Journal of Immigrant and Minority Health (2019) 21:14–20
https://doi.org/10.1007/s10903-018-0714-9

ORIGINAL PAPER

Examining Difference in Immigration Stress, Acculturation Stress and Mental Health Outcomes in Six Hispanic/Latino Nativity and Regional Groups

Richard C. Cervantes[1] · **Karina A. Gattamorta**[2] · **Jodi Berger-Cardoso**[3]

Published online: 27 February 2018

Abstract
Little is known about the specific behavioral health impact of acculturation stressors that affect Hispanic/Latino immigrant sub-groups. These immigration-related stressors and traumatic events may have differential impact on depression depending on country/region of origin. Using a measure of immigration and acculturation stress, the current study sought to determine differences in the impact of stress on six sub-groups of Hispanic immigrants. Data on stress and depression were examined using a large, representative adult immigrant sample ($N=641$). Controlling for age, gender and years in the US, factorial analysis of covariance revealed significant differences on total Hispanic Stress Inventory 2 (HSI2) stress appraisal scores based on country/region of origin. Pair wise comparisons between country/region of origin groups revealed that Mexicans had higher levels of stress compared to Cuban or Dominican immigrants. Several patterns of differential stress were also found within sub-domains of the HSI2. Using regression models, HSI2 stress appraisals and their interaction with country of origin proved to not be significant predictors of depression (PHQ9), while gender and age were significant. Differences in HSI2 stress that are based on nativity may be moderated by cultural resilience that ultimately serves a protective role to prevent the onset of depression.

Keywords Acculturation stress · Hispanics · Latinos · Depression

Introduction

Health disparities among ethnic minority populations are a public health concern [31]. Included in the context of health disparities are problems related to behavioral health and mental health. For example, Hispanic/Latinos living in the United States have significantly higher scores on measures of mental health problems (depression) when compared to their non-Hispanic white counterparts; U.S. born Latinos demonstrate greater mental health symptom severity than do immigrant Latinos [3]. At the same time, Hispanic/Latinos who immigrate to the United States prior to adolescence and after age 35 are at a particularly high risk for depression [2].

✉ Karina A. Gattamorta
kgattamorta@miami.edu

[1] Behavioral Assessment, Inc., Beverly Hills, CA, USA

[2] University of Miami, Coral Gables, FL, USA

[3] University of Houston, Houston, TX, USA

Factors Impacting Mental Health Among Latino Immigrants

The Hispanic/Latino population in the US has grown exponentially over the past 4 decades. While earlier waves of immigrants established themselves in populous cities along the West and East coasts, immigrants are now settling in small cities and rural areas of the Midwest Ozarks and Atlantic Southeast [15, 29]. Further, Mexicans made up 52% of all unauthorized immigrants in 2014, though their numbers have been declining in recent years. There were 5.8 million Mexican unauthorized immigrants living in the U.S. that year, down from 6.4 million in 2009 [17]. The physical and emotional demands of immigrating to the U.S. are well documented [26], as have been the effects of parental deportation among Latino families [11].

Despite the stressful period of adjustment to a new set of cultural and linguistic changes, immigrants show resilience and better behavioral health compared to U.S.-born Latinos. This ''immigrant paradox'' primarily results from the progressive loss of traditional culture and associated

negative health consequences associated with increasing generations or time in the U.S [32]. At the same time Leao et al. [20] and others suggest that dissimilar economic, educational and cultural backgrounds among refugees and other immigrant groups contributes to the difficulty to identify the contribution of pre-migration and post-migration stress to mental health. Generally in cross national studies, women and immigrants and refugees who migrate to higher income countries are at greater risk for mental health problems. PTSD has also been well documented in studies of refugees with experiences of high pre-migration stress. Hollander et al. [13] found refugee immigrants, both men and women, to have a higher likelihood of developing mental illness requiring psychotropic medication when compared to same country non refugee immigrants.

Acculturative Stress

The term *acculturative stress* refers to the distress that individuals experience as a result of tension between maintaining the behaviors and characteristics of their country of origin while concurrently adopting those from the majority culture [9]. Acculturative stressors are not unique to Latino populations and may include: pressure to learn a new language, balancing differences in cultural and gender role values, and adjusting to new employment expectations [4, 30]. Stress itself is conceptualized as behavioral and emotional reaction(s) to acute or chronic life changing events [19] and occurs when the demands of the events exceed the individuals' perceived personal and social resources to deal with these changes. The stress-illness paradigm offers one way to conceptualize the relationship between social stress and health [12, 25].

Research studies on acculturation and health status have been mixed, with some studies showing a positive relation between acculturation and health, while others demonstrate an inverse effect on health outcomes [14]. Furthermore, there is often considerable variation in these outcomes depending on factors such as: country of origin, age, gender, years lived in the United States, education, and income [18]. For example, some research shows differences in health outcomes across a number of Latino/a subpopulations [18], with some subgroups experiencing higher morbidity and mortality rates [22], diabetes and hypertension [5, 24], psychiatric disorders [1, 3] and substance use disorders [28]. One potential factor driving these different outcomes is differential experiences of acculturative stress.

Theoretical/Conceptual Framework

Using the stress-illness framework [19, 25], Cervantes and colleges [10] identified ten unique domains of acculturative stress among immigrant Latinos and eight domains among U.S.-born Latinos. External factors, such as discrimination, immigration and occupational stress, as well as internal factors like marital acculturation gap, language, health, and parenting stress are examples of diverse aspects of acculturation stress that are related to psychological health in this population [10]. Negative experiences in one or more of these areas of stress heighten psychological distress. Mediators of stress may include country of origin, educational level, and region of the United States. For example, research suggests that some Latino subgroups experience greater discrimination stress than do other immigrant groups [23], yet there is limited research on measuring differences other acculturation related among Latino immigrant subgroups.

Using the stress-illness theoretical framework, the current study attempts to fill the gap in the current science by identifying differences in acculturative stress across several large Latino immigrant subgroups. Our analysis explored individual subgroup differences across several domains of acculturative stress. We first examined whether variations in acculturation stressors would exist by country of origin as measured by the validated Hispanic Stress Inventory (2). Secondly the goal of this study was to determine how demographic and other factors such as gender and time in the US might moderate group differences in acculturation stress. We expected that factor such as gender and years in the US would relate to acculturation stress exposure. Results are intended to shed light on the specific acculturation challenges experienced by different immigrant sub groups and provide researchers and practitioners with additional insights regarding immigrant mental health. The current study used data from a national survey to validate acculturative stress among US and foreign born Latinos in 4 major U.S. cities.

Method

The cross sectional research design included data collection with large samples of immigrant Hispanics in four research sites: Los Angeles, CA; Miami, FL; El Paso, TX; and Boston (Lawrence), MA. The research sites for this investigation were carefully selected to afford a sample that was representative of the heterogeneity of U.S. Hispanics and national geography, realizing that stress experiences in each of the major sub ethnic groups would vary based on site. For this study, a balance of early-adult group (age 18–25), middle-aged parenting adults (age 26–55), and older adults (age 56 and up) in each site were required in the sampling design. The research aimed to be inclusive of a wide age range. Further, given that approximately 36% of the U.S. Hispanic population is foreign born [7], we attempted to approximate this proportion at each site. Language use (Spanish preference) was used as a proxy for immigrant status in our recruitment phase.

However, demographic data specific to immigrant status, nativity, length of time in the U.S. and preferred language use in the home were collected for the current analysis.

Procedures and Consent

Site data coordinators worked directly with staff at community colleges, local Parent Teacher Association (PTA) groups, and senior centers for participant recruitment. Signed informed consent was used. Group administration of the HSI2 research survey protocol was carried out by trained site coordinators and trained proctors. A financial incentive of $15 was presented to participants in each group in the form of a gift card.

Participants

A total of $N = 1808$ subjects volunteered for participation and completed the survey protocol. Data from participants who did not identify as Hispanic ($n = 25$) or who did not complete 11 or more (> 5%) HSI2 appraisal items ($n = 267$) were excluded from the analysis. The final sample consisted of 575 US-born participants and 941 immigrant participants ($N = 1,516$). The majority of the final sample was female (57%) and represented individuals from at least ten Latin American national origins. Immigrant participants ($M = 48.06$ years, *SD* 18.60) were significantly older than US-born participants ($M = 29.03$ years, *SD* 13.93), $t(1,503) = 21.07$, $p < 0.001$. Further, immigrants were more likely to report having children (80%) than US-born participants (40%), $\chi^2(1, N = 1513) = 249.86$, $p < 0.001$. US-born participants reported completing more years of education ($M = 12.54$ years, *SD* 2.34) than immigrants ($M = 10.90$ years, *SD* 4.07), $t(1,483) = 8.71$, $p < 0.001$. Table 1 summarizes the key demographic characteristics for the n = 941 immigrants included in the data analysis of this study.

Measures

All study measures were available in English and Spanish language versions. Both the US-born and immigrant participants completed all 242 Hispanic Stress Inventory-Version 2 items. For each HSI2 item, participants indicated whether they had experienced the stressor (*Yes*/*No*). If participants reported experiencing a stressor, then he or she rated how stressful the event was on a 5-point Likert scale (1 = *Not at all worried / tense*; 2 = *A little worried / tense*; 3 = *Moderately worried / tense*; 4 = *Very worried/ tense*; 5 = *Extremely worried/ tense*). For items where participants reported they had not experienced a stressor, the appraisal score was coded to 1 (*not at all worried/ tense*). Participants were given the choice to complete the all measures in either Spanish or English, and 63% of participants elected to complete the measure in Spanish. In addition to the HSI2, participants completed the Patient Health Questionnaire-9 (PHQ-9; [16]) and the Brief Symptom Inventory (BSI). The BSI assesses how distressing participants found 53 psychological symptoms in the past 7 days (*not at all* = 0 to *extremely* = 4). Responses were used to calculate the Global Severity Index (GSI) and the somatization, depression, anxiety, phobic anxiety and interpersonal sensitivity dimensions. The PHQ-9 was used to assess the severity of depression symptoms. Using a scale ranging from 0 (*not at all*) to 3 (*nearly every day*), participants indicated how often they were bothered by nine symptoms of depression. A sum composite was calculated with higher scores indicating more severe symptoms of depression. Standardized Spanish language versions of the BSI and PHQ-9 were obtained from the publishers of those measures.

Data Analysis

A factorial analysis of covariance was used to examine differences based on country/region of origin on the various types of HSI2 stress scores after controlling for age, gender, and years in the US. In each analysis, the HSI2 score was used as the outcome variable, country/region of origin and

Table 1 Characteristics of the sample by country/region of origin

Characteristic	Mexican	Puerto Rican	Cuban	Central American	South American	Dominican
Female	271	21	122	72	60	114
(*N*, %)	(69%)	(54%)	(58%)	(67%)	(65%)	(60%)
Age	46.22	43.87	55.23	41.69	53.24	51.91
(*M, SD*)	(17.39)	(20.46)	(18.02)	(16.65)	(18.36)	(20.08)
Years in US	20.09	23.33	22.18	17.34	23.01	19.50
(*M, SD*)	(13.22)	(13.08)	(15.97)	(13.85)	(14.01)	(12.31)

No significant differences were found by country/region of origin on the proportion of females in the sample. When examining years in US, no significant pairwise differences were found using Tukey's HSD. When examining age, Cubans were significantly older than Mexican, Puerto Ricans, and Central Americans, and South Americans and Dominicans were significantly older than Mexicans and Central Americans using Tukey's HSD

gender were included as between-subjects factors, and age and years in the US were included in the model as covariates.

We were also interested in whether the HSI2 stress scale was related to depression in this sample. To examine this relationship, a negative binomial regression with a log link function was used to examine gender, country/region of origin, age, total HSI2 score, years in the US, and the interaction of country/region of origin with total stress as predictors of depression.

Results

Data analysis examined differences in types of HSI2 acculturation stress between immigrants based on their country or region of origin after controlling for age, gender, and years in the US. The results presented below are organized by the total HSI2 score as well as by subscale.

Significant differences on total HSI2 stress appraisals were found based on country/region of origin (F [5, 517] = 6.25, $p < 0.001$). Age (F [1, 517] = 0.97, $p = 0.326$), years in the US (F [1, 517] = 1.30, $p = 0.254$), and gender (F [1, 517] = 0.86, $p = 0.354$) were not statistically significant. Pair wise comparisons between country/region of origin groups revealed that Mexicans (M = 117.19, *SD* 45.00) had significantly higher levels of total stress when compared to Cubans (M = 98.90, *SD* 33.03) and Dominicans (M = 99.00, *SD* 18.96). No other pair wise comparisons were statistically significant.

Differences in types of stress on the various HSI2 subscales between immigrants based on their country of region of origin using the same control variables were also examined. The results of this analysis are displayed in Table 2. We found that Mexicans had significantly higher levels of stress compared to Cubans and Dominicans on Parental Stress [$F(5, 760) = 4.48$, $p < 0.001$], Marital Stress [$F(5, 765) = 4.23$, $p = 0.001$], and Family Stress [$F(5, 826) = 4.08$, $p = 0.001$]. Mexicans also had higher levels of stress compared to Cubans on Discrimination Stress [$F(5, 804) = 2.38$, $p = 0.037$], higher levels compared to Cubans, Dominicans, and Central Americans on Immigration Stress [$F(5, 800) = 12.75$, $p < 0.001$], Health Stress [$F(5, 783) = 8.48$, $p < 0.001$], and Marital/Acculturation Stress [$F(5, 783) = 5.31$, $p < 0.001$], and higher levels compared to Cubans and South Americans on Pre-migration Stress [$F(5, 786) = 4.38$, $p = 0.001$]. We also found that Dominicans had significantly higher levels of stress compared to Cubans, Puerto Ricans, and South Americans on Language Stress [$F(5, 801) = 4.99$, $p < 0.001$] (Table 2).

To determine whether the HSI2 stress scale was related to depression in this sample, a negative binomial regression with a log link function was used to examine gender, country/region of origin, age, Total HSI2 score, years in the US, and

Table 2 HSI2 subscale appraisal scores by country/region of origin

	Parental *M* (*SD*)	Marital *M* (*SD*)	Occupational *M* (*SD*)	Discrimination *M* (*SD*)	Immigration *M* (*SD*)	Marital acculturation *M* (*SD*)	Health *M* (*SD*)	Language *M* (*SD*)	Premigration *M* (*SD*)	Family *M* (*SD*)	Total *M* (*SD*)
Mexican	17.78 (8.60)	15.83 (7.98)	18.11 (8.45)	12.87 (5.24)	13.41 (7.43)	11.09 (4.68)	13.23 (7.08)	9.97 (5.21)	9.80 (5.92)	7.93 (3.95)	115.17 (44.15)
Puerto Rican	14.25 (3.93)	14.28 (5.66)	16.14 (6.19)	12.37 (4.46)	10.38 (3.60)	10.06 (2.92)	9.35 (2.25)	6.95 (2.16)	6.92 (1.89)	6.50 (2.50)	89.29 (15.29)
Cuban	15.65 (7.61)	12.95 (4.49)	16.94 (8.32)	11.34 (3.94)	9.75 (2.23)	10.10 (2.98)	11.14 (5.42)	8.89 (4.93)	8.44 (4.16)	6.78 (3.57)	97.95 (32.28)
Central American	14.66 (5.28)	13.54 (6.26)	16.46 (6.67)	12.35 (4.85)	10.68 (4.20)	9.45 (1.56)	10.18 (4.35)	8.99 (4.88)	8.28 (4.27)	7.03 (2.88)	100.28 (25.24)
South American	15.62 (5.78)	15.13 (7.43)	19.44 (9.58)	12.51 (5.78)	11.43 (5.62)	10.57 (3.13)	13.05 (7.79)	8.82 (4.43)	8.12 (4.04)	7.74 (4.09)	111.94 (39.93)
Dominican	14.83 (4.25)	13.22 (4.53)	17.22 (6.82)	12.11 (3.93)	9.98 (2.55)	9.78 (2.20)	9.87 (4.69)	11.42 (5.55)	9.17 (4.30)	6.72 (2.37)	99.10 (18.73)

the interaction of country/region of origin with total stress as predictors of depression (see Table 3). The omnibus model was statistically significant χ^2 (15, $N=512$) = 1010.45, $p<0.001$. Gender ($p=0.002$), age ($p<0.001$) and acculturative stress as measured by the HSI total score ($p<0.001$) were significant predictors of depression while country/region of origin ($p=0.208$), years in the US ($p=0.780$), and the interaction of country/region of origin and total stress ($p=0.154$) were not significant. Specifically, females had higher levels of depression compared to males, and the relationships between age and depression and stress and depression were positive indicating that older participants and those with higher levels of total stress also reported higher levels of depression.

Discussion

The mental health of immigrants and refugees is dependent on a multiplicity of pre and post migration conditions, as well as a variety of personal and familial attributes. Studies of immigrant and refugee groups often point to the deleterious impact of immigration on mental health, yet specific studies of acculturation related stressors in samples of US Latino immigrants are space. The current study begins to fill a gap in the knowledge specific to acculturation and has benefit of examining acculturation stress in a wide range of Latino nativity immigrant groups.

Specifically our results found Mexican immigrants to be exposed to high levels of acculturation stress when compared to groups from other countries. Recent changes in immigrations and policy enforcement in larger US cities, especially those in the Southwest where larger numbers of Mexican immigrants reside, may explain such differences in acculturation stress. To some extent, higher levels of acculturation stress in the parenting, family and discrimination domains among Mexican immigrants may be explained by more intense immigration policy enforcement in high density Mexican communities. For example, like with acculturative stress, cultural and social factors have also been associated with depression in Latino immigrants. In a sample of Mexican parents separated from their children by migration, Rusch and Reyes [27] found that difficult reunifications with children were associated with high acculturative stress and depression symptoms. Similarly, cultural factors such as family conflict and experiences with discrimination were related to higher lifetime histories of major depression disorder in Latina women [21].

Contributions to the Literature

Our findings related to the interplay of acculturation stress and depression in distinct nativity groups is a contribution to the current state of knowledge immigrant mental health.

Table 3 Model summary results

	Parental *F* (*p*)	Marital *F* (*p*)	Occupational *F* (*p*)	Discrimination *F* (*p*)	Immigration *F* (*p*)	Marital acculturation *F* (*p*)	Health *F* (*p*)	Language *F* (*p*)	Premigration *F* (*p*)	Family *F* (*p*)	Total *F* (*p*)
Country/region of origin	4.48 (<0.001)	4.43 (0.001)	1.92 (0.090)	2.38 (0.970)	12.75 (<0.001)	5.31 (<0.001)	8.48 (<0.001)	4.99 (<0.001)	4.38 (0.001)	4.08 (0.001)	6.25 (<0.001)
Age	0.06 (0.800)	0.01 (0.936)	4.24 (0.040)	0.18 (0.674)	1.02 (0.313)	0.43 (0.512)	0.67 (0.412)	30.15 (<0.001)	11.57 (0.001)	0.00 (0.983)	0.97 (0.326)
Gender	0.27 (0.601)	2.51 (0.113)	1.16 (0.329)	0.23 (0.632)	1.38 (0.241)	1.55 (0.214)	2.20 (0.138)	0.68 (0.409)	0.16 (0.692)	4.03 (0.045)	0.86 (0.354)
Years in the US	10.15 (0.002)	1.76 (0.186)	0.15 (0.697)	0.00 (0.970)	3.41 (0.065)	0.03 (0.863)	3.22 (0.073)	33.63 (<0.001)	2.04 (0.154)	0.02 (0.876)	1.30 (0.254)

Most interesting was the fact that gender and age were stronger mediators of PHQ9 depression despite the higher HSI2 acculturation stress among Mexicans. Consistent with other international studies of mental health and immigrants, gender (female) was associated with poorer mental health across the sample. Changing post migration gender roles, the loss of social, familial and emotional ties may impact women immigrants more than men. Further studies of these relationships are sorely needed. We also believe that individual, family and community resilience (i.e. extended family supports) may be an important factor in helping maintain positive mental health, regardless of country of origin. These resources and effective strategies help the family to overcome the stress of navigating a new culture, strained family and work roles, limited access to formal resources, and a system filled with anti-immigrant sentiment and institutionalized racism [6, 8]. At the same time, our results suggest that females and older Latino immigrants who experience higher levels of acculturation stress as measured by the HSI2 may be more vulnerable to mental health problems, including PHQ9 depression. Social roles that are dictated by culture may be more vulnerable to the acculturation process among Latinas and older immigrants. Clearly more gender and age focused acculturation and mental health studies are needed help clarify these findings.

Overall, with some exceptions noted for female and older Latino immigrant adults, our findings are also consistent with data on the immigrant paradox. Strong personal, social, familial and community resiliency factors can buffer or mediate the impact of negative acculturation stressors. More studies of personal and family resilience as a mediator of Latino immigrant mental health are needed.

Our study is not without limitations. Differences in post migration acculturation stress could be confounded by pre migration social and economic factors which the authors did not control for. Additionally, no sub ethnic group differences within data collection sites were examined. Such differences may have shed light on the impact of geography and local immigration policy enforcement on acculturation stress.

Acknowledgements This research was supported by National Institute of Minority Health and Health Disparities 2R44MD004792-02/Grant No. 10671624 to the first author and by the National Institute of Minority Health and Health Disparities Award U54MD002266 supporting the second author. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

References

1. Alegría M, Canino G, Stinson FS, Grant BF. Nativity and DSM-IV psychiatric disorders among Puerto Ricans, Cuban Americans, and non-Latino Whites in the United States: results from the National Epidemiologic Survey on alcohol and related conditions. J Clin Psychiatry. 2006;67(1):56–65. https://doi.org/10.4088/JCP.v67n0109.
2. Alegría 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(1):68–75. https://doi.org/10.2105/AJPH.2006.087205.
3. Alegría M, Canino G, Shrout PE, Woo M, Duan N, Vila D, Meng X-L. Prevalence of mental illness in immigrant and non-immigrant U.S. Latino groups. Am J Psychiatry. 2008;165(3):359–69. https://doi.org/10.1176/appi.ajp.2007.07040704.
4. Araújo BY, Borrell LN. Understanding the link between discrimination, mental health outcomes, and life chances among Latinos. Hisp J Behav Sci. 2006;28:245–66. https://doi.org/10.1177/0739986305285825.
5. Arroyo-Johnson C, Mincey KD, Ackermann N, Milam L, Goodman MS, Colditz GA. Racial and ethnic heterogeneity in self-reported diabetes across Hispanic subgroups, National Health Interview Survey, 1997–2012. Prev Chronic Dis. 2016;13:E10. https://doi.org/10.5888/pcd13.150260.
6. Bernal G, Rodriguez D. Advances in Latino family research: cultural adaptations of evidence-based interventions. Fam Process. 2009;48(2):169. https://doi.org/10.1111/j.1545-5300.2009.01275.x.
7. Brown A, Patten E. Statistical portrait of Hispanics in the United States, 2012. Washington, DC: Pew Research Center. 2014. http://www.pewhispanic.org/2014/04/29/statistical-portrait-of-hispanics-in-theunited-states-2012.
8. Castro FG, Garfinkle J, Naranjo D, Rollins M, Brook JS, Brook DW. Cultural traditions as "protective factors" among Latino children of illicit drug user. J Subst Use Misuse. 2007;42(4):621–42. https://doi.org/10.1080/10826080701202247.
9. Cervantes RC, Castro FG. Stress, coping and Mexican American mental health: a systematic review. Hisp J Behav Sci. 1985;7(1):1–73. https://doi.org/10.1177/07399863850071001.
10. Cervantes RC, Fisher DG, Padilla AM, Napper LE. The Hispanic Stress Inventory Version 2: improving assessment of acculturative stress. Psychol Assess. 2016;28(5):509–22. https://doi.org/10.1037/pas0000200.
11. Chaudry A, Fortuny K. A comprehensive review of immigrant access to health and human services. 2011. http://www.urban.org/publications/412425.html.
12. Ensel WM. Important life events and depression among older adults: the role of psychological and social resources. J Aging Health. 1991;3(4):546–66. https://doi.org/10.1177/089826439100300407.
13. Hollander A-C, Bruce D, Burström B, Ekblad S. Gender-related mental health differences between refugees and non-refugee immigrants: a cross-sectional register-based study. BMC Public Health. 2011;11:180. https://doi.org/10.1186/1471-2458-11-180.
14. Hunt LM, Schneider S, Comer B. Should acculturation be a variable in health research? A critical review of research on US Hispanics. Social Sci Med. 2004;59(5):973–86. https://doi.org/10.1016/j.socscimed.2003.12.009.
15. Jones R. Immigrants outside megalopolis: ethnic transformation in the heartland. Lehman: Rowman & Littlefield; 2008.
16. Kroenke K, Spitzer RL, Williams JBW. The PHQ-9: validity of a brief depression measure. J Gen Intern Med. 2001;16(9):606–13. https://doi.org/10.1046/j.1525-1497.2001.016009606.x.
17. Krogstad MJ, Passel JS, Cohn D. 5 facts about illegal immigration in the U.S., Online Report. Pew Hispanic Research Center. 2016. http://www.pewresearch.org/fact-tank/2016/11/03/5-facts-about-illegal-immigration-in-the-u-s/.
18. Lara M, Gamboa C, Kahramanian MI, Morales L, Hayes-Bautista DE. Acculturation and Latino health in the United States: a review of the literature and its sociopolitical context. Annu Rev Public

Health. 2005;26(1):367–97. https://doi.org/10.1146/annurev.publhealth.26.021304.144615.
19. Lazarus RS, Folkman S. Stress, appraising and coping. New York: Springer; 1984.
20. Leao TS, Sundquist J, Frank G, Johansson LM, Johansson SE, Sundquist K. Incidence of schizophrenia or other psychoses in first- and second-generation immigrants: a national cohort study. J Nerv Mental Dis. 2006;194(1):27–33. https://doi.org/10.1097/01.nmd.0000195312.81334.81.
21. Lorenzo-Blanco EI, Cortina LM. Latino/a depression and smoking: an analysis through the lens of culture, gender and ethnicity. Am J Community Psychol. 2013;51(3–4):332–46. https://doi.org/10.1007/s10464-012-9553-3.
22. Martinez-Tyson D, Barnett Pathak E, Soler-Vila H, Flores AM. Looking under the Hispanic umbrella: cancer mortality among Cubans, Mexicans, Puerto Ricans, and other hispanics in Florida. J Immigr Minor Health. 2009;11(4):249–57. https://doi.org/10.1007/s10903-008-9152-4.
23. Otiniano Verissimo AD, Grella CE, Amaro H, Gee GE. Discrimination and substance use disorders among Latinos: the role of gender, nativity and ethnicity. Am J Public Health. 2014;104(8):1421–8. https://doi.org/10.2105/AJPH.2014.302011.
24. Pabon-Nau L, Cohen A, Meigs J, Grant RW. Hypertension and diabetes prevalence among U.S. Hispanics by country of origin: The National Health Interview Survey 2000–2005. J Gen Intern Med. 2010;25(8):847–52. https://doi.org/10.1007/s11606-010-1335-8.
25. Pearlin LI. The sociological study of stress. J Health Soc Behav. 1989;30(3):241–56. https://doi.org/10.2307/2136956.
26. Pew Hispanic Center. Statistical Portrait of Hispanics in the United States, 1980–2013. 2013. http://www.pewhispanic.org/2015/05/12/statistical-portrait-of-hispanics-in-the-united-states-2013-key-charts/.
27. Rusch D, Reyes K. Examining the effects of Mexican serial migration and family separations on acculturative stress, depression, and family functioning. Hisp J Behav Sci. 2013;35(2):139–59. https://doi.org/10.1177/0739986312467292.
28. SAMHSA: Substance Abuse and Mental Health Services Authority. Hispanic subgroup differences in rates of substance use treatment need and receipt. Washington D.C.: U.S. Department of Health and Human Services, The National Survey on Drug Use and Health. 2013. http://www.samhsa.gov/data/sites/default/files/spot128-hispanic-treatment-2013/spot128-hispanic-treatment-2013.pdf. Accessed 21 Sept 2016.
29. Smith HA, Furuseth O. Latinos in the New South: transformations of place. Aldershot: Ashgate; 2006.
30. Torres L, Driscoll MW, Voell M. Discrimination, acculturation, and acculturative stress, and Latino psychological distress: a moderated mediation model. Cult Divers Ethnic Minor Psychol. 2012;18(1):17–25. https://doi.org/10.1037/a0026710.
31. U.S. Department of Health and Human Services. The Secretary's Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2020. Phase I report: Recommendations for the framework and format of Healthy People 2020 [Internet]. Section IV: Advisory Committee findings and recommendations [cited 2010 January 6]. 2010. http://www.healthypeople.gov/sites/default/files/PhaseI_0.pdf.
32. Vega WA, Rodriguez MA, Gruskin E. Health disparities in the Latino population. Epidemiol Rev. 2009;31(1):99–112. https://doi.org/10.1093/epirev/mxp008.