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Is blood thicker than water? Social support, depression and the modifying role of ethnicity/nativity status

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ABSTRACT

Background Social support may be particularly important in countering depression among systematically disadvantaged groups. Latino immigrants are an example of a disadvantaged population that has better than expected mental health outcomes. One explanation put forth for this pattern is strong social support from kin networks. Studies on the effect of social support on mental health often assess the quantity of social ties rather than the quality of the support they provide. In addition, such studies rarely specify the source of support and how support from family versus friends may differentially impact mental health.

Methods In this study, data from the Project on Human Development in Chicago Neighbourhoods were used to disaggregate the effects of source-specific emotional support on risk of depression. Second, the relationship between ethnicity/nativity status and risk of depression was examined. Finally, whether the relationship between family-based and friend-based social support and depression differed across ethnic/nativity status was explored.

Results Support from both family and friends had protective effects on risk of depression; however, when mutually adjusted, only kin support remained statistically significant. At higher levels of family support, foreign-born Mexicans and African Americans had decreased risk of depression than at low levels of family support.

Conclusion This study provides evidence that family support may be more important than non-kin support for mental health. Findings also suggest that the effects of family support on risk of depression vary by ethnicity and nativity status. Preservation of naturally occurring support resources among some groups may be a way to maintain mental health.

The effects of social support on health are well established, especially the association between lack of support and poor mental health.[1–7] Researchers have classified social support into four subtypes, including emotional, instrumental, appraisal and informational support.[8 9] Emotional support was defined by Cobb, in 1976, as information leading a person to believe they are loved, cared for, esteemed and valued, and is perhaps the most important type of support for mental health.[8–11] Intimate ties such as those with a spouse, children and significant others, which are considered powerful indicators of (emotional) support, have a particularly protective effect on risk of depression.[1–3 5 10 12]

The benefits of social support are not evenly distributed in the population. Rather, they vary systematically with gender, socioeconomic status (SES), marital status and life stage.[1 7 13] For example, support within the context of marriage is more beneficial for men compared to women.[11 13] In addition, Brown's 1975 study found that lack of social support among working class women made them especially vulnerable to depression.[14] Variation in the availability of support may therefore be influenced by membership in socially defined groups. Depending on the extent to which one's social circumstances are influenced by their gender, SES, marital status and life stage, it is possible that observed associations between group membership and depression result from associated differences in social support.[7 11 13]

Social support is also thought to differ across racial/ethnic groups.[15–19] Hence, it is possible that the varying levels of social support by race/ethnicity could in part explain some of the differences in rates of depression across racial/ethnic groups.[11 15] Among disadvantaged groups such as racial/ethnic minority and immigrants, social support may be particularly important in countering depression. If these groups have increased stressors associated with low social status, it is somewhat surprising that they do not routinely experience higher rates of depression than the more advantaged.[20–23] This phenomenon has been observed in certain groups of Latino immigrants.[16 17 24] One explanation for this is strong kin support networks, which serve to cushion the detrimental impact of poverty and discrimination.[15 25 26] Although the protective role of family support for disadvantaged groups has been explored, the effect of support from non-kin is less clear.[7 13 16–18]

The present study had three aims. First, we sought to test the effect of social support on depression and to disaggregate the effects of social support from family versus from friends, individually and mutually adjusted. The second aim was to test the relationship between ethnic/nativity status and risk of depression. Our third objective was to examine whether the effects of social support on depression varied by ethnicity/nativity status. Our hypothesis was that familial social support would be most protective of depression for the foreign-born and ethnic minority, while support from friends would be most beneficial for non-Latino Caucasians and US-born Latinos.

METHODS

Data for this study came from the Project on Human Development in Chicago Neighbourhoods

(PHDCN), a prospective study of children and their families residing in Chicago neighbourhoods. Sampling methodology for this study is described elsewhere. Briefly, it involved three waves of data collection between 1994 and 2002 from selected children and their primary care givers.[27 28] One primary care giver for children in all age cohorts (ages 0, 3, 6, 9, 12 and 15 years), except the 18-year-old cohort, was recruited for participation. This study focused on primary care giver's reports of their own depression and dysthymia. There were 4112 primary care givers who reported extensive information on themselves at baseline data collection. We deleted 966 of those observations because they were duplicates provided by care givers who had multiple children in the study. This left 3146 unique reports by primary care givers. We excluded 187 of these because the primary care giver who was interviewed at wave 2 had changed from the baseline interview, leaving 2911 participants. We further excluded 48 observations that were missing complete information on the outcome of interest, resulting in 2863 respondents. Finally, because the per cent missing for each covariate was <1%, we deleted these observations. This resulted in a final sample size of 2673, which formed the basis of our analysis.

Outcome variable

The main outcome was a diagnosis of major depression or dysthymia among the primary care givers. Depression and dysthymia were measured using the Composite International Diagnostic Interview Short Form scales for a major depressive episode during the previous 12 months, and depressive symptoms during the past 2 years, respectively. The Composite International Diagnostic Interview Short Form was administered during wave 2 (1997–1999) of the PHDCN. Depression/dysthymia was coded "1" if the participant met the diagnostic criteria for either major depressive disorder or dysthymia, or both, and "0" if the participant did not meet the criteria for either of these diagnoses. We refer to the combined outcome variable as "depression" in the remainder of the article.

Predictor variables

The main predictor, perceived emotional social support, was measured with the Provision of Social Relation Scale (PSR), which assesses support from family and friends separately. This 15-item instrument was adapted from an 18-item scale designed by Turner *et al*, and includes items such as "I know my family will always stand by me" and "I have at least one friend that I could tell anything to".[29] The number of response options was also revised for the PHDCN from the original 5-point scale to a 3-point scale. Participants were asked to rate how closely each of the 15-items described their relationships with their family and friends. This scale yields a continuous mean score of the respondent's perception of social support provided by these two sources, with higher scores indicative of greater perceived support. The overall correlation between support from family and support from friends was 0.18. We centered each of the social support measures about their means for ease of interpretability. Previous tests of the internal consistency reliability of the PSR (family and friend support factors) indicate satisfactory reliability, with α coefficients ranging from 0.75 to 0.87.[29] Our own test of internal consistency reliability also yielded satisfactory reliability, with an α of 0.62 for family support and 0.74 for friend support.

The other predictor of interest was ethnicity/nativity status, which was self-reported by all participants. Although the Federal Office of Management and Budget has guidelines on specifying racial and ethnic categories, in this study we were particularly interested in disaggregating Latinos because levels of support and rates of depression likely vary by subethnicity and generation status.[30 31] Therefore, we coded the race/ethnicity and nativity variables as non-Latino Caucasian; African American; Asian; foreign-born Mexican; foreign-born non-Mexican Latino, and US-born Latino (Mexican and non-Mexican). A limitation of this categorisation is that we will not be able to make direct comparisons to other studies that followed Office of Management and Budget guidelines on racial/ethnic categories. The data contained some foreign-born non-Latino Caucasian, African American and Asian participants; however, the small numbers prevented us from making these separate categories. In addition, the data precluded us from separating US-born Latinos by country of origin, but the two main groups were likely US-born Mexicans and mainland-born Puerto Ricans. Approximately 60% of the foreign-born non-Mexican Latinos were island-born Puerto Ricans. The other 40% of foreign-born non-Mexican Latinos were from various South and Central American countries, and include for example, Guatemalans, Salvadorans and Colombians. The PSR scale and ethnicity/nativity information were measured at wave 1 of the PHDCN (1994–1995).

Covariates

We included age (centered about its mean), gender and marital status as demographic covariates in the analysis. We also adjusted for education level, past year total household income and employment status as markers of SES.

Statistical analyses

We examined prevalence estimates for depression and the associated 95% CIs. In addition, we constructed bivariate and multivariable logistic regression models for the outcome of depression to assess the crude and adjusted association with the predictors and covariates. All descriptive analyses were conducted using SAS 9.1. Multivariable analyses were conducted in MLwiN software version 2.0, which uses marginal quasi-likelihood approximation with first-order Taylor linearisation procedure and accounts for clustering of individuals within neighbourhoods.[32] Finally, we conducted a stratified analysis to test whether the relationship between social support and depression varied by ethnicity/nativity status.

Approval to conduct this study was provided by the Human Subjects Committee of the Harvard School of Public Health.

RESULTS

Table 1 describes the sample's sociodemographic and economic characteristics, the mean perceived social support from family and friends, as well as the crude ORs for depression by each risk factor. The overall prevalence of depression in the sample was 19.4% (95% CI 17.9 to 20.9).

Effects of familial social support and ethnicity/nativity status on depression

Unadjusted for any other variables, family-based support has a protective effect on risk of depression; the reduction in risk associated with a one-unit increase in familial social support was 56%. We also assessed the crude relationship between ethnicity/nativity status and risk of depression. Results of this model suggest that all ethnic minority groups except Asians had a significantly higher odds of depression compared to non-Latino Caucasians (referent group). Foreign-born non-Mexican Latinos had the greatest risk of depression (OR 2.12, 95% CI 1.38 to 3.25), followed by African Americans (OR 1.89, 95% CI 1.38 to 2.59), US-born Latinos (OR 1.71, 95% CI 1.16 to 2.53) and foreign-born Mexicans (OR 1.53, 95% CI 1.10 to 2.12).

Table 1 Demographic characteristics and risk of depression among primary care givers by sociodemographic and economic factors (N=2673)

Indicator	n (%)	n Cases	Unadjusted OR (95% CI)
Gender			
Female (reference)	2520 (94)	501	1.0
Male	153 (6)	18	0.53 (0.32 to 0.88)
Age	2673 (100)		0.99 (0.98 to 1.01)
Marital status			
Married	1631 (61)	259	1.0
Single	674 (25)	176	1.87 (1.50 to 2.32)
Divorced	319 (12)	78	1.71 (1.28 to 2.28)
Widowed	49 (2)	6	0.74 (0.31 to 1.75)
Ethnicity/nativity status			
Non-Latino Caucasian	455 (17)	60	1.0
Non-Latino African American	862 (32)	192	1.88 (1.36 to 2.58)
Non-Latino Asian/other	98 (4)	14	1.09 (0.58 to 2.05)
Mexican foreign-born	760 (29)	143	1.52 (1.1 to 2.11)
Non-Mexican Latino foreign-born	193 (7)	47	2.12 (1.38 to 3.24)
Latino US-born	305 (11)	63	1.71 (1.16 to 2.52)
Household income (past year)			
<US$10 000	638 (24)	163	1.0
US$10 000–20 000	535 (20)	115	0.78 (0.61 to 1.04)
US$20 000–40 000	814 (30)	142	0.61 (0.47 to 0.79)
> US$40 000	686 (26)	99	0.49 (0.37 to 0.65)
Education level			
<High school	1111 (42)	260	1.0
High school diploma	347 (13)	56	0.63 (0.46 to 0.86)
Some college	901 (34)	160	0.71 (0.56 to 0.88)
College	314 (12)	43	0.52 (0.36 to 0.74)
Employment status			
Unemployed >5 years	596 (22)	116	1.0
Unemployed <5 years	575 (22)	129	1.19 (0.90 to 1.58)
Currently employed	1502 (56)	274	0.92 (0.72 to 1.17)
Social support			
Friend support	2673 (100)	N/A	0.43 (0.32 to 0.58)
Family support	2673 (100)	N/A	0.59 (0.46 to 0.75)

Next, we examined the relationship between ethnicity/nativity status and depression when the variance due to kin-based social support was removed (social support included in the equation). In the mutually adjusted model (social support and ethnicity/nativity), the risk of depression for each Latino subgroup increased. Among foreign-born Mexicans, the risk of depression increased from 1.53 to 1.68; among foreign-born non-Mexican Latinos, the risk increased from 2.12 to 2.23; and among US-born Latinos, the OR increased from 1.71 to 1.77. After controlling for demographic and economic variables, familial support remained significantly protective of depression; the reduction in risk associated with a one-unit increase in support from family was 53%. Furthermore, with the inclusion of these covariates, only foreign-born non-Mexican Latinos had a risk of depression that was significantly different from non-Latino Caucasians (OR 1.92, 95% CI 1.22 to 3.02).

Effects of friendship social support and ethnicity/nativity status on depression

Similar to kin support, social support from friends was also significantly protective of depression in the unadjusted model, though the magnitude of effect was smaller. The reduction in risk of depression associated with a one-unit increase in friendship support was 40%. We also assessed the mutually adjusted effects of social support and ethnicity/nativity status on risk of depression. Controlling for social support decreased the odds of depression for certain ethnic/nativity status groups, such that only foreign-born non-Mexican Latinos (OR 2.23, 95% CI 1.45 to 3.42) and US-born Latinos (OR 1.77, 95% CI 1.20 to 2.62) had significantly higher risk of depression compared to non-Latino Caucasians. With the inclusion of demographic and socioeconomic variables, the effect of friendship support was protective of depression (OR 0.66, 95% CI 0.50 to 0.86). Finally, the addition of these variables rendered any differences in risk of depression between African Americans, foreign-born Mexicans, US-born Latinos and non-Latino Caucasians statistically insignificant.

Mutually adjusted effects of family and friendship support and ethnicity/nativity status on depression

Support from family and friends remained statistically significant when included in the model together (table 2). However, family support had a stronger protective effect on depression than did friendship support (OR 0.48, 95% CI 0.35 to 0.65 and OR 0.67, 95% CI 0.52 to 0.87, respectively). Model 2 shows the mutually adjusted effects of social support from both sources on depression, controlling for ethnicity/nativity status. Both forms of support remained inversely related to depression, although family support had a stronger effect. Additionally, model 2 shows that adjusted for both kinds of support, each ethnic minority group except Asians had a significantly increased risk of depression relative to non-Latino Caucasians. When adjusted for sociodemographic and economic factors, the protective effect of friendship support was marginally significant (OR 0.76, 95% CI 0.57 to 1.01), while each one-unit increase in family support was associated with half the risk of depression (OR 0.50, 95% CI 0.37 to 0.69). Moreover, inclusion of gender, age, marital status and SES eliminated differences in the risk of depression by ethnic/nativity status, with the exception of foreign-born non-Mexican Latinos, who had a significantly increased risk compared to non-Latino Caucasians (OR 1.80, 95% CI 1.14 to 2.85).

Differential effects of support on risk of depression by ethnicity/nativity status

We tested whether family and friend support had differential effects on the risk of depression across groups defined by ethnicity/nativity. However, the small sample size of Asians prevented us from assessing the relationship between support and depression in this ethnic group. All models were adjusted for age, gender, marital status and SES. Results of the stratified analysis reveal that increased family support was most protective of depression among foreign-born Mexicans and non-Latino African Americans (OR 0.30, 95% CI 0.17 to 0.53, and OR 0.38, 95% CI 0.24 to 0.61, respectively). For foreign-born non-Mexican Latinos and non-Latino Caucasians, the relationship was in this direction but did not reach statistical significance. Among US-born Latinos, increased support was associated with a higher risk of depression, but this result also did not reach statistical significance (table 3). Results of the stratified analysis are displayed graphically as predicted probabilities in figure 1, with family support presented in its original form as a continuous variable on the x axis. Perceived support from friends had a significantly protective effect on depression for non-Latino Caucasians and non-Latino African Americans (OR 0.40, 95% CI 0.17 to 0.98, and OR 0.54, 95% CI 0.33 to 0.90, respectively), but not for other ethnic/nativity status groups (table 3).

DISCUSSION

This study found a robust protective effect of family support on risk of depression. In contrast, friendship support was only marginally protective in the presence of family support. These

Table 2 Logistic regression: ORs of depression with family and friend support

	Model 1		Model 2		Model 3	
Parameter	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
Family support	0.48	0.35 to 0.65	0.47	0.35 to 0.65	0.50	0.37 to 0.69
Friend support	0.67	0.52 to 0.87	0.71	0.54 to 0.93	0.76	0.57 to 1.01
Ethnicity/nativity						
Caucasian			1.00	1.00		
African American			1.75	1.28 to 2.43	1.34	0.94 to 1.90
Asian			1.03	0.54 to 1.94	1.00	0.52 to 1.91
Foreign-born Mexican		1.48	1.05 to 2.09	1.28	0.86 to 1.89	
Foreign-born Latino			2.01	1.30 to 3.11	1.80	1.14 to 2.85
US-born Latino			1.66	1.12 to 2.46	1.36	0.90 to 2.07
Male					0.59	0.35 to 1.00
Age					1.01	1.00 to 1.02
Marital status						
Married					1.00	
Single					1.59	1.21 to 2.09
Divorced					1.51	1.09 to 2.09
Widowed					0.62	0.25 to 1.53
Income						
<US$10 000					1.00	
US$10 000–20 000					0.94	0.70 to 1.26
US$20 000–40 000					0.82	0.61 to 1.10
>US$40 000					0.84	0.58 to 1.20
Education						
<High school					1.00	
High school					0.63	0.45 to 0.88
Some college					0.69	0.53 to 0.90
College					0.73	0.47 to 1.11
Employment						
Currently employed					1.00	
Unemployed <5 years				1.06	0.82 to 1.37	
Unemployed >5 years				0.83	0.63 to 1.10	

findings lead us to question why support from different sources has disparate effects on depression. One possibility is that family provides some sort of unconditional sense of esteem that support from non-kin does not, epitomising the old adage that "blood is thicker than water". This may be especially true for foreign-born Mexicans who believe that family should be the (first) resource for dealing with problems, more than other groups.[33] Additionally, previous work on Latino families suggests that kinship ties are not just a convenient form of aid, but an enjoyable and expected set of practices and attitudes.[33–35] Our finding that family support mitigates the risk of depression among foreign-born Mexicans bolsters past research that concluded that within this immigrant group, kin networks are more likely to meet emotional needs than instrumental ones.[33–35] While non-Latinos, including non-Latino Caucasians, also value and rely on family members for support, the fewer number of kin ties, and often long-distance nature of these relationships, may result in less dependence on family members in dealing with life's stressors.[34 35] This may be an artefact of the strong emphasis that mainstream American society places on adolescent autonomy, which leads non-Latino Caucasian youth to spend most of their time with their peers rather than their family.[36]

Our study adds to the existing literature on ethnic/nativity status differences in the risk of depression.[20 22 37] We found that after accounting for SES, members of ethnic minority groups did not have increased risk of depression compared to non-Latino Caucasians, suggesting that socioeconomic disadvantage may act as a mediator between membership in a disadvantaged group and depression.[15] While these findings corroborate nationally representative studies of psychiatric disorders, which found no differences in rates of depression across ethnic groups, we found one exception to this pattern.[22 37] Foreign-born non-Mexican Latinos, the majority of whom are island-born Puerto Ricans, had significantly increased risk of depression. This result highlights the fact that foreign nativity is not ubiquitously protective of health and may be most applicable to Mexican Americans.[38 39] This finding may be a result of the fact that island-born Puerto Ricans, because of their citizenship status and relatively cheap travel expenses, come to the USA for healthcare services. As such, it is possible that the foreign-born non-Mexican Latinos in our sample represent a "sick minority".

Table 3 Odds of depression by family and friend-based social support stratified by ethnic/nativity status

	Foreign-born Mexican*		Foreign-born Latino*		US-born Latino*		African American*		Caucasian*	
	OR (95% CI)		**OR (95% CI)**		**OR (95% CI)**		**OR (95% CI)**		**OR (95% CI)**	
Family support	0.30	0.17 to 0.53	0.75	0.26 to 2.15	1.67	0.56 to 5.01	0.38	0.24 to 0.61	0.46	0.19 to 1.14
Friend support	0.84	0.54 to 1.29	0.93	0.39 to 2.20	0.54	0.25 to 1.17	0.54	0.33 to 0.90	0.40	0.17 to 0.98

*Models are adjusted for sex, age, marital status, education, income and employment.

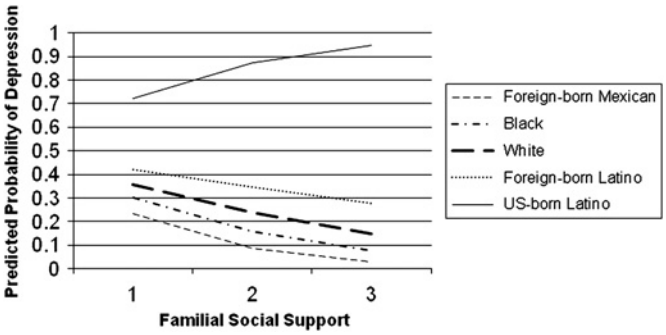

Figure 1 Interaction of familial social support and ethnicity/nativity status on predicted probability of depression.

We examined the effects of ethnic/nativity status on depression before and after controlling for social support, and found that accounting for familial support suppressed group differences in risk of depression. Among foreign-born Mexicans, the absolute increase in risk was 10%, and for US-born Latinos the increase was 6%. These findings point to the idea that social support mitigates the relationship between Latino ethnicity and foreign-born status and depression, especially for Mexican immigrants. Given the large and growing numbers of Mexican immigrants in the USA, a small effect like this can have a large impact in a sizeable population. Although the current study did not directly address this, it is worth considering if Latinos, specifically foreign-born Mexicans, did not have such high levels of familial support, they might report worse mental health outcomes.

Our exploration of whether the effects of social support on depression vary by ethnic/nativity status revealed that for non-Latino Caucasians and African Americans, having high friendship support was critical to reducing the risk of depression. We did not observe this pattern among the other ethnicity/nativity status groups. This finding is similar to Jung's study, which found that perceived support from friends, but not family, was associated with lower depression among Caucasians; however, it differs from Vega's work, which found that support from friends, more than from family, was related to better mental health among Latinos.[18 40] Results of our stratified analysis to assess the relationship between familial social support and depression by ethnic/nativity status group paint a different picture. The reduction in risk of depression associated with increased familial support was significant only for foreign-born Mexicans and African Americans, which corroborates other researchers' findings that familial but not friend support was associated with psychological well-being among African Americans.[18 41] Mexican immigrants and African Americans may rely more on family support due to the socioeconomic barriers and mistrust of medical care providers that inhibit their access to more formal treatment.[18 42 43] However, it does not explain why kin support did not mitigate the disadvantage that foreign-born non-Mexican Latinos and US-born Latinos face.

Limitations

The present study has several limitations that should be noted. Primary care givers were included in PHDCN mainly as a means of procuring information on their young children who were the focus of the study. The sampling was purposefully done with a random sample of children within specific age cohorts. Participants for the present study are not a random sample of adults, and as such the generalisability of our findings is limited. Moreover, the majority of the participants were female care givers of young children, which further limits the generalisability of our findings to this specific group. In addition, because participants in our study were selected for the original PHDCN study on the basis of being a care giver, perception of kin-based support may be higher in our sample than in one in which participation was not based on family membership. This may bias our findings regarding the association between family support and depression. Another limitation is the fact that although the predictors were measured several years before the outcome was assessed, we have to consider the possibility that perception of social support may be concomitant to, or a consequence of, depression, rather than an antecedent.[1] Finally, because the PSR scale does not specify a time frame for perception of social support, it is possible that evaluations of support from family or friends reflect experiences of social support during earlier periods of the care giver's lives rather than more recent receipt of support. We cannot rule out the possibility that the PSR captures early life perceptions of being supported, which may also influence later risk of depression.

Strengths

Other authors have demonstrated that the effects of social support on mental health vary by gender, life stage, marital status and SES; however, to our knowledge, this is the first study to investigate the differential effects of support on depression by ethnicity/nativity status.[1 3 7] Another strength of this study is that the scale we used to assess social support allowed us to evaluate the differential impact of support from family and friends on depression.[29] Further, this study adds to the work of previous studies that used crudely defined measures of social support and ties, such as marital status, to explicitly test the effects of perceived emotional support from family and friends on depression.[2] Finally, our study goes beyond the basic assessment of how number of social ties is associated with mental health, to examine how qualitative aspects of perceived support are related to depression.

In conclusion, this study begins to explore the differential effects of source-specific social support and ethnic/nativity

What is already known on this subject

- There has been substantial research showing that social support has a protective effect on mental health.
- The benefits of social support for mental health vary systematically by gender, age, marital and socioeconomic status.

What this study adds

- Social support from different sources has distinct effects on the risk of depression by ethnic/nativity status.
- Kin-based support may be more important in countering depression among certain ethnic/nativity status groups, while support from friends reduces the risk of depression among other social groups.
- In the absence of social support from kin networks, some Latino subgroups may be at increased risk for depression.

status on depression. Given the continued influx of immigrants from Latin America and the growing presence of second-generation Latinos in the USA, their mental health must not be overlooked.[42 44–46] Compared to other racial/ethnic groups, Latinos have the lowest levels of health insurance, and often face social and structural barriers to procuring mental health services. Latinos less likely to receive healthcare services, and they are even less likely to obtain quality care, in particular for disorders such as depression.[44] Very few Latinos have access to health insurance, and among those that do, less than 10% contact a mental healthcare provider.[44 47] While increasing Latinos' access to high-quality mental health services should be a priority, preserving their naturally occurring support resources as a way to maintain mental well-being also warrants consideration.

Competing interests None.

Ethics approval This study was conducted with the approval of the Harvard School of Public Health Institutional Review Board.

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