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Stress, Social Support and their Relationship to Depression and Anxiety among Latina Immigrant Women

Daron Ryan¹, Stephanie N. Tornberg-Belanger^{1,2}, Georgina Perez¹, Serena Maurer¹, Cynthia Price³, Deepa Rao^{4,5}, Kwun C. G. Chan^{1,6}, India J. Ornelas¹

¹Department of Health Services, University of Washington

²Department of Epidemiology, University of Washington

³Department of Biobehavioral Nursing and Health Informatics, University of Washington

⁴Department of Global Health, University of Washington

⁵Department of Psychiatry and Behavioral Services, University of Washington

⁶Department of Biostatistics, University of Washington

INTRODUCTION

The United States (U.S.) has experienced a large increase in the Latino population in recent years, in large part due to increased immigration from Mexico and other countries in Latin America. Women comprise over half of the foreign-born Latino population [1, 2]. Among Latinas, 30% report experiencing a mental health disorders in their lifetime, although rates vary by country of origin [3, 4]. Rates of mental disorders among Latinos have been increasing, especially in the past year given the additional stressors related to COVID-19 [5]. Latina women who are immigrants have higher rates of depression and anxiety than Latino immigrant men [6]. Latina immigrant women also experience higher rates of depression and anxiety compared to women of other racial and ethnic groups [3]. Poor mental health can also impact Latina immigrant women's overall health and wellbeing, as it puts them at increased risk for cardiovascular disease, obesity and diabetes [7, 8].

Minority stress theory posits that people experience chronic and unique stressors associated with each of their social identities. This stress can be combined or additive for those with multiple intersecting minority identities [9]. For example, Latina immigrant women may be particularly vulnerable to depression and anxiety due to minority stress they experience

Corresponding Author: India J. Ornelas, PhD, University of Washington, Department of Health Services, 3980 15th Ave NE, Box 351622, Seattle, WA 98195, (206) 685-8887, iornelas@uw.edu.

COMPETING INTEREST STATEMENT

The authors have no competing interests to report.

DECLARATIONS OF INTEREST

None.

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based on their gender, their ethnicity, and their immigration status. For women, common sources of gender-based stress include concerns over balancing work and family obligations [10, 11]. In addition to these general stressors, Latinas may also experience stressors related to their ethnicity, such as discrimination or historical trauma [12, 13]. Latinas who are immigrants, face additional stressors, such as anti-immigrant sentiment, a political climate that perpetuates fear of deportation, traumatic migrations, and family separation [14-16]. These stressors are further compounded by stigma about disclosing mental health concerns, barriers to mental health care, and low use of pharmacological treatment [17-19]. While there has been previous research linking stress exposure to poor mental health [20, 21], there is little research describing the impact of different types of stressors on depression and anxiety among Latina immigrants.

According to minority stress theory, minority groups often rely on coping strategies when experiencing social stressors. Social support and supportive social networks can reduce exposure to stressors, as well as buffer their impact on mental health [22, 23]. Previous research has shown that these social support and social networks are particularly important for Latina immigrant women, who turn to the support of female friends and relatives throughout the immigration process [10, 24]. Conversely, social isolation can also be a stressor and is associated with poor mental health outcomes [25, 26]. For example, Latina immigrants that are undocumented may fear leaving the house, further isolating them from their social networks [25]. Recent changes in immigration policy enforcement have increased the frequency of deportations and family separation [27]. However, few studies have shown whether this heightened exposure to stress and limited access to social support is associated with poor mental health among Latina immigrant women.

Our study sought to describe the different types of stressors and social support experienced by Latina immigrant women, as well as their levels of depression and anxiety. In addition, we aimed to assess whether different types of stressors and social supports were associated with depression and anxiety symptoms, in hopes of identifying ways to prevent and reduce future mental health disparities.

METHODS

Recruitment and Data Collection

The study used survey data collected as part of a larger study to evaluate a mental health intervention for Latina immigrant women, Amigas Latinas Motivando el Alma (ALMA). ALMA is a group-based intervention that builds social support and encourages coping strategies as a way to prevent and reduce depression and anxiety [28]. Participants were recruited from two community-based organizations serving Latino immigrants in the Seattle-King County area of western Washington State. Research staff worked with these organizations to recruit potential participants using flyers, social media, and word-of-mouth strategies. This study included data from baseline surveys collected from participants which were completed across three waves, from September 2018 to March 2020. To be eligible for this study, participants had to be at least 18 years old, Spanish-speaking, and identify as a Latina immigrant. All participants provided consent and all procedures were approved by the University of Washington Human Subjects Division. Trained bilingual interviewers

conducted surveys in Spanish with participants in private locations at our two community partner organizations. Responses were recorded on tablets using Open Data Kit software. Participants received 30 dollars for completing the 75-minute survey.

Measures

The baseline survey included measures of stress, social support, depression, and anxiety. All measures that were not previously validated in Spanish were translated by two bilingual members of the research team. Translations were also reviewed by other bilingual research team and community advisory board members, and tested using cognitive interviewing as part of the formative work preceding this study. The following measures were used in this analysis.

Depressive symptoms — Depressive symptoms were measured using the Patient Health Questionnaire 9 (PHQ-9). This 9-item measure asks how frequently common symptoms of depression are experienced in the previous two weeks, from 0 (never) to 3 (almost every day). Responses are summed to create a total score ranging from 0 – 27. Total scores of 10 or more indicate moderate to severe symptoms. This scale has been validated among Spanish-speaking samples and had good internal consistency in our sample ($\alpha = 0.79$) [29, 30].

Anxiety symptoms — Anxiety symptoms were measured using the 7-item Generalized Anxiety Disorders-7 (GAD-7) scale. The GAD-7 measures frequency of symptoms over the past 2 weeks, with responses ranging from 0 (not at all) to 3 (nearly every day). Responses are summed to create a total score ranging from 0 to 21. A score of 10 or greater indicates moderate to severe anxiety. The GAD-7 has been validated in a Spanish-speaking community sample and had good internal consistency among our sample ($\alpha = 0.87$) [31, 32].

Social Ties — The Lubben Social Network scale was used to assess social ties within our sample [33]. Participants reported the number and frequency of contact they had with friends, family, and relatives, and the degree to which they feel supported by these contacts in this 6-item scale. Total scores range from 0 – 30, with higher scores indicating a larger number of social ties ($\alpha = 0.76$).

Social Support — To describe social support, we used an abbreviated version of the Medical Outcome Study Social Support Measure [34]. The 15-item scale asks participants to report how often specific types of support are available to them when needed, with responses ranging from 1 (none of the time) to 5 (all of the time). This instrument is comprised of three subscales: Emotional Support, Affectionate Support, and Positive Social Interaction, with averages taken of the items belonging to each subscale for a total possible subscore range from 1 – 5. Example emotional support items include having someone to confide in or share about your problems and someone who understands your problems ($\alpha = 0.94$). Example affectionate support items include having someone who makes you feel loved and someone who hugs you ($\alpha = 0.86$). Example positive social interaction items include someone to have a good time with and someone to get together with for relaxation ($\alpha = 0.87$).

Social Isolation —Social isolation was measured using the Patient Reported Outcome Measures Information System (PROMIS) Social Isolation Scale [35]. The 6-item questionnaire asks participants to report how frequently they experience isolation and loneliness. Responses are summed to create a raw total score (0 – 24) that is then rescaled into a standardized score with a mean of 50 and a standard deviation of 10 ($\alpha = 0.88$).

Perceived Stress —The Perceived Stress Scale (PSS) was used to assess each participant’s overall stress level [36]. The 4-item scale measures the degree to which events in life are stress inducing. Recalling the last month, participants were asked how often they experienced certain overwhelming thoughts or feelings. Responses are summed to create a total score, ranging from 0 to 16, with higher scores suggesting a higher measured perceived level of stress ($\alpha = 0.75$).

Acculturation Stress—To assess the severity of stress associated with acculturation to the United States, we created a measure drawing on six items from the existing Migrant Farmworker Stress Index that were found to be salient among this population in our formative research [10, 37]. These six items included “Sometimes I have difficulty communicating in the English language,” “I worry about not having access to health care,” “At times I have to work long hours,” “Sometimes I don’t feel like I belong in this country,” “Sometimes I have difficulty finding a place to live,” and “Migrating to this country was difficult.” Participants were asked how stressful each of the six situations were, with responses ranging from “not stressful at all” to “extremely stressful.” Total scores ranged from 0 – 18, with higher scores implying greater degrees of acculturation stress ($\alpha = 0.72$).

Immigration Stress—To describe the frequency of immigration related stressors, we used a shortened version of the 13-item Immigration Stressor Scale [38, 39]. The 9 items selected for our study were based on our formative research with this population [10]. Participants were asked to report how often they experienced immigration-specific concerns, with responses ranging from “never” to “always”. We divided these items into three categories, each with three related items: family separation stress (includes worry about friends/family in home country, missing help and support of friends/family in home country, and feeling lonely or isolated), law/immigration enforcement stress (includes worry over something happening while driving, being harassed by the police, and being deported), and basic needs stress (includes worry about serious illness/accident, finding or keeping a job, and meeting basic needs for family). Each category had a total possible score of 0 – 9 with higher scores indicating a greater frequency of that type of immigration related stress ($\alpha = 0.79$).

Discrimination —We used an adapted version of the California Health Interview Survey (CHIS) Discrimination Module [40] to assess discrimination experiences among our sample. The measure asks participants to report if they have experienced unfair treatment in the following settings: at work, at shops/restaurants, when receiving medical care, and other settings. We summed these experiences to produce a total possible score ranging from 0 – 5, with higher scores indicating experiences of discrimination in more settings.

Demographics —Demographic information collected included self-reported age, years of education, living with a partner, income, country of origin, immigration status, years living in the United States, and language(s) spoken. Independent sample t-tests or analyses of variance for binomial or categorical data, respectively, were performed to examine associations of demographics with depression, anxiety, stressors, and support scores.

Data Analysis

We calculated descriptive statistics for demographic characteristics, depression, anxiety, and all measures of social supports and stressors. Univariate and multivariate linear regression models with 95% confidence intervals (CIs) were used to estimate the association of depression or anxiety symptoms with social supports and stressors of interest, as well as associations between social supports and stressors. Nested models estimated associations of depression and anxiety with each social support and stressor as an independent variable, with social supports and stressors grouped together to assess their combined association with depression and anxiety symptoms, and a full adjusted model including all social supports and stressors. Based on our bivariate analyses, all models were adjusted for age, language(s) spoken and education and only complete cases were included in the analysis (3 cases excluded due to missing data). All data analysis was completed in STATA 14.2 (College Station, TX).

RESULTS

Table 1 presents descriptive statistics for participant characteristics (N = 153). Our sample was predominately Mexican (83%), had a mean age of 40 years and roughly half were monolingual Spanish speakers (46%). The majority had lived in the U.S. for 10 years or more (57%) and roughly half of our sample was undocumented (without legal status), although 17% chose not to answer this question. The majority had at least a high school education (70%) and reported currently living with a partner (59%). Among our sample, 29% reported experiencing moderate to severe depressive symptoms and 32% reported moderate to severe anxiety symptoms. Mean PHQ-9 score for this sample of 7.4 falling in the range of mild depression. Our sample reported a mean GAD-7 score of 7.2, considered mild anxiety. Table 1 also displays the mean scores of depressive and anxiety symptoms for each of the participant characteristics. There were no statistically significant associations between any of the participant characteristics and mental health outcomes.

We present descriptive statistics for all social support and stress measures in Table 2. Levels of social support indicated that participants experienced support some of the time on average, with affectionate support being most frequent. Nonetheless, the mean (13.9) for social ties indicates a high level of social isolation in this sample. Levels of perceived stress indicated that participants reported that on average, they sometimes experienced uncontrollable stress. Levels of acculturation stress were somewhat to moderately stressful, on average. Of the immigration related stressors, family separation stress had the highest mean of 6.4, indicating that participants reported being worried about family separation at least some of the time. On average, participants reported experiencing discrimination in at least one setting.

We also assessed associations between demographic variables, social stressors and social supports (results not reported in tables). Participants over 40 reported greater social ties (14.9 vs. 12.9; $p = 0.02$) and emotional support (1.9 vs. 2.3; $p = 0.04$) than those less than 40. Living with a partner was associated with higher levels of social support (2.6 vs. 2.; $p = 0.01$), less social isolation (50.3 vs. 53.2; $p = 0.04$), and lower basic needs stress (5.6 vs 6.4; $p = 0.03$) than living alone. Those who entered or were in the US without legal permission had higher basic needs stress ($\beta = 1.09$; $p = 0.01$) and greater legal concerns ($\beta = 2.24$; $p < 0.01$) compared to those with those in the country legally. Those with at least a high school level education had greater social ties (14.5 vs. 12.5; $p = 0.03$) than those without a high school education. Those who spoke only Spanish had lower perceived stress scores ($\beta = -2.21$; $p < 0.01$) than those that spoke at least some English.

The adjusted analyses for each social support and stressor with depression and anxiety are also displayed in Table 2. All social support measures (Social Ties, Emotional Support, Affectionate Support, and Positive Social Interactions) were negatively associated with depression and anxiety symptoms. All stressors (Perceived Stress, Social Isolation, Acculturation Stress, Family Separation Stress, Law/Immigration Enforcement Stress, Basic Needs Stress, and Discrimination) were positively associated with depression and anxiety symptoms.

Table 3 presents four sets of adjusted models; models A and B are for depression symptoms and models C and D are for anxiety symptoms. In model A which groups all social supports, only emotional support remained significantly associated with depression symptoms, after controlling for other supports. In model B which grouped all social stressors, perceived stress, social isolation, and law/immigration enforcement stress were significantly associated with increased symptoms of depression, when controlling for other stressors. No social supports were found to be associated with anxiety symptoms in model C, which grouped all social supports. In model D, both perceived stress and basic needs stress were significantly associated with increased anxiety symptoms, after controlling for other stressors.

Table 4 displays fully adjusted models including both social supports and stressors in the same model. For depression, higher perceived stress, social isolation, and law/immigration enforcement stress continued to be associated with increased symptoms. Similarly, for anxiety, having fewer supportive social interactions, higher perceived stress, and higher basic needs stress were associated with increased symptoms.

DISCUSSION

The present study examined the associations between stress, social support, and mental health in a community-based sample of Latina immigrant women. Findings suggest that Latina immigrant women experience multiple types of stressors and that these are associated with increased symptoms of depression and anxiety. The stressors most strongly associated with depression included general perceived stress, law/immigration enforcement stress, and social isolation. General perceived stress and stress associated with meeting basic needs were most strongly associated with anxiety. In terms of social support, positive social interactions were associated with lower levels of anxiety symptoms.

The prevalence of moderate to severe depression symptoms was high (29%) in comparison to the general population but was similar to that reported among Latina immigrants in other studies [15, 41, 42]. The proportion of women with moderate to severe anxiety symptoms (32%) was higher than other studies among Latina immigrants [43, 44]. Some research suggests that rates of depression and anxiety in Latina immigrant women may be increasing as a result of the anti-immigrant social and political environment in the U.S. [45].

Women in our study were living with significant levels of stress across multiple categories. Perceived stress, a measure of the frequency of general stressors overall, was higher among women in our study compared to levels observed in the general population [46]. This may be related to their experiences as women, balancing demands of work and home, as women often report higher levels of perceived stress than men [47]. Still, above and beyond stressors experienced by all women, participants in our study reported significant immigration and acculturation stressors unique to this population, specifically social isolation and family separation stress. While all types of stressors were associated with worse mental health, perceived stress was most strongly associated with higher levels of depression and anxiety symptoms. This is consistent with previous research indicating a similar association between perceived stress and mental health outcomes among Latina immigrants [48, 49]. Recent research suggests that the additive effects of immigration and acculturation stress, on top of more general stressors associated with being a woman and/or mother, puts Latina immigrant women at increased risk for depression [50].

Apart from perceived stress, social isolation and law/immigration enforcement stress were also significantly associated with depression symptoms [51, 52]. Previous studies among Latina immigrants have shown social isolation due to recent migration and family separation was associated with depressive symptoms [53]. These two stressors are also linked. Social ties can be further disrupted by immigration enforcement and deportation, increasing social isolation among Latina immigrants and adding significant barriers to reconstructing community ties [54]. Previous studies have documented the associations between anti-immigrant sentiment, discrimination due to legal status and worse psychological well-being among Latino immigrants [55]. The recent increase in immigration enforcement and anti-immigrant sentiment has led to a climate of fear and mistrust among immigrant communities. Other studies have highlighted the negative impact of anti-immigration policies and practices, specifically raids and apprehensions, on the mental health outcomes of Latino immigrants [56-58]. Some research also suggests that the burden of these immigration policies is heavier for Latina immigrant women as they are left to care for children after their partners are deported and experience worry about the undocumented status of themselves and/or family members [16].

Our findings also suggest that different stressors may be associated with different mental health outcomes. Stress related to meeting basic needs, such as finding and maintaining employment and affording food and rent, was associated with increased anxiety, but not depression. Previous research has pointed to the link between structural stressors (food, housing, and/or insecurity) and increased risk of depression among Latina immigrants, but few studies have focused on the association with anxiety [59, 60]. Our study highlights the mental health burden that Latina immigrant women experience in meeting the day-to-day

needs of their families. Stress around finding and securing employment and maintaining financial stability may be compounded for Latina immigrants who are already grappling with precarious work conditions, loss of household income due to deportation, and providing support for family members both in the U.S. and in their country of origin [61].

In terms of social supports, participants' experience of positive social interactions was most strongly associated with decreased anxiety (but not depression). This finding supports previous research linking increased social support and social ties with better mental health [62, 63]. Previous studies have noted that local and transnational family support, as well as relationships with other Latina immigrants are particularly important for helping Latina immigrant women [10]. While there is limited research among Latina immigrants, several studies have pointed to the importance of social support in moderating the impact of stress on mental health [23]. Specifically, recent research suggests that social support may play a protective role in mitigating immigration related stress among newly immigrated Latinos [64]. Further research is needed to examine which stressors can be buffered by social support and whether this may be a potential target for future interventions promoting mental health.

Although the present study makes an important contribution to the limited literature on Latina immigrants' mental health, there are certain limitations worth noting. All women in this sample were recruited from community-based organizations in western Washington State for an intervention study. Therefore, the sample may not reflect Latina immigrants' experiences in other settings or those that are less connected to social services. For example, experiences of stress and social support may be unique to this sample in comparison with other Latina immigrants living in areas where there are fewer social services or a smaller population of Latino immigrants from which to draw on for social support. Because it was an intervention study, women may have also been more likely to participate in the study if they had concerns about their own mental health. It is also important to note that our measures of mental health outcomes, the PHQ-9 and GAD-7, are both tools for screening depressive and anxiety symptoms, but do not substitute for the diagnosis of depression or anxiety by a trained clinician. Additionally, surveys were administered by interviewers and may have introduced social desirability bias in participant responses. Due to the cross-sectional design, the temporal direction of observed associations cannot be confirmed. Finally, there are likely other stressors not measured, such as interpersonal violence, that may contribute to depression and anxiety among Latina immigrant women.

The results of this study highlight important factors in the experience of depression and anxiety for Latina immigrants. These findings shed light on possible risk factors for poor mental health among this population and potential areas for targeted intervention. Longitudinal research is necessary to explore the mechanisms by which stress effects depression and anxiety and how social support may moderate this effect. Programs that reduce immigration related stressors and build social support among this population may help address mental health disparities experienced by Latina immigrants. In addition, policy interventions are needed to better support Latina immigrants as they navigate and adjust to life in the U.S.

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REFERENCES

1. Budiman A, et al., Statistical portrait of the foreign-born population in the United States, in Facts on U.S. immigrants, 2018/2018, Pew Research Center.
2. Brown A and Stepler R, 2014, Foreign-Born Population in the United States Statistical Portrait. 2014, Pew Research Center.
3. Alegria M, et al., Prevalence of mental illness in immigrant and non-immigrant U.S. Latino groups. *Am J Psychiatry*, 2008. 165(3): p. 359–69. [PubMed: 18245178]
4. Alegria M, et al., Prevalence of psychiatric disorders across Latino subgroups in the United States. *Am J Public Health*, 2007. 97(1): p. 68–75. [PubMed: 17138910]
5. Vahratian A, et al., Symptoms of Anxiety or Depressive Disorder and Use of Mental Health Care Among Adults During the COVID-19 Pandemic - United States, August 2020-February 2021. *MMWR Morb Mortal Wkly Rep*, 2021. 70(13): p. 490–494. [PubMed: 33793459]
6. Wassertheil-Smoller S, et al., Depression, anxiety, antidepressant use, and cardiovascular disease among Hispanic men and women of different national backgrounds: results from the Hispanic Community Health Study/Study of Latinos. *Ann Epidemiol*, 2014. 24(11): p. 822–30. [PubMed: 25439033]
7. Pereira-Miranda E, et al., Overweight and Obesity Associated with Higher Depression Prevalence in Adults: A Systematic Review and Meta-Analysis. *J Am Coll Nutr*, 2017. 36(3): p. 223–233. [PubMed: 28394727]
8. Luppino FS, et al., Overweight, obesity, and depression: a systematic review and meta-analysis of longitudinal studies. *Arch Gen Psychiatry*, 2010. 67(3): p. 220–9. [PubMed: 20194822]
9. Meyer IH, Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychol Bull*, 2003. 129(5): p. 674–697. [PubMed: 12956539]
10. Rios Casas F, et al., "Se vale llorar y se vale reir": Latina Immigrants' Coping Strategies for Maintaining Mental Health in the Face of Immigration-Related Stressors. *J Racial Ethn Health Disparities*, 2020. 7(5): p. 937–948. [PubMed: 32040841]
11. Fox JA and Kim-Godwin Y, Stress and depression among Latina women in rural southeastern North Carolina. *J Community Health Nurs*, 2011. 28(4): p. 223–32. [PubMed: 22053767]
12. Cacari Stone L, Avila M, and Duran B, El Nacimiento del Pueblo Mestizo: Critical Discourse on Historical Trauma, Community Resilience and Healing. *Health Educ Behav*, 2021. 48(3): p. 265–275. [PubMed: 34080474]
13. Misra S, et al., Structural Racism and Immigrant Health in the United States. *Health Educ Behav*, 2021. 48(3): p. 332–341. [PubMed: 34080482]
14. Cavazos-Rehg PA, Zayas LH, and Spitznagel EL, Legal status, emotional well-being and subjective health status of Latino immigrants. *J Natl Med Assoc*, 2007. 99(10): p. 1126–31. [PubMed: 17987916]
15. Ornelas IJ and Perreira KM, The role of migration in the development of depressive symptoms among Latino immigrant parents in the USA. *Soc Sci Med*, 2011. 73(8): p. 1169–77. [PubMed: 21908089]
16. Ornelas IJ, Yamanis TJ, and Ruiz RA, The Health of Undocumented Latinx Immigrants: What We Know and Future Directions. *Annual Review of Public Health*, 2020. 41(1): p. 289–308.

17. Kaltman S, et al., Preferences for trauma-related mental health services among Latina immigrants from Central America, South America, and Mexico. *Psychological Trauma: Theory, Research, Practice, and Policy*, 2014. 6(1): p. 83–91.
18. Benuto LT, et al., Mental Health Literacy, Stigma, and Behavioral Health Service Use: the Case of Latinx and Non-Latinx Whites. *J Racial Ethn Health Disparities*, 2019. 6(6): p. 1122–1130. [PubMed: 31327136]
19. Interian A, et al., The long-term trajectory of depression among Latinos in primary care and its relationship to depression care disparities. *Gen Hosp Psychiatry*, 2011. 33(2): p. 94–101. [PubMed: 21596201]
20. Schonfeld P, et al., The effects of daily stress on positive and negative mental health: Mediation through self-efficacy. *Int J Clin Health Psychol*, 2016. 16(1): p. 1–10. [PubMed: 30487845]
21. Cohen S, Janicki-Deverts D, and Miller GE, Psychological stress and disease. *JAMA*, 2007. 298(14): p. 1685–7. [PubMed: 17925521]
22. Bostean G and Gillespie BJ, Acculturation, acculturative stressors, and family relationships among Latina/o immigrants. *Cultur Divers Ethnic Minor Psychol*, 2018. 24(1): p. 126–138. [PubMed: 28650180]
23. Wang X, et al., Social support moderates stress effects on depression. *Int J Ment Health Syst*, 2014. 8(1): p. 41. [PubMed: 25422673]
24. Ornelas IJ, et al., Challenges and Strategies to Maintaining Emotional Health: Qualitative Perspectives of Mexican Immigrant Mothers. *Journal of Family Issues*, 2009. 30(11): p. 1556–1575.
25. Hurtado-de-Mendoza A, et al., Social isolation and perceived barriers to establishing social networks among Latina immigrants. *Am J Community Psychol*, 2014. 53(1-2): p. 73–82. [PubMed: 24402726]
26. Miyawaki CE, Association of social isolation and health across different racial and ethnic groups of older Americans. *Ageing Soc*, 2015. 35(10): p. 2201–2228. [PubMed: 26494934]
27. Simmons WP, Menjivar C, and Valdez ES, The Gendered Effects of Local Immigration Enforcement: Latinas' Social Isolation in Chicago, Houston, Los Angeles, and Phoenix. *International Migration Review*, 2020: p. 0197918320905504.
28. Ryan D, et al., Amigas Latinas Motivando el Alma (ALMA): an Evaluation of a Mindfulness Intervention to Promote Mental Health among Latina Immigrant Mothers. *J Behav Health Serv Res*, 2018. 45(2): p. 280–291. [PubMed: 29256003]
29. Kroenke K, Spitzer RL, and Williams JB, The PHQ-9: validity of a brief depression severity measure. *J Gen Intern Med*, 2001. 16(9): p. 606–13. [PubMed: 11556941]
30. Huang FY, et al., Using the Patient Health Questionnaire-9 to measure depression among racially and ethnically diverse primary care patients. *J Gen Intern Med*, 2006. 21(6): p. 547–52. [PubMed: 16808734]
31. Spitzer RL, et al., A brief measure for assessing generalized anxiety disorder: the GAD-7. *Arch Intern Med*, 2006. 166(10): p. 1092–7. [PubMed: 16717171]
32. Mills SD, et al., The psychometric properties of the generalized anxiety disorder-7 scale in Hispanic Americans with English or Spanish language preference. *Cultur Divers Ethnic Minor Psychol*, 2014. 20(3): p. 463–468. [PubMed: 25045957]
33. Lubben J, et al., Performance of an abbreviated version of the Lubben Social Network Scale among three European community-dwelling older adult populations. *Gerontologist*, 2006. 46(4): p. 503–13. [PubMed: 16921004]
34. Sherbourne CD and Stewart AL, The MOS social support survey. *Soc Sci Med*, 1991. 32(6): p. 705–14. [PubMed: 2035047]
35. Hahn EA, et al., New English and Spanish social health measures will facilitate evaluating health determinants. *Health Psychol*, 2014. 33(5): p. 490–9. [PubMed: 24447188]
36. Cohen S, Kamarck T, and Mermelstein R, A global measure of perceived stress. *J Health Soc Behav*, 1983. 24(4): p. 385–96. [PubMed: 6668417]
37. Hovey JD, Migrant Farmworker Stress Inventory (MFWSI) (English Version). 2000.

38. Read-Wahidi MR and DeCaro JA, Guadalupan Devotion as a Moderator of Psychosocial Stress among Mexican Immigrants in the Rural Southern United States. *Med Anthropol Q*, 2017. 31(4): p. 572–591. [PubMed: 28299834]
39. Goodkind JR, Gonzales M, Malcoe LH, & Espinosa J, The Hispanic Women's Social Stressor Scale: Understanding the multiple social stressors of US-and Mexico-born Hispanic women. *Hispanic Journal of Behavioral Sciences*, 2008. 30(2): p. 200–229.
40. Shariff-Marco S, et al., A mixed-methods approach to developing a self-reported racial/ethnic discrimination measure for use in multiethnic health surveys. *Ethn Dis*, 2009. 19(4): p. 447–53. [PubMed: 20073147]
41. Brody DJ, L.A. P, Hughes J, Prevalence of depression among adults aged 20 and over: United States, 2013–2016, in NCHS Data Brief. 2018, National Center or Health Statistics: Hyattsville, MD.
42. Roblyer MI, et al., Interpersonal and social correlates of depressive symptoms among Latinos in farmworker families living in North Carolina. *Women Health*, 2016. 56(2): p. 177–93. [PubMed: 26327338]
43. Ross J, et al., Association between immigration status and anxiety, depression, and use of anxiolytic and antidepressant medications in the Hispanic Community Health Study/Study of Latinos. *Annals of Epidemiology*, 2019. 37: p. 17–23.e3. [PubMed: 31378561]
44. Plummer F, et al., Screening for anxiety disorders with the GAD-7 and GAD-2: a systematic review and diagnostic metaanalysis. *Gen Hosp Psychiatry*, 2016. 39: p. 24–31. [PubMed: 26719105]
45. Jones BS, et al., Trump-induced anxiety among Latina/os. *Group Processes & Intergroup Relations*, 2021. 24(1): p. 68–87.
46. Burstein SM, et al., Facets of Mindfulness and Health Among a Predominantly Low-Income Community Sample. *Mindfulness*, 2020. 11(3): p. 771–784.
47. Lavoie JAA and Douglas KS, The Perceived Stress Scale: Evaluating Configural, Metric and Scalar Invariance across Mental Health Status and Gender. *Journal of Psychopathology and Behavioral Assessment*, 2012. 34(1): p. 48–57.
48. Dunn MG, & O'Brien KM, Psychological health and meaning in life: Stress, social support, and religious coping in Latina/Latino immigrants. *Hispanic Journal of Behavioral Sciences*, 2009. 31(2): p. 204–227.
49. Flores E, Tschann JM, Dimas JM, Bachen EA, Pasch LA, & de Groat CL, Perceived discrimination, perceived stress, and mental and physical health among Mexican-origin adults. *Hispanic Journal of Behavioral Sciences*, 2008. 30(4): p. 401–424.
50. Hill DJ, et al., Depressive symptoms in Latina mothers in an emerging immigrant community. 2019, Educational Publishing Foundation: US. p. 397–402.
51. Matthews T, et al., Social isolation, loneliness and depression in young adulthood: a behavioural genetic analysis. *Soc Psychiatry Psychiatr Epidemiol*, 2016. 51(3): p. 339–48. [PubMed: 26843197]
52. Santini ZI, et al., Social disconnectedness, perceived isolation, and symptoms of depression and anxiety among older Americans (NSHAP): a longitudinal mediation analysis. *The Lancet Public Health*, 2020. 5(1): p. e62–e70. [PubMed: 31910981]
53. Grzywacz JG, et al., The work–family challenge and mental health. *Community, Work & Family*, 2005. 8(3): p. 271–279.
54. Simmons WP, Menjivar C, and Valdez ES, The Gendered Effects of Local Immigration Enforcement: Latinas' Social Isolation in Chicago, Houston, Los Angeles, and Phoenix. *International Migration Review*, 2020. 55(1): p. 108–134.
55. Joseph TD, “My Life was Filled with Constant Anxiety”: Anti-Immigrant Discrimination, Undocumented Status, and Their Mental Health Implications for Brazilian Immigrants. *Race and Social Problems*, 2011. 3(3): p. 170–181.
56. Becerra D, et al., Immigration policies and mental health: examining the relationship between immigration enforcement and depression, anxiety, and stress among Latino immigrants. *Journal of Ethnic & Cultural Diversity in Social Work*, 2020. 29(1-3): p. 43–59.

57. Bruzelius E and Baum A, The Mental Health of Hispanic/Latino Americans Following National Immigration Policy Changes: United States, 2014-2018. *Am J Public Health*, 2019. 109(12): p. 1786–1788. [PubMed: 31622153]
58. Hatzenbuehler ML, et al., Immigration policies and mental health morbidity among Latinos: A state-level analysis. *Soc Sci Med*, 2017. 174: p. 169–178. [PubMed: 28043019]
59. Letiecq BL, et al., Central American Immigrant Mothers' Mental Health in the Context of Illegality: Structural Stress, Parental Concern, and Trauma. *Fam Community Health*, 2019. 42(4): p. 271–282. [PubMed: 31403988]
60. Negi NJ, et al., Working under conditions of social vulnerability: Depression among Latina/o immigrant horse workers. *Cultur Divers Ethnic Minor Psychol*, 2020. 26(1): p. 54–60. [PubMed: 31021147]
61. Molina Y, et al., Understanding Complex Roles of Family for Latina Health: Evaluating Family Obligation Stress. *Fam Community Health*, 2019. 42(4): p. 254–260. [PubMed: 31403986]
62. Viruell-Fuentes EA and Andrade FCD, Testing Immigrant Social Ties Explanations for Latino Health Paradoxes: The Case of Social Support and Depression Symptoms. *Journal of Latino/Latin American Studies*, 2016. 8(1): p. 77–92.
63. Dillon FR, et al., A Social Ecological Study of Psychological Distress among Recently Immigrated, Latina Young Adults. *J Lat Psychol*, 2018. 7(1): p. 39–58. [PubMed: 30800533]
64. Sanchez M, et al., Immigration Stress among Recent Latino Immigrants: The Protective Role of Social Support and Religious Social Capital. *Soc Work Public Health*, 2019. 34(4): p. 279–292. [PubMed: 31033427]

Highlights

- Latina immigrant women experience stressors associated with anxiety and depression
- Latina immigrants experience multiple stressors simultaneously
- Anxiety and depression symptoms were most strongly associated with perceived stress
- Different stressors may be associated with different mental health outcomes
- Social support was associated with less anxiety symptoms

Table 1:

Participant Demographics (N = 153)

Demographic	N/Mean	Percent/(SD)	Depression (PHQ-9) Mean Score (SD)	Anxiety (GAD-7) Mean Score (SD)
Age	40.2	(10.2)		
Under 40	77	51%	7.6 (5.0)	8.1 (5.1)
Over 40	74	49%	7.3 (5.0)	6.4 (4.82)
Years in the USA				
Less than 10	33	22%	6.5 (4.5)	6.8 (4.6)
10 – 20	86	57%	7.4 (5.0)	7.2 (5.1)
> 20	33	22%	8.1 (5.3)	7.6 (5.5)
Country of Birth				
Mexico	127	83%	7.6 (5.0)	7.5 (5.0)
El Salvador	7	5%	6.6 (3.6)	6.0(6.2)
Guatemala	5	3%	3.6 (5.4)	4.2 (6.8)
Colombia	4	3%	7.5 (4.2)	6.8 (0.5)
Other ⁱ	10	7%	7.2 (5.0)	6.4(4.6)
Language				
Monolingual Spanish	71	46%	6.7 (4.8)	6.2 (4.7)
More Spanish than English	58	38%	7.5 (5.0)	7.2 (4.9)
Bilingual Spanish/English	24	16%	8.9 (5.1)	10.2 (5.0)
Education				
Less than High School Degree	46	30%	7.4(5.1)	6.2 (5.3)
High School Degree or Higher	107	70%	7.4 (4.90)	7.6 (4.9)
Immigration Status				
Citizen or Current Visa/Permission	50	33%	7.1 (5.3)	7.6 (5.3)
Entry and/or stay without permission	77	51%	7.3 (5.0)	6.8 (5.1)
Preferred not to or did not answer	26	17%	8.1 (4.3)	7.8 (4.3)
Partner living in Home				
Currently living with partner	90	59%	6.8 (4.7)	6.7 (4.8)
Not living with a partner	63	42%	8.2 (5.3)	8.0 (5.2)
Monthly Incomeⁱⁱ				
Under \$2200	70	47%	8.0 (5.1)	7.4(5.2)
\$2200 or more	80	53%	6.9 (4.8)	6.8 (4.7)
Depression Symptom (PHQ-9) Severityⁱⁱⁱ			7.4 (4.0)	
None (0-4)	54	35%		
Mild (5-9)	54	35%		
Moderate (10-14)	30	20%		
Moderate to Severe (15-27)	15	10%		
Anxiety Symptom (GAD-7) Severity^{iv}				7.2 (5.0)

Demographic	N/Mean	Percent/(SD)	Depression (PHQ-9) Mean Score (SD)	Anxiety (GAD-7) Mean Score (SD)
None (0-4)	53	35%		
Mild (5-9)	51	33%		
Moderate (10-14)	33	22%		
Severe (15-21)	16	10%		

ⁱ United States (N=2), Honduras (N=2), Venezuela (N=2), Argentina (N=1), Ecuador (N=1), Peru (N=1)

ⁱⁱ HHS Poverty Line for 4-person Home: \$2145

ⁱⁱⁱ PHQ-9 refers to the Patient Health Questionnaire-9, a measure of depression symptom severity

^{iv} GAD-7 is the Generalized Anxiety Score-7 module which assesses anxiety symptom severity

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Table 2.

Adjusted Associations of Social Support and Stressors with Depression (**PHQ-9**) and Anxiety (**GAD-7**) Symptom Scores (N=153)*

	Mean (SD)	Depression Coef. ¹	Depression 95% CI	Anxiety Coef.	Anxiety 95% CI
<i>Social Support</i>					
Social Ties	13.9 (5.2)	-0.2	(-0.4, -0.1)	-0.2	(-0.4, -0.1)
Emotional Support	2.1 (1.1)	-1.9	(-2.5, -1.2)	-1.5	(-2.2, -0.9)
Affectionate Support	3.0 (1.0)	-1.8	(-2.5, -1.1)	-1.6	(-2.3, -0.9)
Positive Social Interactions	2.5 (1.2)	-1.6	(-2.2, -1.0)	-1.5	(-2.1, -0.9)
<i>Stressors</i>					
Perceived Stress	6.4 (3.1)	1.0	(0.8, 1.2)	0.9	(0.7, 1.1)
Social Isolation	51.5 (8.5)	0.4	(0.3, 0.4)	0.3	(0.2, 0.4)
Acculturation Stress	7.9 (4.0)	0.4	(0.2, 0.6)	0.4	(0.2, 0.6)
Family Separation Stress	6.4 (1.9)	0.7	(0.3, 1.1)	0.8	(0.4, 1.2)
Law/Immigration Enforcement Stress	4.4 (2.8)	0.6	(0.4, 0.9)	0.6	(0.3, 0.8)
Basic Needs Stress	5.9 (2.3)	0.9	(0.6, 1.2)	1.1	(0.8, 1.4)
Discrimination	1.6 (1.3)	1.2	(0.6, 1.8)	1.1	(0.5, 1.7)

* All associations found to be significant at the level of $p < 0.01$

Table 3.

Adjusted Models of Social Support and Stressors with Depression (PHQ-9) and Anxiety (**GAD-7**) Symptom Scores (N=153)

Depression Symptoms:	Adj. Coef.	95% CI	p-value
<i>Model A: Social Support</i>			
Social Ties	-0.03	(-0.2, 0.1)	0.7
Emotional Support	-1.1	(-1.9, -0.2)	0.02 *
Affectionate Support	-0.6	(-1.5, 0.3)	0.2
Positive Social Interactions	-0.7	(-1.5, 0.1)	0.1
<i>Model B: Stressors</i>			
Perceived Stress	0.6	(0.4, 0.9)	< 0.001 *
Social Isolation	0.2	(0.1, 0.2)	< 0.001 *
Acculturation Stress	0.01	(-0.2, 0.2)	0.9
Family Separation Stress	-0.02	(-0.4, 0.3)	0.9
Law/Immigration Enforcement Stress	0.3	(0.01, 0.5)	0.04 *
Basic Needs Stress	0.1	(-0.2, 0.4)	0.6
Discrimination	0.4	(-0.1, 0.9)	0.2
Anxiety Symptoms:	Adj. Coef.	95% CI	p-value
<i>Model C: Social Support</i>			
Social Ties	-0.1	(-0.2, 0.1)	0.4
Emotional Support	-0.6	(-1.5, 0.3)	0.2
Affectionate Support	-0.6	(-1.5, 0.4)	0.2
Positive Social Interactions	-0.8	(-1.6, 0.0)	0.1
<i>Model D: Stressors</i>			
Perceived Stress	0.6	(0.4, 0.9)	< 0.001 *
Social Isolation	0.1	(-0.04, 0.1)	0.3
Acculturation Stress	0.02	(-0.2, 0.2)	0.8
Family Separation Stress	0.2	(-0.2, 0.5)	0.4
Law/Immigration Enforcement Stress	0.1	(-0.2, 0.3)	0.7
Basic Needs Stress	0.5	(0.2, 0.9)	0.004 *
Discrimination	0.2	(-0.3, 0.8)	0.4

* Found to be significant at the level of $p < 0.05$

Table 4.

Full Adjusted Model of Social Support and Stressors with Depression (**PHQ-9**) and Anxiety (**GAD-7**)
Symptom Scoresⁱ (N=153)

Depression Symptoms:	Adj. Coef.	95% CI	p-value
<i>Social Support</i>			
Social Ties	-0.04	(-0.2, 0.1)	0.5
Emotional Support	0.3	(-0.4, 1.1)	0.4
Affectionate Support	0.1	(-0.7, 0.8)	0.9
Positive Social Interactions	-0.6	(-1.3, 0.8)	0.1
<i>Stressors</i>			
Perceived Stress	0.6	(0.4, 0.9)	0.000 *
Social Isolation	0.2	(0.1, 0.2)	0.003 *
Acculturation Stress	-0.01	(-0.2, 1.7)	0.9
Family Separation Stress	-0.1	(-0.4, 3.0)	0.7
Law/Immigration Enforcement Stress	0.3	(0.001, .5)	0.049 *
Basic Needs Stress	0.1	(-0.2, 0.5)	0.4
Discrimination	0.4	(-0.2, 0.9)	0.2
Anxiety Symptoms:	Adj. Coef.	95% CI	p-value
<i>Social Support</i>			
Social Ties	-0.1	(-0.2, 0.5)	0.2
Emotional Support	0.6	(-0.2, 1.3)	0.2
Affectionate Support	0.1	(-0.8, 0.9)	0.9
Positive Social Interactions	-0.8	(-1.5, 0.9)	0.03 *
<i>Stressors</i>			
Perceived Stress	0.6	(0.3, 0.9)	<0.001 *
Social Isolation	0.04	(-0.144)	0.4
Acculturation Stress	-0.01	(-0.2, 1.8)	0.9
Family Separation Stress	0.1	(-0.3, 0.5)	0.6
Law/Immigration Enforcement Stress	0.1	(-0.2, 0.3)	0.7
Basic Needs Stress	0.6	(0.2, 0.9)	< 0.001 *
Discrimination	0.2	(-0.3, 0.8)	0.4

ⁱModels include Social Ties, Emotional Support, Affectionate Support, Positive Social Interactions, Perceived Stress, Social Isolation, Acculturation Stress, Family Separation Stress, Law/Immigration Enforcement Stress, Basic Needs Stress, and Discrimination

* Found to be significant at the level of $p = 0.05$