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"Abrazame Que Ayuda" (Hug Me, It Helps): Social Support and the Effect of Perceived Discrimination on Depression among USand Foreign-Born Latinxs in the USA

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Abstract

Background Higher level of social support is known to mitigate the effect of ethnic discrimination on depression symptoms, yet little is known as to which type of social support may be most effective for ameliorating the negative health effects of perceived ethnic discrimination among Latinxs varying in nativity status. The purpose of this study is to examine the association between perceived ethnic discrimination and depression among US- and foreign-born Latinxs, and to identify specific types of social support that may buffer the aforementioned association in this population.

Methods Data from 1340 Latinx respondents (70% US-born; 30% foreign-born) collected from the Texas City Stress and Health Study (TCSHS) was used in this study. The primary outcome was depression, and it was measured using the Center for Epidemiologic Studies Depression Scale Revised (CESD-R).

Results Findings showed that higher perceived ethnic discrimination were associated with higher depressive symptoms for both foreign-born and US-born Latinxs, with higher levels of social support, specifically positive interaction support, being associated with lower depressive symptoms for both groups. Importantly, results also showed that regardless of nativity status, higher levels of affectionate support mitigated the adverse association between ethnic discrimination and depressive symptoms.

Conclusion This study provides evidence that higher levels of positive interactions and affective support may be significant factors in helping Latinxs cope with ethnic discrimination. This information is essential to inform the development of interventions aimed at building resilience in the face of discrimination among the largest and fastest growing ethnic group in the USA

Keywords Discrimination · Depression · Social support · Latinx · Hispanic

Summary Box

What is already known on this subject?

Higher level of social support is known to mitigate the effect of ethnic discrimination on depression, yet little is known as to which type of social support may be most effective for ameliorating the negative health effects of perceived ethnic discrimination among Latinxs varying in nativity status.

What does this study add?

This study identified affective support as a valuable coping strategy for Latinxs that can help mitigate the adverse association between perceived ethnic discrimination and depression. This information is essential to inform interventions aimed at building resilience in the face of discrimination.

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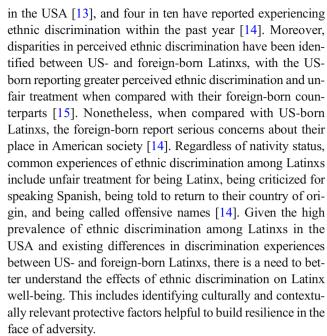


Introduction

The effect of ethnic discrimination on health is an important topic given its detrimental effects on health. Perceived ethnic discrimination is defined as the unfair treatment that individuals receive or perceive to receive due to their race or ethnicity [1]. Overall, a growing body of evidence shows that perceived ethnic discrimination is adversely associated with mental and physical health [2]. Physical health outcomes including hypertension, breast cancer, and obesity have been linked to perceived ethnic discrimination [2]. Nonetheless, when compared with physical health outcomes, the negative effects of ethnic discrimination on mental health are stronger, with depression being a primary concern due to its association with suicidal ideation [3–7]. A recent study with a large Latinxs sample showed that depression mediated the association between ethnic discrimination and suicidal ideation [8]. The link between ethnic discrimination and depression is perpetuated given that discrimination is a social stressor that is often unpredictable and uncontrollable, which makes it even more disruptive to mental health [2, 9].

Social support, defined as an individual's perception of having one or more people available to assist when needed, buffers the negative effect of perceived ethnic discrimination on a wide range of physical and mental health outcomes [2]. Social support is a key component of the stress-buffering model, which proposes that higher levels of social support help individuals cope with stressors more effectively, thus mitigating the effect of stress on health [10]. Quantitatively, the stress-buffering model can be examined by testing the interaction between social support and stress [10]. Indeed, greater social support mitigates the effect of ethnic discrimination on mental health distress [2, 11]. Yet, one aspect of social support that has not been appropriately considered is how different types of social support may buffer the effects of ethnic discrimination on mental health (e.g., depression), and more importantly, how the aforementioned association may vary across individuals. For instance, types of social support are classified into distinct categories including emotional/informational, tangible, positive social interaction, and affectionate support [12]; regardless of what little is known as to which of these types of social support could be most effective for ameliorating the negative health effects of ethnic discrimination. Additional research is needed to identify the specific types of social support that could more effectively buffer the association between ethnic discrimination and depression among vulnerable individuals, which is essential to inform interventions and community-based efforts.

In the United States of America (USA), there is a dramatic increase in perceived ethnic discrimination among immigrant populations as a result of conflicting political views and growing animosity among people of varied backgrounds. Among Latinxs, the largest and fastest growing ethnic minority group



The purpose of this study is to: (a) examine the association between perceived ethnic discrimination and depression among Latinxs, including assessing differences in the aforementioned association between US- and foreign-born Latinxs; and (b) identify specific types of social support that may buffer the negative effects of perceived ethnic discrimination on depression among Latinxs varying in nativity status. To our knowledge, no study to date has explored the aforementioned associations among US- and foreign-born Latinxs.

Methods

Study Sample

This study used data from the Texas City Stress and Health Study (TCSHS), a social epidemiological study undertaken in the Southern USA to investigate how contextual, environmental, psychological, and biological risk factors are associated with different health outcomes among minority populations, especially Latinxs of Mexican origin. Multistage sampling methods were used to select participants. Forty-eight contiguous neighborhoods were included in the study, and an exhaustive list of housing units in these neighborhoods was created. From this listing, housing units were classified as Latinx or other, with Latinx households defined as having at least one member in the household being Latinx. Details on data collection have been described in prior work [16]. The interview response rate was 80% and participants in the final sample included 2706 diverse adults ages 25 and older. Only Latinx participants were included in this study (N = 1438). Due to missing data, 98 participants were excluded; thus, the final analytical sample included 1340 Latinxs. Data from the 98



excluded participants did not differ from the overall Latinx TCSHS sample on the primary outcomes. The study was approved by the Institutional Review Board.

Measures

Depression

This was assessed using the Center for Epidemiologic Studies Depression Scale-Revised (CESD-R) [17]. The CESD-R is a widely used 20-item measure of depression based on diagnostic and statistical manual (DSM) diagnosis. Responses are provided on a scale from 0 (rarely) to 3 (most or all of the time), with higher scores denoting higher depression. In this study, the reliability of the CESD-R was high (Cronbach alpha = 0.94).

Perceived Ethnic Discrimination

This was assessed using the perceived discrimination subscale from the Mexican American Prevalence and Population Survey (MAPPS) [18]. This subscale consists of three items assessing feeling unaccepted, been treated unfairly, and observing others being treated unfairly due to being Latinx, which were used to create a total score for perceived ethnic discrimination. For each of the items, higher scores reflected higher perceived ethnic discrimination. Reliability for this scale was acceptable (Cronbach alpha = 0.70).

Social Support

Social support was assessed using the MOS social support survey [12]. This 19-item questionnaire assesses four distinct types of social support including: (a) emotional/informational support, which refers to the act of offering advice, positive affect, and empathy (e.g., someone to give you good advice); (b) tangible support, which involves the provision of material resources as aid (e.g., someone to help you if you are sick); (c) affectionate support, which emphasizes physical and verbal expressions of love and affection (e.g., someone who hugs you); and (d) positive social interaction, which refers to doing fun things with others to make them feel better (e.g., someone to do something enjoyable with). Participants were asked how often the aforementioned types of social support were available to them on a 5-point Likert scale from 1 (none of the time) to 5 (all of the time), where higher scores denote higher social support. In this study, the reliability of the MOS was high (Cronbach alpha = 0.97).

Covariates

These included age, gender, education, financial strain, country of birth (US- versus foreign-born), and years in the USA

(only for foreign-born participants). Age, education, financial strain, and years in the USA were used as continuous variables, whereas gender was dichotomous.

Statistical Analysis

Preliminary analyses included descriptive statistics and assessment of normality distributions. Using separate ordinary least squared multiple regressions, we addressed the question of whether ethnic discrimination was associated with depression after controlling for relevant covariates, as well as whether different types of social support interacted with perceived ethnic discrimination to predict depression. All independent variables were grand mean centered. To test for moderation, four different types of social support, perceived ethnic discrimination, and the interaction of perceived ethnic discrimination and each of the four types of social support were entered as predictors in the model with the full sample. In this model, we controlled for age, gender, education, financial strain, and nativity status. To assess the effect of nativity status within the context of perceived ethnic discrimination and social support, we conducted an additional model testing the three-way interaction of perceived ethnic discrimination by type of social support by nativity status. Similar to the previous model, we controlled for age, gender, education, and financial strain. All tests were two-sided and α < 0.05 was considered to be statistically significant.

Results

Sample

Most of the sample was of Mexican descent (90%), with approximately 30% being foreign-born. Participants ranged in age from 25 to 90 years, with most being middle age (44%). The average age was 46 years (SD = 15.0), with foreign-born participants being significantly younger than their US-born counterparts (p < 0.001). The majority of the sample was female (57%). US-born participants had a significantly higher level of education than the foreign-born (p < 0.001). Also, significant differences in depression were found across the groups, with US-born participants reporting higher depression than the foreign-born (p = 0.003). On average, foreign-born participants had lived in the USA approximately 20 years (SD = 14.9). No other significant differences were found (see Table 1).

In bivariate analyses, higher level of perceived ethnic discrimination was significantly associated with being older, having higher education, greater financial strain, lower social support, and higher depression. Also, higher depression was significantly associated with higher financial strain and lower social support, as well as with being female and US-born. Lower social support



 Table 1
 Sample characteristics

Variable	Total ($N = 1340$)			US born $(n = 941)$			Foreign born $(n = 399)$			
	\overline{N}	% or M	SD	n	% or M	SD	n	% or M	SD	p
Age	1340	46.0	15.0	941	47.1	15.3	399	43.6	13.9	< 0.001***
Gender	1340	100%		941	70.2%		399	29.8%		0.542
Women	768	57.3%		546	58.0%		222	55.6%		
Men	572	42.7%		395	42.0%		177	44.4%		
Education	1340	10.7	3.5	941	11.5	3.0	399	8.8	3.9	< 0.001***
Financial strain	1340	4.9	5.3	941	4.7	5.3	399	5.2	5.2	0.185
Discrimination	1340	3.3	1.4	941	3.3	1.4	399	3.2	1.5	0.689
Emotional/information support	1340	4.4	0.9	941	4.4	0.9	399	4.3	1.0	0.115
Tangible support	1340	4.5	0.8	941	4.5	0.8	399	4.5	0.8	0.951
Affective support	1340	4.7	0.7	941	4.6	0.7	399	4.7	0.8	0.508
Positive interaction support	1340	4.6	0.8	941	4.6	0.8	399	4.6	0.8	0.130
CESD-R60	1340	8.6	12.4	941	8.5	11.2	399	6.5	9.4	0.003**

^{***}p<.001;**p<.01;*p<.05

was also significantly associated with higher financial strain. Neither gender nor nativity status were significantly associated with perceived ethnic discrimination (see Table 2).

Type of Social Support as Moderator Between Perceived Ethnic Discrimination and Depression

In the full model including all participants, perceived ethnic discrimination was significantly associated with depression after controlling for relevant covariates (B = 0.849, 95% CI = [0.419, 1.279], p < 0.001). Specifically, higher levels of perceived ethnic discrimination were associated with higher depression. After controlling for relevant covariates, there was a main effect of positive interaction support on depression (B = -2.040, 95% CI = [-3.434, -0.645], p < 0.004).

Specifically, lower positive interaction support was associated with higher depression. No other types of social support were significantly associated with depression. Pertaining to the moderating effect of social support, the interaction between perceived ethnic discrimination and affective social support was significant in the adjusted model (B = -1.013, 95% CI = [-1.958, -0.068], p = 0.036). Specifically, there was a significant moderating effect of affective social support on the association between perceived ethnic discrimination and depression. In other words, participants with higher levels of affective social support who experience perceived ethnic discrimination had lower depression when compared with Latinxs with lower levels of affective support who faced perceived ethnic discrimination. Of note, gender, education, financial strain, and nativity status remained significantly associated with depression in the full model (see Table 3).

Table 2 Correlations among study variables

Variable	1	2	3	4	5	6	7	8	9	10
1. Age										
2. Gender	-0.05									
3. Education	-0.25***	< 0.01								
4. Financial Strain	-0.15***	0.11***	-0.07*							
5. Nativity Status	0.11***	0.02	0.36***	-0.04						
6. CESD-R80	-0.04	0.17***	-0.04	0.43***	0.08**					
7. Discrimination	-0.09**	-0.04	0.09**	0.25***	0.01	0.20***				
8. Emotional/information Support	-0.03	0.05*	*80.0	-0.22***	0.04	-0.20***	-0.13***			
9. Tangible Support	-0.02	-0.02	0.003	- 0.24***	< 0.01	-0.24***	-0.15***	0.70***		
10. Affective Support	< 0.01	0.04	< 0.01	- 0.19***	-0.02	-0.21***	-0.09**	0.59***	0.71***	
11. Positive interaction support	-0.03	0.01	0.02	-0.22***	-0.04	-0.26***	-0.11***	0.63***	0.69***	0.83***



Table 3 Predictors of depression among Latinxs

Factor	В	SE	eta	95% CI	p value
Age	- 0.004	0.021	- 0.005	[-0.046, 0.037]	0.835
Gender	3.275	0.608	0.130	[2.082, 4.468]	< 0.001
Education	-0.227	0.098	-0.064	[-0.415, -0.039]	0.018
Financial strain	0.810	0.061	0.343	[0.690, 0.930]	< 0.001
Nativity status	3.121	0.711	0.115	[1.726, 4.517]	< 0.001
Discrimination	0.849	0.219	0.097	[0.419, 1.279]	< 0.001
Emotional/information support	-0.101	0.494	-0.097	[-1.071, 0.869]	0.838
Tangible support	-1.037	0.654	-0.066	[-2.319, 0.246]	0.113
Affective support	0.750	0.832	0.042	[-0.882, 2.381]	0.368
Positive interaction support	-2.040	0.711	-0.132	[-3.434, -0.645]	0.004
Discrimination × emotional support	-0.111	0.332	-0.013	[-0.761, 0.540]	0.738
Discrimination × tangible support	0.373	0.397	0.040	[-0.406, 1.152]	0.348
Discrimination × affective support	-1.013	0.482	-0.087	[-1.958, -0.068]	0.036
Discrimination × positive interaction support	-0.219	0.431	-0.022	[-1.064, 0.626]	0.612
R^2	0.253				
F (14, 1339)	32.074				

Variations in Type of Social Support that Moderates the Association Between Ethnic Discrimination and Depression Between U.S. and Foreign-Born Latinxs

To assess the effect of nativity status in the context of perceived ethnic discrimination and social support, we tested the three-way interaction of perceived ethnic discrimination by type of social support by nativity status. None of the three-way interactions were significant.

Discussion

Key findings from the study are summarized as follows: as hypothesized (a) higher levels of ethnic discrimination were associated with higher depression for both US- and foreignborn Latinxs. Also consistent with our hypothesis, (b) higher social support, specifically positive interaction support, was associated with lower depression among both groups. Perhaps most importantly, this study advances our understanding of the association between ethnic discrimination and depression because (c) findings indicate that higher levels of social support, specifically affectionate support, mitigate the adverse association between ethnic discrimination and depression among Latinxs, regardless of nativity status.

The finding in this study that higher perceived ethnic discrimination is associated with higher depression among Latinxs is consistent with other studies; thus, adding to the increasing evidence that ethnic discrimination is a sociocultural stressor that functions as a risk factor for diminished

mental health [6, 19]. Similarly, the beneficial association of higher social support and lower depression among Latinxs is consistent with prior studies [20]. The examination of social support is strengthened in this study because it took into account multiple types of perceived social support. Based on our findings, positive interaction support was the only type of social support to have a statistically significant association with depression for US- and foreign-born Latinxs. One explanation for this finding may be that compared with other types of social support, the interpersonal nature of positive interaction support, such as engaging in enjoyable or fun activities with others, may facilitate other forms of coping such as distraction and behavioral activation [21, 22]. Indeed, research shows that engaging in activities that help to take one's mind off adverse events is a preferred coping strategy for depression among Latinxs, particularly when such activities are shared with friends and loved ones [23]. Thus, it is possible that the aforementioned activities, when undertaken within a social context, may facilitate the experiencing of positive emotions (e.g., feeling connected, joy, gratitude), which in turn could broaden a person's perspective beyond depression [24]. Additional studies aimed at identifying the effects of individual characteristics of supportive figures (e.g., intra versus intergroup) on depression symptoms, as well as studies exploring the mechanisms through which positive interaction support ameliorates depression among Latinxs would be particularly helpful to inform the development of interventions from a cultural perspective.

Importantly, findings from the moderation analysis lend support to the stress-buffering model because higher levels of affectionate support weakened the association between

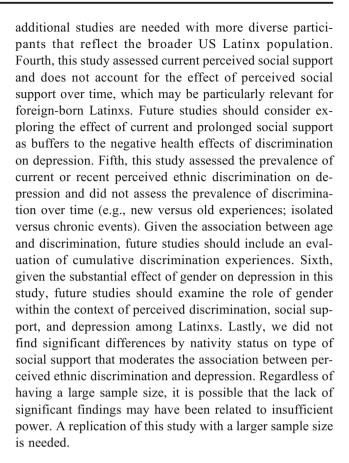


ethnic discrimination and depression regardless of nativity status. This finding is relevant to clinical practice because it highlights that in the presence of perceived (or actual) ethnic discrimination, the type of social support that is most helpful to buffer the negative effects of discrimination is affectionate support. This type of support refers to perceived physical and verbal expressions of love and affection, such as being told that you are loved or being hugged [12]. Ethnic differences in the preference of affectionate support to express closeness have been documented, with Latinxs endorsing a greater preference for displays of affection in the form of touch and embrace when compared with their Anglo counterparts. Latinx cultural values such as collectivism and familism, that is the need for closeness to others and family [25, 26], may place a high value or appreciation for the expression of affection, thus supporting our findings. Future studies exploring the role of Latinx cultural values on the use of affective social support as a preferred strategy for coping with depression associated with discrimination are needed.

Noteworthy is that compared with foreign-born Latinxs, US-born Latinxs reported higher levels of depression. This finding is consistent with a large body of research documenting disparities in mental health outcomes among Latinxs varying in nativity status, with those born in the USA reporting a health disadvantage [27]. A tentative hypothesis for the aforementioned disparity is that health likely diminishes with longer time living in the USA as a function of acculturation [27]. Consistent with the "healthy immigrant paradox," as immigrants undergo the wear-and-tear of adapting to life in the USA, the health advantage of foreignborn immigrants dissipates with time, thus aligning with poorer health outcomes reported by their US-born counterparts [28]. Another hypothesis for the mental health disparity in nativity status is that when compared with their foreignborn counterparts, the higher educational level and English proficiency of US-born Latinxs may increase their exposure to social conditions (e.g., white-collar jobs, higher education, less diverse settings) that increase risk for depression when facing discrimination and prejudice that is unpredictable and difficult to handle [29]. Developing a better understanding as to how the immigration process influences mental health outcomes among Latinxs varying in nativity status is essential to inform the reduction of existing health disparities among Latinx subgroups.

Limitations

This study has some limitations. First, this study utilized self-report measures that are susceptible to participant misrepresentation and error. Second, due to the cross-sectional design, causation cannot be inferred. Third, generalizability may be limited because all participants lived in Texas, and a great majority were of Mexican origin. As such,



Conclusions

This study adds to the limited literature on type of social support as moderator to the association between perceived ethnic discrimination and depression among Latinxs differing in nativity status. Although there are many studies that have shown the adverse effect of ethnic discrimination on depression—this study provides some evidence that higher levels of social support, particularly positive interactions and affective support, may be significant factors in helping Latinxs cope with ethnic discrimination. This information is essential to develop context-sensitive interventions aimed at building resilience against the detrimental mental health effects of ethnic discrimination affecting the largest and fastest growing ethnic minority in the USA.

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Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.



References

- Carter RT, Forsyth J. Reactions to racial discrimination: emotional stress and help-seeking behaviors. Psychol Trauma. 2010;2(3): 183–91.
- Pascoe EA, Smart-Richman L. Perceived discrimination and health: a meta-analytic review. Psychol Bull. 2009;135(4):531–54.
- Williams DR, Neighbors HW, Jackson JS. Racial/ethnic discrimination and health: findings from community studies. Am J Public Health. 2003;93(2):200–8.
- Schmitt MT, Branscombe NR, Postmes T, Garcia A. The consequences of perceived discrimination for psychological well-being: a meta-analytic review. Psychol Bull. 2014;140(4):921–48.
- Cano MA, de Dios MA, Castro Y, Vaughan EL, Castillo LG, Lorenzo-Blanco EI, et al. Alcohol use severity and depressive symptoms among late adolescent Hispanics: testing associations of acculturation and enculturation in a bicultural transaction model. Addict Behav. 2015;49:78–82.
- Cano MA, Castro Y, de Dios MA, et al. Associations of ethnic discrimination with symptoms of anxiety and depression among Hispanic emerging adults: a moderated mediation model. Anxiety Stress Coping. 2016;29:699–707.
- Perez-Rodriguez MM, Baca-Garcia E, Oquendo MA, Wang S, Wall MM, Liu SM, et al. Relationship between acculturation, discrimination, and suicidal ideation and attempts among U.S. Hispanics in the National Epidemiologic Survey of Alcohol and Related Conditions. J Clin Psych. 2014;75(4):399–407.
- Kwon S, Han D. Discrimination, mental disorders, and suicidal ideation in Latino adults: decomposing the effects of discrimination. J Immigrant Minority Health. 2019;21:143–50.
- Williams DR, Mohammed SA. Discrimination and racial disparities in health: evidence and needed research. J Behav Med. 2009;32: 20–47
- Cohen S. Social relationships and health. Am Psychol. 2004;59: 676–84.
- Noh S, Kaspar V. Perceived discrimination and depression: moderating effects of coping, acculturation, and ethnic support. Am J Public Health. 2003;93(2):232–8.
- Sherbourne CD, Stewart AL. The MOS social support survey. Soc Sci Med. 1991;32(6):705–14.
- U.S. Census. 2015 American community survey 1-year estimates. http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk ().
- Pew Research Center. More Latinxs have serious concerns about their place in America under Trump. https://www.pewhispanic.org/ wp-content/uploads/sites/5/2018/10/Pew-Research-Center_ Latinxs-have-Serious-Concerns-About-Their-Place-in-America_ 2018-10-25.pdf (accessed 18 April 2019).
- Pew Research Center. Latinxs perceptions of discrimination. http:// www.pewresearch.org/daily-number/Latinxs-perceptions-ofdiscrimination/ (accessed 28 November, 2018).

- Cutchin MP, Eschbach K, Mair CA, Ju H, Goodwin JS. The sociospatial neighborhood estimation method: an approach to operationalizing the neighborhood concept. Health Place. 2011;17(5):1113-21.
- 17. Eaton WW, Smith C, Ybarra M, et al. Center for Epidemiologic Studies Depression Scale: review and revision (CESD and CESD-R). In M. E. Maruish (Ed.) The use of psychological testing for treatment planning and outcomes assessment: instruments for adults. Mahwah, NJ: Lawrence Erlbaum Associates Publishers 2004: 363–377.
- Finch BK, Hummer RA, Kol, et al. The role of discrimination and acculturative stress in the physical health of Mexican-origin adults. Hisp J Behav Sci 2001; 23(4): 399–429.
- Ward JB, Feinstein L, Vines AI, et al. Perceived discrimination and depressive symptoms among U.S. The modifying role of educational attainment. *Eth Health*: Latinxs; in press.
- Crockett LJ, Iturbide MI, Torres Stone RA, McGinley M, Raffaelli M, Carlo G. Acculturative stress, social support, and coping: relations to psychological adjustment among Mexican American college students. Cultur Divers Ethnic Minor Psychol. 2007;13:347– 55.
- Kanter JW, Diéguez Hurtado G, Rusch LC, et al. Behavioral activation for Latinxs with depression. Clin Case Stud. 2008;7:491

 506.
- Vungkhanching M, Tonsing JC, Tonsing KN. Psychological distress, coping and perceived social support in social work students. Br J Soc Work. 2016;47:1999–2013.
- Martinez Tyson D, Castaneda H, Porter M, Quiroz M, Carrion I. More similar than different? Exploring cultural models of depression among Latino immigrants in Florida. Depress Res Treat. 2011: 1–11
- Fredrickson BL. Cultivating positive emotions to optimize health and well-being. Prev Treat 2000; 3(1).
- Knight GP, Gonzales NA, Saenz DS, et al. The Mexican American cultural values scale for adolescents and adults. J Early Adolesc. 2010;30:444–81.
- Schwartz SJ, Unger JB, Zamboanga BL, Szapocznik J. Rethinking the concept of acculturation: implications for theory and research. Am Psychol. 2010;65:237–51.
- Alegria M, Mulvaney-Day N, Torres M, Polo A, Cao Z, Canino G. Prevalence of psychiatric disorders across Latino subgroups in the United States. Am J Public Health. 2007;97:68–75.
- Jerant A, Arellanes R, Franks P. Health status among U.S. Hispanics: ethnic variation, nativity, and language moderation. Med Care. 2008;46(7):709–17.
- Ruiz JM, Hamann HH, O'Connor MF, Mehl M. The Hispanic health paradox: from epidemiological phenomenon to contribution opportunities for psychological science. Group Process Intergroup Relat. 2016;19:462–76.

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