-born Latinos was married and with children than U.S-born Latinos.

[Table 1 about here]

Table 2 presents OLS regression models examining nativity differences in the quality of social relationships with spouses/partners, friends/relatives, and children. With respect to the positive quality of social relationships, Model 1 shows that, compared to immigrants, U.S.-born Latinos reported having access to higher levels of positive support from friends and relatives after adjusting for age and sex; however, this relationship becomes non-significant after additionally controlling for Mexican origin, family characteristics, socioeconomic status (Model 2), and physical health (Model 3). In all models, U.S.-born Latinos had equal levels of positive support from their spouses/partners and children. Table 2 further shows that U.S.-born Latinos reported higher levels of negative hassles in all types of relationships, although negative hassles from children become statistically non-significant in Model 3.

[Table 2 about here]

Through our analysis (not shown), we determined that the statistically significant immigrant advantage in CES-D held in multivariate analysis that accounted for demographic and family characteristics, socioeconomic status, and physical health (B= 0.115, p=0.03).

We thus assessed whether the quality of social relationships could help explain the immigrant health advantage in depressive symptoms among Latinos found in this sample. Social interactions with spouse/partner, both positive and negative, eliminated the statistically significant advantage that immigrant Latinos had on depressive symptoms (Table 3). Negative hassles from friends/relatives also eliminated the immigrant advantage in depressive symptoms. However, neither positive support from friends/relatives, positive support from children, nor negative hassles from children explained the immigrant health advantage in CES-D.

Additionally, Table 3 shows that higher levels of positive support from spouses/partners, friends/relatives, and children were associated with lower levels of depressive symptoms, whereas higher levels of negative hassles from spouses/partners and friends/relatives resulted in higher levels of depressive symptoms. Negative hassles from children were not significantly associated with depressive symptoms.

[Table 3 about here]

Discussion

In this study, we investigated two prevailing hypotheses regarding Latino social ties, immigrant status, and mental health. First, we examined the hypothesis that, compared to U.S.-born Latinos, Latino immigrants experience higher levels of social support. Based on this proposition and long-standing research showing that social ties and social support impact health outcomes, scholars have suggested a second hypothesis: that social ties might help explain some better-than-expected health outcomes that Latino immigrants experience relative to U.S.-born Latinos. We, thus, tested whether social support from spouses/partners, friends/relatives, and children did indeed explain the immigrant mental health advantage in depressive symptoms

observed among Latinos in Chicago. Our study further extends the examination of the above hypotheses by attending both to the positive and negative aspects of social relationships.

Immigrant Status Differences in Social Support and in Negative Hassles

The literature on the relationship between immigration and social ties points to two perspectives. One highlights "Latino culture" as being health protective, and proposes that, due to their cultural orientation, Latino immigrants are more likely to have access to higher levels of social support than U.S.-born Latinos (Desmond & Turley, 2009; Escarce et al., 2006; Rumbaut & Weeks, 1996; Sherraden & Barrera, 1996). The second perspective highlights the processes of immigration as disruptive of social ties, and thus proposes that, compared to Latino immigrants, U.S.-born Latinos are more likely to have higher levels of support (Portes, 1998; Vega & Amaro, 1994; Zhou, 1997).

In multivariate analyses, we found that U.S.-born Latinos reported similar levels of positive support from their spouses/partners, friends/relatives, and children as those reported by immigrants. This finding challenges the first proposition that would lead us to expect higher levels of support among immigrants compared to U.S.-born Latinos. Our finding departs from those that have found higher levels of support among immigrants compared to U.S.-born Latinos (Almeida et al., 2009; Landale & Oropesa, 2001; Vega & Kolody, 1985; Zambrana et al., 1997). One study, in particular, reported higher levels of family support, but lower levels of support from friends among immigrants than among U.S.-born Latinos (Almeida et al., 2009). A potential reason for these divergent findings might be the variations in social support measures across studies and sampling strategies. For instance, one set of our measures inquires about both the availability of support (and hassles) from friends and relatives; as such, we were unable to

distinguish between these two sources of support. Nevertheless, our findings are in keeping with those of others suggesting that, along certain measures, U.S.-born Latinos have similar levels of social support to that of Latino immigrants (Almeida et al., 2009; Golding & Baezconde-Garbanati, 1990; Harley & Eskenazi, 2006; Landale & Oropesa, 2001; Rodriguez et al., 2007; Vega & Kolody, 1985; Viruell-Fuentes & Schulz, 2009; Viruell-Fuentes et al., 2012).

We further examined whether negative hassles differ across these groups. In our sample, U.S.-born Latinos reported higher levels of negative hassles from spouses/partners and friends/relatives; however, in multivariate analyses, hassles from children did not differ among Latinos by nativity status. These findings contest the second proposition: that immigrants experience lower levels of social support and probably higher levels of tensions within their networks due to the stressors related to the processes of immigration.

Our findings suggest that, relative to the U.S.-born Latinos, immigrant Latinos do not necessarily have more supportive networks, but that they perhaps experience them as less stressful. It is possible that, because immigrants face challenges that are perhaps more stressful (e.g., family separation, legal status, language barriers, lack of access to health care, unemployment, and low socioeconomic status) than those related to social life, stressors associated with social relationships might not be as salient. Another possibility is that U.S.-born Latinos, raised in a society dominated by individual values (Caplan, 2007), become less tolerant of social hassles, which may impact their mental health and wellbeing. Together, these findings point to the importance of testing prevailing assumptions about the nature of Latino social ties, and suggest that conducting such investigations requires assessing both the negative and positive aspects of social ties as well as the different sources of social support.

Latino Mental Health Outcomes and Their Explanations

Our study converges with previous studies in showing that Latino immigrants experience lower levels of depression than U.S.-born Latinos (Alegria et al., 2008; Almeida et al., 2011; Grant et al., 2004). In addition, it confirms the importance of social support for mental health, as we found that higher levels of positive support from spouses/partners, friends/relatives, and children were associated with lower levels of depressive symptoms for both immigrant and U.S.-born Latinos; also, higher levels of negative hassles from spouses/partners and friends/relatives were associated with higher levels of depressive symptoms. Our findings, thus, converge with those that have found that negative interactions (i.e., hassles, poor family functioning, family conflict, and perceived lack of or dissatisfaction with social support) have been associated with anxiety symptoms and poor mental health among Latinos (Sarmiento & Cardemil, 2009; Swenson et al., 2000).

In examining whether the better-than-expected mental health outcomes observed among Latino immigrants, relative to their U.S.-born counterparts, may be explained by the quality of social ties (Almeida et al., 2011; Escarce et al., 2006; Vega & Amaro, 1994), we found that positive social support from spouses/partners and negative hassles from them and friends/relatives explained nativity differences in mental health among Latinos in Chicago. In other words, U.S-born Latinos appear to experience worse mental health outcomes relative to immigrants, in part, because they face more hassles. Indeed, Cook and colleagues (2009) found that family conflict played a key role in explaining nativity differences in mental health among Latinos in NLAAS.

None of our remaining social ties variables (positive support from friends/relatives and from children; and negative hassles from children) explained nativity differences in mental

health in our sample. That hassles from children were not associated with depressive symptoms suggests that parents may expect certain hassles/demands from children as natural part of the parenting process, and such hassles/demands, thus, do not take as much a toll on their mental health that hassles from relationships with other members of their social networks do.

Limitations

This study has some limitations. It is based on a sample from one city in the United States, Chicago, which limits the generalizability of our findings. Because we restricted our analysis to Latinos in the CCAHS, our sample size is small, which prevented us from disaggregating the analysis by Latino subgroup. In the current study, Mexicans (66 % of the sample) were the largest Latino subgroup. Thus, our findings potentially reflect more the experiences of Mexicans than those of other Latinos in Chicago. For instance, in national studies, Mexican immigrants have been found to have significantly lower risk of mood and anxiety disorders compared to their U.S.-born counterparts (Grant et al., 2004), a finding which was also true in our study. The mean number of depressive symptoms among U.S.-born Mexicans (1.81) was higher than those among Mexican immigrants (1.66) (p=0.015).

The cross-sectional design of our study, which collected data at the point of immigrant destination, is comparable to most prior immigrant health studies; however, such a design limits our ability to move beyond describing associations to testing pathways of influence. In addition, most research investigating the links between social networks and health among Latinos focuses on social ties at immigrant-destination points and has seldom examined transnational social ties (Acevedo-Garcia, Sanchez-Vaznaugh, Viruell-Fuentes, & Almeida, 2012; Viruell-Fuentes & Schulz, 2009). This limitation is also present in our study, as our measures do not distinguish

between local and transnational social ties. Future studies that utilize longitudinal and transnational research designs are thus necessary to better understand how immigration and its effects shape social ties and health among Latinos (Acevedo-Garcia et al., 2012; Landale & Oropesa, 2001; Viruell-Fuentes & Schulz, 2009).

The data used in this study were self-reported. This could be a possible source of bias if U.S.-born Latinos differ from foreign-born Latinos in their assessment of social support and hassles. In addition, the measures for children positive support and negative hassles available in the CCHAS are one-item measures. Fuller measures of social support and hassles associated with children might be necessary to provide a fuller understanding of how relationships with children impact health outcomes among Latinos. Although depressive symptoms were assessed with a validated instrument, future research should utilize additional measures of mental health.

Despite these limitations, our study moves the field forward by empirically testing various claims that are often cited but rarely examined in the literature. Furthermore, unlike other studies, we assessed both negative and positive aspects of social ties and empirically tested whether social ties help explain nativity differences in mental health.

Conclusion

This paper addresses questions raised in the literature regarding explanations for the better-than-expected mental health outcomes observed among immigrant Latinos relative to U.S.-born Latinos. In particular, we focused on whether social ties explained nativity differences in depressive symptoms among Latinos, as has been suggested by previous literature (Almeida et al., 2011; Escarce et al., 2006; Vega & Amaro, 1994). To our knowledge, our study is among the first to empirically examine this explanation. Our research distinguished both the positive

and negative dimensions of social relationships and their relation to immigration and health. By doing so, we found that the higher prevalence of negative hassles that U.S.-born Latinos experience plays an important role in explaining differences in mental health outcomes among Latinos in Chicago. Our study highlights the need for more nuanced theorizing and empirical examination of Latino social ties and their health implications.

References

Acevedo-Garcia, D., Sanchez-Vaznaugh, E. V., Viruell-Fuentes, E. A., & Almeida, J. (2012). Integrating social epidemiology into immigrant health research: A cross-national framework. *Social Science & Medicine.* doi: 10.1016/j.socscimed.2012.04.040

Alegria, M., Canino, G., Shrout, P. E., Woo, M., Duan, N., Vila, D., . . . Meng, X. (2008). Prevalence of mental illness in immigrant and non-immigrant U.S. Latino groups. *American Journal of Psychiatry, 165*(3), 359-369. doi: 10.1176/appi.ajp.2007.07040704

Alegria, M., Chatterji, P., Wells, K., Cao, Z., Chen, C. N., Takeuchi, D., . . . Meng, X. L. (2008). Disparity in depression treatment among racial and ethnic minority populations in the United States. *Psychiatric Services (Washington, D.C.), 59*(11), 1264-1272. doi: 10.1176/appi.ps.59.11.1264

Alegria, M., Mulvaney-Day, N., Torres, M., Polo, A., Cao, Z., & Canino, G. (2007). Prevalence of psychiatric disorders across Latino subgroups in the United States. *American Journal of Public Health, 97*(1), 68-75. doi: 10.2105/AJPH.2006.087205

Almeida, J., Kawachi, I., Molnar, B., & Subramanian, S. (2009). A multilevel analysis of social ties and social cohesion among Latinos and their neighborhoods: Results from Chicago. *Journal of Urban Health, 86*(5), 745-759. doi: 10.1007/s11524-009-9375-2

Almeida, J., Molnar, B. E., Kawachi, I., & Subramanian, S. V. (2009). Ethnicity and nativity status as determinants of perceived social support: Testing the concept of familism. *Social Science & Medicine, 68*(10), 1852-1858. doi: 10.1016/j.socscimed.2009.02.029

Almeida, J., Subramanian, S. V., Kawachi, I., & Molnar, B. E. (2011). Is blood thicker than water? Social support, depression and the modifying role of ethnicity/nativity status. *Journal of Epidemiology and Community Health, 65*(1), 51-56. doi: 10.1136/jech.2009.092213

Caplan, S. (2007). Latinos, acculturation, and acculturative stress: A dimensional concept analysis. *Policy, Politics, & Nursing Practice, 8*(2), 93-106. doi: 10.1177/1527154407301751

Compton, W. M., Conway, K. P., Stinson, F. S., & Grant, B. F. (2006). Changes in the prevalence of major depression and comorbid substance use disorders in the United States between 1991-1992 and 2001-2002. *The American Journal of Psychiatry, 163*(12), 2141-2147. doi: 10.1176/appi.ajp.163.12.2141

Desmond, M., & Turley, R. N. L. (2009). The role of familism in explaining the Hispanic-white college application gap. *Social Problems, 56*(2), 311-334.

Escarce, J. J., Morales, L. S., & Rumbaut, R. G. (2006). The health status and health behaviors of Hispanics. In M. Tienda, & F. Mitchell (Eds.), *Hispanics and the future of America* (pp. 362-409). Washington, DC: The National Academies Press.

Golding, J. M., & Baezconde-Garbanati, L. A. (1990). Ethnicity, culture, and social resources. *American Journal of Community Psychology, 18*(3), 465-486.

Gonzalez, H. M., Vega, W. A., Williams, D. R., Tarraf, W., West, B. T., & Neighbors, H. W. (2010). Depression care in the United States: Too little for too few. *Archives of General Psychiatry, 67*(1), 37-46. doi: 10.1001/archgenpsychiatry.2009.168

González, H. M., Tarraf, W., Whitfield, K. E., & Vega, W. A. (2010). The epidemiology of major depression and ethnicity in the United States. *Journal of Psychiatric Research, 44*(15), 1043-1051. doi: 10.1016/j.jpsychires.2010.03.017

Grant, B. F., Stinson, F. S., Hasin, D. S., Dawson, D. A., Chou, S., & Anderson, K. (2004). Immigration and lifetime prevalence of DSM-IV psychiatric disorders among Mexican Americans and non-Hispanic whites in the United States: Results from the national epidemiologic survey on alcohol and related conditions. *Archives of General Psychiatry, 61*(12), 1226-1233. doi: 10.1001/archpsyc.61.12.1226

Harley, K., & Eskenazi, B. (2006). Time in the United States, social support and health behaviors during pregnancy among women of Mexican descent. *Social Science & Medicine, 62*(12), 3048-3061. doi: 10.1016/j.socscimed.2005.11.036

Kohout, F. J., Berkman, L. F., Evans, D. A., & Cornoni-Huntley, J. (1993). Two shorter forms of the CES-D depression symptoms index. *Journal of Aging and Health, 5*, 179-193. doi: 10.1177/089826439300500202

Kollannoor-Samuel, G., Wagner, J., Damio, G., Segura-Perez, S., Chhabra, J., Vega-Lopez, S., & Perez-Escamilla, R. (2011). Social support modifies the association between household food insecurity and depression among Latinos with uncontrolled type 2 diabetes. *Journal of Immigrant and Minority Health, 13*(6), 982-989. doi: 10.1007/s10903-011-9499-9

Landale, N. S., & Oropesa, R. S. (2001). Migration, social support and perinatal health: An origin-destination analysis of Puerto Rican women. *Journal of Health and Social Behavior, 42*(2), 166-183.

Morenoff, J. D., House, J. S., Hansen, B. B., Williams, D. R., Kaplan, G. A., & Hunte, H. E. (2007). Understanding social disparities in hypertension prevalence, awareness, treatment, and control: The role of neighborhood context. *Social Science & Medicine, 65*(9), 1853-1866. doi: 10.1016/j.socscimed.2007.05.038

Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology, 24*(1), 1-25.

Rodriguez, N., Mira, C. B., Paez, N. D., & Myers, H. F. (2007). Exploring the complexities of familism and acculturation: Central constructs for people of Mexican origin. *American Journal of Community Psychology, 39*(1-2), 61-77. doi: 10.1007/s10464-007-9090-7

Rumbaut, R. G., & Weeks, J. R. (1996). Unraveling a public health enigma: Why do immigrants experience superior perinatal health outcomes? *Research in the Sociology of Health Care, 13*, 337-391.

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science, 277*(5328), 918-924.

Sarmiento, I. A., & Cardemil, E. V. (2009). Family functioning and depression in low-income Latino couples. *Journal of Marital and Family Therapy, 35*(4), 432-445. doi: 10.1111/j.1752-0606.2009.00139.x

Sher, L. (2004). Daily hassles, cortisol, and the pathogenesis of depression. *Medical Hypotheses, 62*(2), 198-202. doi: 10.1016/S0306-9877(03)00320-7

Sherraden, M. S., & Barrera, R. E. (1996). Maternal support and cultural influences among Mexican immigrant mothers. *Families in Society, 77*(5), 298-313.

Suarez-Morales, L., & Lopez, B. (2009). The impact of acculturative stress and daily hassles on pre-adolescent psychological adjustment: Examining anxiety symptoms. *The Journal of Primary Prevention, 30*(3), 335-349. doi: 10.1007/s10935-009-0175-y

Swenson, C. J., Baxter, J., Shetterly, S. M., Scarbro, S. L., & Hamman, R. F. (2000). Depressive symptoms in Hispanic and non-Hispanic white rural elderly the San Luis Valley Health and Aging Study. *American Journal of Epidemiology, 152*(11), 1048-1055. doi: 10.1093/aje/152.11.1048

Vega, W. A., & Kolody, B. (1985). The meaning of social support and the mediation of stress across cultures. In W. A. Vega, & M. R. Miranda (Eds.), *Stress and Hispanic mental health: Relating research to service delivery.* (pp. 48-75). Rockville, MD: National Institute of Mental Health.

Vega, W. A., Kolody, B., Valle, R., & Weir, J. (1991). Social networks, social support, and their relationship to depression among immigrant Mexican women. *Human Organization, 50*(2), 154-162.

Vega, W. A., & Amaro, H. (1994). Latino outlook: Good health, uncertain prognosis. *Annual Review of Public Health, 15*, 39-67. doi: 10.1146/annurev.pu.15.050194.000351

Viruell-Fuentes, E. A., Ponce, N. A., & Alegria, M. (2012). Neighborhood context and hypertension outcomes among Latinos in Chicago. *Journal of Immigrant and Minority Health / Center for Minority Public Health.* doi: 10.1007/s10903-012-9608-4

Viruell-Fuentes, E. A., & Schulz, A. J. (2009). Toward a dynamic conceptualization of social ties and context: Implications for understanding immigrant and Latino health. *American Journal of Public Health, 99*(12), 2167-2175. doi: 10.2105/AJPH.2008.158956

Zambrana, R. E., Scrimshaw, S. C., Collins, N., & Dunkel-Schetter, C. (1997). Prenatal health behaviors and psychosocial risk factors in pregnant women of Mexican origin: The role of acculturation. *American Journal of Public Health, 87*(6), 1022-1026.

Zhou, M. (1997). Growing up American: The challenge confronting immigrant children and children of immigrants. *Annual Review of Sociology, 23*(1), 63-95.

Table 1. Weighted Summary Statistics by Nativity Status, CCAHS 2002

	All Latinos		Foreign-Born Latinos		U.S.-Born Latinos		
	Mean/ Proportion	SE	Mean/ Proportion	SE	Mean/ Proportion	SE	*p*
Depressive Symptoms (mean)	1.78	0.03	1.72	0.03	1.88	0.04	<.01
Positive Social Support (mean)							
Marital	4.17	0.05	4.16	0.06	4.22	0.09	.57
Friends & Relatives	4.07	0.04	3.97	0.06	4.26	0.06	<.01
Children	4.63	0.03	4.61	0.04	4.67	0.06	.46
Negative Hassles (mean)							
Marital	2.41	0.06	2.30	0.06	2.70	0.13	.01
Friends & Relatives	2.24	0.05	2.04	0.05	2.60	0.08	<.01
Children	2.39	0.06	2.29	0.07	2.61	0.11	.01
Latino Subgroup							
Mexican	.67	.03	.70	.03	.61	.04	.05
Puerto Rican	.16	.02	.11	.02	.23	.03	<.01
Other Latino	.17	.02	.18	.02	.16	.03	.51
Family Characteristics							
Currently married	.54	.03	.65	.03	.35	.04	<.01
Has children	.75	.02	.83	.02	.62	.03	<.01
Sex							
Female	.51	.02	.47	.04	.53	.04	.53
Male	.49	.02	.50	.03	.47	.04	
Age (mean)	38.15	0.71	41.01	0.85	33.13	1.16	<.01
Age groups							
18-29 years	.34	.02	.23	.02	.53	.04	<.01
30-39	.28	.02	.32	.03	.22	.03	.01
40-49	.16	.01	.19	.02	.11	.02	.01
50-59	.10	.01	.13	.02	.06	.01	<.01
60-69	.06	.01	.08	.02	.04	.02	.11
70 and above	.05	.01	.05	.01	.04	.02	.82
Education (in years)							
Less than 12	.45	.02	.56	.03	.25	.03	<.01
12	.25	.02	.20	.02	.32	.03	<.01
13 to 15	.20	.02	.14	.02	.31	.03	<.01
16 or more	.10	.01	.10	.02	.11	.02	.65
Income							
< $10,000	.09	.01	.08	.02	.11	.02	.17
$10,000-29,999	.34	.02	.36	.03	.30	.03	.23
$30,000-49,999	.21	.02	.20	.02	.23	.03	.48
$50,000 or more	.18	.02	.16	.02	.23	.03	.04
Missing	.18	.02	.21	.02	.13	.02	.01
Chronic health conditions (mean)	.84	.06	.88	.08	.78	.09	.35
Unweighted *n*	*804*		*513*		*291*		

Table 2. Regression Results for Hierarchical Models Addressing the Effects of Nativity Status (U.S. Born Versus Foreign-Born) on each Social Tie Characteristics, CCAHS 2002

		Model 1[a]				Model 2[b]				Model 3[c]			
	n	B	SE	CI	*p*	B	SE	CI	*p*	B	SE	CI	*p*
Positive Social Support													
Marital	474	0.05	0.12	[-0.17,0.28]	.65	0.01	0.12	[-0.23, 0.25]	.92	0.02	0.12	[-0.22, 0.25]	.88
Friends & Relatives	804	0.25	0.08	[0.10, 0.40]	<.01	0.11	0.08	[-0.05, 0.27]	.17	0.11	0.08	[-0.05, 0.27]	.17
Children	614	0.02	0.08	[-0.13, 0.17]	.75	0.03	0.08	[-0.12, 0.18]	.69	0.02	0.08	[-0.13, 0.17]	.76
Negative Hassles													
Marital	474	0.36	0.14	[0.08, 0.63]	.01	0.39	0.14	[0.11, 0.66]	.01	0.36	0.14	[0.08, 0.64]	.01
Friends & Relatives	804	0.46	0.09	[0.28, 0.63]	<.01	0.40	0.10	[0.20, 0.59]	<.01	0.37	0.10	[0.18, 0.57]	<.01
Children	614	0.27	0.13	[0.02, 0.52]	.03	0.28	0.14	[0.01, 0.55]	.04	0.26	0.14	[-0.01, 0.53]	.06

Note. CI = confidence interval. Foreign-born is the reference category.

[a] Adjusted for age and sex; [b] adjusted for age, sex, Latino origin, education, income, marital status, and whether participants had children; [c] adjusted for age, sex, Latino origin, education, income, marital status, whether participants had children and number of chronic health conditions.

Table 3. Regression Results for Multivariate Models Assessing the Effects of Social Tie Characteristics and Nativity on Depressive Symptoms, CCAHS 2002

	Marital (*n*=474)			Friends & relatives (*n*=804)			Children (*n*=614)		
	B	SE	p	B	SE	p	B	SE	p
Positive social tie characteristic	-0.24	0.03	<.01	-0.16	0.03	<.01	-0.13	0.03	<.01
US-born	0.07	0.07	.29	0.13	0.05	.01	0.14	0.06	.03
Male	-0.18	0.06	<.01	-0.26	0.05	<.01	-0.22	0.06	<.01
Age	-0.01	0.00	.01	0.00	0.00	.04	0.00	0.00	.08
Mexican Origin	-0.27	0.07	<.01	-0.20	0.05	<.01	-0.16	0.06	.01
Family Characteristics									
Currently married	-	-	-	-0.12	0.06	.05	-0.10	0.07	.18
Has children	0.03	0.09	.71	0.00	0.06	.97	-	-	-
Education (Ref: 16 years or more)									
Less than 12 years	0.17	0.09	.08	0.07	0.08	.38	0.11	0.10	.25
12 years	0.01	0.09	.87	0.03	0.08	.73	0.02	0.10	.84
13 to 15 years	0.03	0.10	.74	0.07	0.08	.40	0.07	0.11	.54
Income (Ref: $50,000 or more)									
< $10,000	0.08	0.13	.52	-0.02	0.10	.81	-0.04	0.13	.75
$10,000-29,999	0.03	0.07	.73	0.05	0.07	.49	0.06	0.09	.46
$30,000-49,999	-0.08	0.08	.29	-0.03	0.07	.69	-0.08	0.09	.37
Missing	-0.11	0.08	.15	0.00	0.08	.98	-0.05	0.09	.55
Chronic health conditions	0.09	0.03	<.01	0.08	0.02	<.01	0.08	0.02	<.01
Constant	3.07	0.19	<.01	2.73	0.17	<.01	2.62	0.22	<.01
Negative hassles characteristic	0.15	0.03	<.01	0.16	0.02	<.01	0.03	0.02	.20
US-born	0.01	0.07	.84	0.06	0.05	.26	0.13	0.06	.04
Male	-0.26	0.06	<.01	-0.25	0.05	<.01	-0.21	0.06	<.01
Age (v2000)	0.00	0.00	.13	0.00	0.00	.54	0.00	0.00	.23
Mexican Origin	-0.25	0.07	<.01	-0.19	0.05	<.01	-0.16	0.06	.01
Family Characteristics									
Currently married	-	-	-	-0.11	0.06	.07	-0.12	0.08	.12
Has children	0.05	0.10	.57	0.05	0.06	.42	-	-	-
Education (Ref: 16 years or more)									
Less than 12 years	0.10	0.09	.28	0.16	0.07	.02	0.14	0.10	.16
12 years	-0.05	0.10	.61	0.06	0.07	.41	0.04	0.10	.68
13 to 15 years	-0.04	0.11	.72	0.06	0.08	.43	0.08	0.11	.50
Income (Ref: $50,000 or more)									
< $10,000	-0.01	0.16	.95	-0.07	0.09	.44	-0.06	0.13	.63
$10,000-29,999	0.05	0.08	.49	0.04	0.07	.57	0.07	0.09	.43
$30,000-49,999	-0.09	0.08	.30	-0.06	0.07	.39	-0.09	0.09	.33
Missing	-0.14	0.09	.12	-0.05	0.08	.53	-0.06	0.09	.50
Chronic health conditions	0.07	0.03	.01	0.07	0.02	<.01	0.07	0.02	<.01
Constant	1.69	0.16	<.01	1.57	0.12	<.01	1.90	0.16	<.01