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## Prevalence and Correlates of Perceived Ethnic Discrimination in the Hispanic Community Health Study/Study of Latinos Sociocultural Ancillary Study

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### Abstract

Empirical studies examining perceived ethnic discrimination in Latinos of diverse background groups are limited. This study examined prevalence and correlates of discrimination in a diverse sample of U.S. Latinos (N=5,291) from the multi-site Hispanic Community Health Study/Study of Latinos (HCHS/SOL) and HCHS/SOL Sociocultural Ancillary Study. The sample permitted an examination of differences across seven groups (Central American, Cuban, Dominican, Mexican, Puerto Rican, South American, and Other/Multiple Background). Most participants (79.5%) reported lifetime discrimination exposure and prevalence rates ranged from 64.9% to 98% across groups. Structural Equation Models (SEM) indicated that after adjusting for sociodemographic covariates most group differences in reports of discrimination were eliminated. However, Cubans reported the lowest levels of discrimination, overall among all groups. Furthermore, regional effects were more important than group effects. Participants from Chicago reported the highest levels of discrimination in comparison to other regions. Group differences among Latinos appear to be primarily a function of sociodemographic differences in education, income, and

acculturation. In addition, differences in exposure to discrimination may be tied to variables associated with both immigration patterns and integration to U.S. culture. Results highlight the importance of considering historical context and the intersection of discrimination and immigration when evaluating the mental health of Latinos.

### Keywords

Latinos; ethnic discrimination; acculturation; within group differences; regional differences

Hispanics/Latinos<sup>1</sup>, the largest and fastest growing U.S. ethnic minority group (U.S. Census Bureau, 2011), includes individuals from different cultural background groups (Guarnaccia, Martinez, & Acosta, 2005; Guarnaccia et al., 2007). Differences in mental and physical health outcomes among U.S. Latino background groups have been documented and indicate Puerto Ricans report relatively poorer health; whereas Mexicans report relatively better health and Cubans demonstrate advantages for some health indices and disadvantages for others (Daviglius et al., 2012; Zsembik & Fennell, 2005). These differences in health status among Latino groups may, in part, reflect differential exposure to racism or ethnic discrimination, a psychosocial stressor with documented links to physical and mental health (Brondolo et al., 2011; Pascoe & Richman, 2009; Williams & Mohammed, 2009). Our aim is to investigate potential differences in experiences of discrimination among a population-based sample of Latino from different background groups.

This examination of background group differences in discrimination is conducted within the context of intersectionality theory (Cole, 2009; Viruell-Fuentes, Miranda, & Abdulrahim, 2012). A key proposition of intersectionality theory suggests that individual experiences, including those of racial and ethnic discrimination, must be examined in the context of the individual's membership in many different status groups; not only those associated with race and ethnicity, but also with age, gender, socioeconomic position, immigration status, and level of acculturation, among other variables. Membership in these different status groups affect the contexts in which people live and work, and may consequently shape their exposure to and experiences of discrimination. These individual experiences are shaped in part by variations in the historical experiences of different Latino background groups.

### The Sociohistorical Contexts of Latinos

Latino background groups differ in their migration patterns and sociopolitical histories, including exposure to social, material, and political inequality (Guarnaccia et al., 2005; Guarnaccia et al., 2007; Lee & Ahn, 2012; Pérez, Fortuna, & Alegría, 2008). For example, during and following World War II, Mexican individuals immigrated to the Southwest and Puerto Ricans to the Northeast as a function of depressed economies in their homelands and the need for inexpensive labor within agricultural and industrial sectors of the U.S. (Arredondo, Gallardo-Cooper, Delgado-Romero, & Zapata, 2014; Organista, 2007). Political upheaval drove the first large wave of Cuban immigrants who arrived during the 1960s following Castro's rise to power (Organista, 2007). Both political and economic

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<sup>1</sup>In the interest of space, for the remainder of the paper, we refer to this diverse group as Latinos.

insecurity contributed to large waves of immigration from the Dominican Republic in the 1960s and from Central America in the 1980s. In contrast to Central Americans, South Americans are more likely to enter the U.S. as professionals through employment-based visas (Fuligni & Perreira, 2009).

Attitudes towards Latinos have also varied. For example, Mexicans demonstrate a longstanding history of strong anti-Mexican sentiments, including mass deportations (Gúzman & Carrasco, 2011; Organista, 2007) and ongoing scrutiny from immigration authorities (Ayón & Becerra, 2013; Guarnaccia et al., 2007). Puerto Ricans are more likely than other Latinos to be perceived as criminals or second-class citizens (Nadal, Mazzula, Rivera, & Fujii-Doe, 2014). In contrast, Cubans who immigrated following Castro's rise to power received unprecedented levels of refugee support and aid from the U.S. government and private sectors in part through the auspices of the Cuban Adjustment Act (Guarnaccia et al., 2005; Gúzman & Carrasco, 2011; Organista, 2007). However, unlike their predecessors, Cuban immigrants from the Mariel Boatlift experienced significant stigma and anti-Cuban sentiment (Gúzman & Carrasco, 2011). These different immigration pathways affected the historical and current social position, level of acculturation and region of residence of these different background groups, and also influenced the development of attitudes towards these Latino background groups. In combination, these variables may affect exposure to and perceptions of discrimination (Guarnaccia et al., 2005; Guarnaccia et al., 2007).

### **Perceived Ethnic Discrimination among Latino Background Groups**

There is limited research concerning the experiences and correlates of discrimination across Latino groups (Araújo & Borrell, 2006; Gallo et al., 2014; Pérez et al., 2008). In the nationally representative National Latino and Asian American Study (NLAAS), Pérez et al. (2008) examined experiences of unfair treatment in everyday life among Mexican, Cuban, Puerto Rican and "other" Latino groups. After adjusting for sociodemographic and cultural variables, Cubans were significantly less likely than Mexicans to report discrimination. In contrast, in a study of residents of South Florida, no differences were observed between Cubans and Nicaraguans (Cislo, 2008). In the California Health Interview Survey (CHIS; Otiniano & Gee, 2012) no differences in discrimination were identified among Central American, Mexican, and Multiethnic Latinos.

Variations across studies of discrimination among different Latino background groups may reflect the type of discrimination assessed. Ethnic discrimination can be expressed in multiple forms, including race-related social distancing or social exclusion, discrimination at work or school, stigmatization, and physical threat and harassment among other types of maltreatment (Brondolo et al., 2005; Brondolo et al., 2009; Contrada et al., 2001; Harrell, 2000; Krieger 1999). Different types of discrimination have been associated with different social contexts (Brondolo et al., 2009). The intensity or frequency of discrimination may depend on phenotypic characteristics of Latinos, including darker skin, as well as cultural characteristics (e.g., Spanish language use) (Araújo & Borrell, 2006; Arredondo et al., 2014; Espino & Franz, 2002). Specific cultural stereotypes may influence the type of discrimination. For example, cultural stereotyping of Latinos as intellectually inferior may lead to social exclusion and discrimination at school (Casanova, 2012) and among those

who speak accented English within the workplace (Cobas & Feagin, 2008). Dehumanizing portrayals of Latino immigrants in the media and the larger political discourse may implicitly encourage violence and harassment against undocumented Latino immigrants (Ayón & Becerra, 2013; Sherr & Montesino, 2009). Understanding the types of maltreatment that are encountered by Latinos can help guide the development of prevention and intervention efforts.

There are limited data regarding the different types of discrimination encountered by Latino individuals. The measure of discrimination used in the NLAAS study, derived from the Detroit Area Study (DAS; Jackson, Williams, & Torres, 1995), is generally used to reflect overall experiences of unfair treatment and is not designed to permit systematic contrasts among different types of discrimination (e.g., social exclusion vs. physical harassment). Similarly, in the CHIS, participants were asked a single question assessing how often they were treated badly or unfairly because of their race/ethnicity (Otiniano & Gee, 2012).

Variations among studies may also reflect regional variations in the experiences of different Latino background groups. Among other factors, immigration history and current economic factors influence the regions in which members of different Latino background groups live. The degree of discrimination targeted towards members of a particular ethnic or racial group may vary, in part, as a function of the prevalence of that group within the larger community (Card, Mas, & Rothstein, 2007) and competition among groups for resources (Ayón & Becerra, 2013; Takei, Saenz, & Li, 2009).

### The Current Study

The present study examined differences in experiences of discrimination among members of Latino background groups who were drawn from the Hispanic Community Health Study/ Study of Latinos (HCHS/SOL) cohort (Lavange et al., 2010; Sorlie et al., 2010), who also completed the HCHS/SOL Sociocultural Ancillary Study (Gallo et al., 2014). We include participants from four specific background groups, including Cubans, Dominicans, Mexicans and Puerto Ricans, as well as Multiracial Latinos. The sample also includes participants from background groups drawn from two major geographic areas: South and Central America, as the nature of the sampling and recruitment limited our ability to collect large samples of individuals from specific countries within these geographic areas. The measure of discrimination permits evaluation of different types of discrimination, including race/ethnicity related social exclusion, workplace discrimination, stigmatization and threat and harassment.

The sample is population-based and drawn from four major metropolitan regions in which large populations of Latinos reside: including the Bronx, NY, Chicago, IL, Miami, FL, and San Diego, CA. These regions permit us to examine differences among areas in which Latinos form the majority of the population versus areas in which they are in the minority. Specifically, census data indicate Latinos comprise 70% of the population of Miami, 53.5% of the Bronx, 28.9% of Chicago, and 28.8% of San Diego (U.S. Census Bureau, 2012). Additionally, the areas vary in the relative representation of each background groups. For example, Puerto Ricans form a large minority group in the Bronx (accounting for 21.6% of the total population), but a small minority in Chicago (3.8%); and Cubans (34.4%) and

Central Americans (15.8%) are heavily represented in Miami, but less represented elsewhere in the country (e.g., Central Americans comprise less than 1% of the population of San Diego). Mexicans have equivalent and substantial representation in both San Diego (24.9%) and Chicago (21.4%) (U.S. Census Bureau, 2012). Analyses examine discrimination in the context of background group differences in sociodemographic factors that may influence exposure, including age, gender, socioeconomic status and acculturation. Exploratory analyses consider regional variations in exposure to discrimination.

Thus, the following questions are addressed: (1) What are the levels and types of discrimination faced by Latino background groups? (2) Are observed differences among background groups in experiences of discrimination a function of variations in sociodemographic characteristics, acculturation, or regions of residence?

## Method

### Participants and Procedures

The HCHS/SOL is an epidemiologic cohort study (N=16,415) of chronic disease prevalence, incidence, and risk and protective factors in Latinos of diverse backgrounds. Details concerning the study sample (LaVange et al., 2010) and approach (Sorlie et al., 2010) are published elsewhere. Briefly, participants who self-identified as Latino and between the ages of 18 to 74 were recruited using a two-stage area household probability sampling approach, with oversampling within the 45-74 age range. Participants completed comprehensive clinical, sociodemographic, and behavioral assessments. For the current study, sociodemographic and acculturation data were obtained from the HCHS/SOL baseline exam. A subset of 5,313 HCHS/SOL participants participated in the Sociocultural Ancillary Study, which was initiated to thoroughly examine sociocultural correlates of health (Gallo et al., 2014). Within nine months of their baseline study exam, participants completed a separate 1-2 hour assessment interview in their preferred language that comprised socioeconomic, social, psychological, and cultural measures. The SOL Sociocultural Ancillary cohort is generally representative of the HCHS/SOL cohort, with the exception that participation was lower in some higher socioeconomic strata (Gallo et al., 2014). Participants who were missing acculturation or discrimination data (n=22) were excluded from the current study, for a remaining analytic sample of N=5,291. Institutional Review Board approval was obtained from all study sites for all procedures, and all participants provided written informed consent.

### Measures

**Sociodemographic Variables**—Sociodemographic variables were obtained at the HCHS/SOL baseline exam and included Latino background group, age, gender, SES (education, income, employment), and study site.

**Acculturation**—Acculturation was assessed with measures of nativity [(born in the U.S. mainland), duration of U.S. residence, and language (language of the survey/baseline exam)], as well as the Short Acculturation Scale for Hispanics (SASH; Marín, Sabogal, Marín, Otero-Sabogal, & Pérez-Stable, 1987). The SASH consists of three subscales

assessing language use, language of media, and ethnic social relations. Answers are rated on a 5-point scale, with higher scores indicating higher levels of acculturation. The SASH has demonstrated high levels of internal consistency and evidence of construct validity in prior studies (Ellison, Jandorf, & Duhamel, 2011). For brevity, the HCHS/SOL survey included a modified 10-item version of the SASH. An item-level exploratory factor analysis in the HCHS/SOL cohort revealed a two-factor structure, language use and ethnic social relations, with the single media item (“In general, what language(s) are the movies, T.V. and radio programs you prefer to watch and listen to?”) loading on language use. Confirmatory factor analyses provided further support for the fit of the two-factor model overall and across Spanish and English versions. Thus, two scales were used to represent the SASH in the current analyses. Internal consistency was acceptable for both the Language Use ( $\alpha = .92$ ) and Ethnic Social Relations ( $\alpha = .73$ ) scales in the HCHS/SOL cohort.<sup>2</sup>

**Discrimination**—The Brief Perceived Ethnic Discrimination Questionnaire-Community Version (Brief PEDQ-CV; Brondolo et al., 2005) is a 17-item instrument that assesses four types of perceived racism or ethnic discrimination. *Exclusion/Rejection* assesses the degree to which individuals are isolated, excluded, or ignored because of their race or ethnicity. *Stigmatization* assesses the degree to which individuals are treated in a demeaning or stigmatizing way because of their race or ethnicity. *Discrimination at work/school* assesses the degree to which individuals are treated unfairly at work or school because of their race or ethnicity. *Threat/Aggression* assesses the degree to which individuals report that they (or their property) are harmed or threatened with harm because of their race or ethnicity. Items are measured on a 5-point scale with response options indicating that a discriminatory event (1) *never happened* to (5) *happened very often*. A total score is calculated to assess experiences of discrimination across all types, with higher scores indicating greater exposure. Consistent with other studies, scores reflect the mean for the full scale and the subscales. The Brief PEDQ-CV was designed for use with non-institutionalized community samples and demonstrated adequate internal consistency for all four subscales and evidence of construct validity in prior research (Brondolo et al., 2005). Analyses in the HCS/SOL Sociocultural cohort demonstrated evidence of internal consistency reliability for the overall sample including the Total Discrimination score ( $\alpha = .88$ ), Exclusion/Rejection ( $\alpha = .76$ ), Threat/Aggression ( $\alpha = .76$ ), Stigmatization/Devaluation ( $\alpha = .77$ ), and Discrimination at Work/School ( $\alpha = .74$ ).

### Data Analysis Procedure

All analyses accounted for design effects and sample weights (see La Vange et al., 2010 for more details). Descriptive statistics were calculated for the final sample and each Latino background. Structural equation modeling (SEM) analyses evaluated sociodemographic differences among groups. Next, item-level confirmatory factor analyses (CFA) were used to determine the best-fitting measurement model for the Brief PEDQ-CV to the structure of discrimination. Measurement models reflecting a single global perceived discrimination latent variable (factor) and a 4-factor model representing the four subscales of the Brief PEDQ-CV were tested. The latent variables from the best-fitting measurement model were

<sup>2</sup>A manuscript describing the results of the SASH psychometric analyses is currently in progress.

used as dependent variable(s) in subsequent predictive SEM models. Initial descriptive statistics were evaluated for the discrimination total scale and for the four subscales assessing specific discrimination experiences. Analyses examined sociodemographic differences in perceived discrimination. Next, group differences in perceived discrimination were tested, first without covariates and next including all sociodemographic variables. Finally we compared differences in discrimination among groups across and within regions of the U.S.

SEMs were used to evaluate associations of sociodemographic factors and/or background groups with discrimination variables. The maximum likelihood robust (MLR) estimation procedure employed by MPlus (Muthén & Muthén, 2006) was used to estimate model parameters. This procedure provides a chi-square test statistic (Yuan-Bentler  $T_2$  [ $Y-B\chi^2$  for current purposes] (Yuan & Bentler, 2000) and standard errors that are adjusted for multivariate non-normality and missing data. Two descriptive fit indexes have been recommended to assess overall model fit (Bentler, 2007): (a) the root mean square error of approximation (RMSEA) and (b) the standardized root mean square residual (SRMR). Both parameters represent descriptive indices of overall model fit, with values .05 or less indicative of good fit. The alpha level of the Type I error is 0.01 for all inferential statistical tests. For all models tested, we present statistical information only for those predictor variables that were significant in the analyses reported.

## Results

### Descriptive Statistics

Table 1 provides weighted descriptive information for sociodemographic characteristics for the total sample and each Latino background group. Participants included members of four specific background groups, including Cubans ( $n=773$ ), Dominicans ( $n=532$ ), Mexicans ( $n=2,073$ ) and Puerto Ricans ( $n=876$ ). A smaller number of participants identified as Other/Multiple Backgrounds ( $n=137$ ). The sample also included Latinos from two major areas; Central America ( $n=550$ ) and South America ( $n=350$ ). Data on the number of participants from each country within these regions are included in the supplemental material. The sample as a whole contained more women (54.8%) than men (45.2%). More than a third (39.2%) had at least some college, but about a third (32.6%) did not have a high school diploma. Most had low-incomes: 50.3 % had household incomes below \$20,000 and only 5.0% had incomes of \$75,000 or greater. Rates of full or part-time employment ranged from 31.6% to 55.7%. About 78% were born outside the U.S. mainland, but most were longtime U.S. residents.

SEM analyses indicated that there were significant differences among background groups for all sociodemographic characteristics examined (i.e., gender, age, education, employment, and income (all  $ps < .01$ ). We briefly highlight these complex effects for illustrative purposes, but do not explicitly report differences between individual pairs of groups given space considerations. Participants of Cuban and South American descent tended to be older than the overall sample; whereas those from Other/Multiple Background tended to be younger. Central American and Dominican background group participants were most likely to report low levels of education (i.e., to have less than a high school diploma) whereas

greater proportions (i.e., more than 40%) of Mexican, South American, and Other/Multiple Backgrounds had completed at least some college. More than half of the Central American, South American, Mexican, and Other/Multiracial participants were employed full or part-time; whereas only about a third of Cuban and Puerto Ricans were employed. About a quarter of Mexican and Other/Multiple Background participants had incomes above \$40,000; whereas fewer than 10% of Cuban and Dominican participants had incomes in this range.

There were also significant acculturation differences among the Latino background groups ( $ps < .01$ ). The vast majority (i.e., 77-93%) of Central Americans, South Americans, Cubans, Dominicans, and Mexicans reported preferring to speak Spanish; whereas half or more of the Puerto Ricans and Other/Multiple Background participants preferred English. Higher SASH Language Use (reflecting greater acculturation) ( $M = 3.26$ ) and SASH Ethnic Social Relations subscale scores ( $M = 2.64$ ) were observed among Other/Multiple Background participants, and lower Language Use ( $M = 1.50$ ) and Ethnic Social Relations ( $M = 1.94$ ) subscale scores were observed among Cubans than other background groups. The majority (61%) of members of all background groups except Cubans lived in the U.S. for more than 10 years. Fewer Cubans (49.3%) were long term residents.

### Confirmatory Factor Analyses on the Brief PEDQ-CV

As hypothesized, the one-factor general discrimination model did not fit well according to the descriptive fit indices,  $Y-B\chi^2(df=119) = 2110.41, p < .001, RMSEA = .056, SRMR = .069$ . However, the 4-factor discrimination model with interfactor correlations did fit well descriptively,  $YB\chi^2(df=113) = 1251.47, p < .001, RMSEA = .044, SRMR = .048$ . All standardized factor loadings were large and statistically significant: (a) Exclusion/Rejection factor loadings ranged from .63-.71; (b) Stigmatization/Evaluation factor loadings ranged from .47-.73; (c) Discrimination at Work/School factor loadings ranged from .56-.71; and (d) Threat/Aggression factor loadings ranged from .57-.75. The interfactor correlations from this model were all relatively high ( $rs$  ranged from .54-.86), suggesting the presence of a higher-order total discrimination latent variable. Therefore, a second-order CFA model with a total discrimination latent variable and the four specific discrimination latent variables was tested. This model fit well according to the descriptive fit indices,  $Y-B\chi^2(df=115) = 1257.88, p < .001, RMSEA = .043, SRMR = .049$ , and did not differ from the 4-factor model with interfactor correlations. All second-order factor loadings linking the four specific discrimination factors to the total discrimination factor were large and statistically significant (standardized values ranged from .65-.94). As the second-order model is more parsimonious than the 4-factor model with interfactor correlations, it was identified as the best-fitting model and used in predictive SEMs.

### SEM and Sociodemographic (Covariate) Characteristics

Of the total sample, 79.5% reported experiencing at least one episode of discrimination (data not presented). Moreover, a majority of each group also reported experiencing at least one episode of discrimination: Other/Multiple Background (98%), South American (94%), Central American (92.1%), Puerto Rican (86%), Dominican (86%), Cuban (69.1%), and Mexican (64.9%). Tables 2 and 3 illustrate means and standard deviations for the



discrimination total score and the four subscale scores by each Latino background group (Table 2) and by relevant covariates (age, gender, SES, acculturation; Table 3).

Bivariate SEM models were performed to determine if there were associations of sociodemographic variables with the total discrimination and specific discrimination factors. All bivariate models predicting the total discrimination factor fit well,  $Y-B\chi^2(df=131-163) = 1270.91$  to  $1457.25$ ,  $p < .001$ , RMSEA = .038 to .044, SRMR = .042 to .050. The bivariate models predicting the four specific discrimination factors also fit well,  $Y-B\chi^2(df=126$  to  $154) = 1259.60$  to  $1389.60$ ,  $p < .001$ , RMSEA = .039 to .043, SRMR = .042 to .048. Only statistically significant effects are reported below.

**Gender, Age, & Socioeconomic Status**—Men reported greater Total Discrimination ( $b=0.16$ ), Stigmatization/Devaluation ( $b=0.25$ ), Work/School ( $b=0.11$ ) and Threat/Aggression ( $b=0.12$ ) than did women, but men and women did not differ on Exclusion. Younger participants (18-44 years of age) reported higher Total Discrimination ( $b=-0.09$ ) and Stigmatization/Devaluation ( $b=-0.12$ ) scores than their older peers (45 and older). For SES, only employment status (and not income or education) showed statistically significant differences for Total Discrimination, Stigmatization and Work/School Discrimination scores. Participants who were employed part-time reported higher discrimination scores than participants who were not employed ( $b=0.10$ ). Part-time ( $b=.15$ ) or full-time ( $b=.11$ ) employed participants had higher Stigmatization/Devaluation scores and higher Work/School Discrimination scores ( $b=.10$ ,  $b=0.8$ , respectively) than unemployed participants.

**Acculturation**—Indices reflecting greater acculturation were positively associated with reports of discrimination (all  $ps < .01$ ). Specifically, higher SASH Language Use ( $b=0.08$ ), English (vs. Spanish) preference ( $b=0.22$ ), being born in the U.S. mainland (vs. not born in the U.S. mainland) ( $b=.20$ ), and greater years lived in the U.S. ( $b=.15$ ) were significantly associated with higher Total Discrimination. SASH Language Use, language preference, being born in the U.S. mainland, and years lived in the U.S. were all positively associated with Stigmatization (range of  $bs = .09-21$ , Work/School Discrimination [range of  $bs .06-19$ ], and Threat/Harassment [range of  $bs = .07-.26$ ]. SASH Ethnic Relations was significantly associated with Threat/Harassment ( $b = .09$ ). None of the acculturation measures were associated with the Exclusion subscale.

**Region**—Participants in the Bronx ( $b=.13$ ), Chicago ( $b=.35$ ), and San Diego ( $b=.16$ ) reported more discrimination than did participants in Miami. Participants in Chicago also reported more discrimination than participants in the Bronx ( $b=.23$ ) and San Diego ( $b=.20$ ). For every subscale, participants in Chicago, San Diego and the Bronx had higher scores than those in Miami, and participants in Chicago had higher scores than those in the Bronx.

### Results of SEMs Testing Associations of Latino Background with Discrimination

Bivariate SEM models were performed to determine possible background group differences on the Total Discrimination and specific discrimination factors. Multiple dummy-coded variables were used to test all possible pairwise comparisons between groups on the latent variables. The bivariate model predicting the general discrimination factor fit well,  $Y-B\chi^2$

( $df=211$ ) = 1654.62,  $p < .001$ , RMSEA = .036, SRMR = .040. As shown in Table 2, Mexican ( $b=0.15$ ), Puerto Rican ( $b=0.21$ ), and Other/Multiple Background ( $b=0.32$ ), participants displayed significantly higher scores than Dominican participants. Central American ( $b=0.19$ ), Mexican ( $b=0.23$ ), Puerto Rican ( $b=0.29$ ), South American ( $b=0.19$ ), and Other/Multiple Background ( $b=0.40$ ) participants had significantly higher scores than Cuban participants. The bivariate model predicting the four specific discrimination factors fit well,  $Y-B\chi^2(df=193) = 1607.35$ ,  $p < .001$ , RMSEA = .037, SRMR = .040. As shown in Table 2, Central American, Mexican, Puerto Rican, South American, and Other/Multiple Ancestries participants had significantly higher scores for all four specific discrimination factors than Cuban participants ( $bs$  ranged from .12 to .35,  $ps$  ranged from =.009 to  $< .001$ ). In addition, Mexican, Puerto Rican, and Other/Multiple Background participants had significantly higher scores on the Stigmatization and Work/School Discrimination factor than Dominican participants ( $bs$  ranged from .12 to .30,  $ps$  ranged from =.007 to  $< .001$ ). Three additional statistically significant differences were found among background groups. For the Exclusion factor, Mexican participants had higher scores relative to Dominican participants ( $b=.14$ ,  $p=.006$ ); for the Work/School Discrimination factor, Other/Multiple Background participants had significantly higher scores relative to Central American participants ( $b=.21$ ,  $p=.007$ ); and for the Threat/Aggression factor, Puerto Rican participants had significantly higher scores than Central Americans ( $b=.15$ ,  $p=.001$ ).

Next, multiple predictor/covariate models were run to determine if background group differences for the general discrimination and specific discrimination factors were evident after controlling for the sociodemographic and acculturation variables (e.g., age, gender, education, household income, SASH, place of birth, length of time in the U.S., preferred language, and region/site). The model predicting the total discrimination factor fit well,  $Y-B\chi^2(df=467) = 2466.10$ ,  $p < .001$ , RMSEA = .030, SRMR = .035. Now, only three statistically significant group differences were identified: Central American ( $b=0.16$ ), South American ( $b=0.15$ ), and Other/Multiple Background ( $b=0.33$ ), participants had higher total discrimination scores than Cuban participants. With all sociodemographic variables included in the equation, the model predicting the specific discrimination factors fit well,  $Y-B\chi^2(df=401) = 2218.00$ ,  $p < .001$ , RMSEA = .031, SRMR = .032. Statistically significant group differences were found primarily for the Stigmatization/Devaluation and Discrimination at Work/School factors. For Stigmatization/Devaluation, Central American ( $b=.12$ ), South American (.12), and Other/Multiple Background ( $b=0.27$ ) participants had higher scores than Cubans. For Discrimination at Work/School, Central American ( $b=0.12$ ), and Other/Multiple Background ( $b=0.29$ ) participants had significantly higher scores than Cubans; also, Other/Multiple Background ( $b=0.22$ ) participants had significantly higher scores than Dominican participants. For Exclusion/Rejection, Central American participants had significantly higher scores than Cuban participants. No statistically significant background group differences were found for the Threat/Aggression factor.

### Exploratory Analyses: Structural Equation Models and Background Group/Site Differences

Different background groups were more likely to reside in some regions more than others, resulting in confounding between background group and study site. Therefore, exploratory SEM analyses were conducted. Seventeen groups representing background group and study

site combinations were available. These analyses were only conducted on the Total Discrimination factor to limit the number of pairwise comparisons. For SEM analyses, these groups were dummy-coded for use as predictor variables in the SEM models. Moreover, these models controlled for all sociodemographic variables evaluated earlier. A conservative alpha of .001 was employed to minimize type I error probability. The model predicting the Total Discrimination factor fit well,  $YB\chi^2(df=579) = 2700.77, p < .001, RMSEA = .028, SRMR = .030$ . Multiple background/site group differences were evident. We confined our comparisons to theoretically relevant contrasts that would permit us to distinguish the contribution of region vs. background group to reports of discrimination. Data on these analyses are included in the supplemental material. In the first analyses, we compared the experiences of members of a particular background group represented in more than one region. Results indicated that controlling for all sociodemographic variables, Puerto Ricans living in Chicago experienced more discrimination than Puerto Ricans living in the Bronx (Bronx [ $b = 0.28, p < .001$ ]). Mexicans living in San Diego were compared to those living in Chicago, and no significant differences were found. In the second set of analyses, we examined differences among background groups living within a particular region. Among Chicago-dwelling participants, including Mexicans, Puerto Ricans, and South and Central Americans, there were no differences in reports of discrimination. Similarly, among those participants who lived in the Bronx, there were no differences in reports of discrimination between Puerto Ricans and Dominicans.

## Discussion

This study examined differences among Latino background groups in experiences of different types of racial/ethnic discrimination. The data indicated that the vast majority (79.5%) of participants reported at least some exposure to race/ethnicity-based discrimination over the course of their lifetime, suggesting that discrimination is a prevalent stressor. There were significant background group differences in reports of discrimination. However, structural equation models indicated that after adjusting for sociodemographic covariates and region of residence; most, but not all, background group differences in reports of discrimination were eliminated. The findings are consistent with underlying principles of intersectionality theory, suggesting that the experience of racial or ethnic discrimination must be understood in a broader context, taking into account other variables which influence relative status and resources (Cole, 2009; Viruell-Fuentes et al., 2012). These variables include gender, variables associated with acculturation, and Latino background group.

In this study, men report higher levels of discrimination on every subscale with the exception of social exclusion. The literature regarding gender differences in discrimination among Latinos is mixed, with some investigators indicating that men report greater discrimination (Brondolo et al., 2009; Perez et al., 2008; Todorova, Falcon, Lincoln, & Price, 2010), less discrimination (Finch, Kolody, & Vega, 2000; Nadal et al., 2014), or differences based upon the intersection between Latino subgroup and gender (Molina, Alegría, & Mahalingam, 2013). Directly observed race-related social exclusion tends to be the most common type of discrimination reported by both men and women (Brondolo et al., 2005; Kwok et al., 2011). Gender differences in reports of discrimination among Latinos

may depend on the degree to which the measures include items referring to this type of discrimination or perhaps differences in coping skills and social support (Araújo & Borrell, 2006). Nonetheless, researchers should continue to examine gender differences in reports of discrimination among Latinos.

The literature regarding acculturation and discrimination is also mixed, as most (Cook, Alegría, Lin, & Guo, 2009; Pérez et al., 2008; Todorova et al., 2010) but not all (Finch et al., 2000; Nadal et al., 2014) research indicates Latinos with greater levels of acculturation report greater discrimination. The data from this study are also consistent with this hypothesis, as all measures of acculturation were positively associated with reports of discrimination. These effects are perhaps a function of greater interactions with individuals of other races/ethnicities. Latinos with greater levels of acculturation are more adept at recognizing racial/ethnic bias possibly as a function of greater sensitivity to such experiences and greater social integration and mobility (Cook et al., 2009; Perez et al., 2008; Todorova et al., 2010).

Consistent with other literature drawn from another population-based study (Pérez et al., 2008), the findings revealed that Cubans reported less discrimination overall than most other background groups, even after adjustment for all sociodemographic and acculturation variables. In particular, Cubans reported less stigmatization and workplace discrimination than did most other background groups. Several contextual factors may serve as potential explanations for these findings, including the immigration history of Cubans, their population prevalence in Miami, their level of acculturation and participation in employment.

Cuban immigrants were the only Latino immigrant group in the U.S. to receive some political and legislative protection (i.e., in the form of the Cuban Readjustment Act) (Gúzman & Carrasco, 2011). This protection may have protected them from discrimination and changed their experience of belonging and inclusion, at least among Cubans who immigrated closely following Castro's assumption of power. Lower levels of discrimination are perhaps a function of the large numbers of Latinos living in Miami where Latino individuals comprise 70% of the population and Cubans represent 49.1% of Latino residents of Miami (U.S. Census Bureau, 2012). Fewer opportunities for inter-group interaction in the community at large may reduce exposure to ethnicity-related discrimination. Central Americans are also well represented in Miami, but are more likely to be employed. The relatively lower rates of employment among Cubans may contribute to their lower reports of workplace discrimination.

Relatively lower reports of stigmatization may also reflect lower levels of acculturation. More Cuban participants in this study are relatively recent immigrants (i.e., lived in the U.S. for < 10 years) than are participants in other background groups, and they report lower levels of acculturation. Differences between Cubans and other Hispanic/Latino groups persist after accounting for variables associated with acculturation and employment; however, self-reported measures of acculturation may not fully account for all the differences in experiences that accompany unemployment and more recent immigration. Despite lower levels of self-reported exposure to discrimination, a recent meta-analysis

suggests that Cubans show a stronger relationship between discrimination and psychological distress than do Puerto Ricans and Dominicans (Lee & Ahn, 2012).

There were significant regional differences in reports of discrimination, with relatively greater levels of discrimination reported in Chicago versus other regions. Chicago is a racially/ethnically segregated city as a function of both real estate practices and other informal and formal policies (Betancur, 1996). Although Latinos comprise a sizeable minority of the population (i.e., 28.9%), they reside in relatively segregated areas. The degree to which high ethnic density can offer protection against discrimination may depend on the political and economic history of the neighborhoods (Denton, Shaffer, Alcantara, Clemow, & Brondolo, 2014). When ethnically segregated communities also face economic and social disadvantage, residents may have access to fewer services or may interact with lower quality educational, medical and governmental services. Negative interactions with these agencies and their staff can be experienced as discriminatory (Sorkin, Ngo-Metzger, & De Alba, 2010). Therefore, reports of discrimination may reflect both day-to-day experiences of maltreatment that occur in interactions with others, as well as episodes of maltreatment that are viewed as a consequence of living in segregated areas, when the segregation itself is viewed as arising from discrimination. Although we adjusted for individual-level SES indicators when examining regional differences, we did not examine neighborhood-level SES indicators, such as concentrated poverty or neighborhood segregation.

Analyses of regional effects suggest that experiences of discrimination may be at least partly related to the relative size of the background groups' population in comparison to the region as a whole and in relation to the size of other Latino background groups. For example, Puerto Ricans reported greater discrimination when they resided in Chicago versus the Bronx. In Chicago, Puerto Ricans comprise a very small proportion of the overall population (i.e., 3.8%), whereas in the Bronx, Latinos overall form the majority, and Puerto Ricans comprise 21% of the population. In contrast, there are no differences in reports of discrimination between Mexicans living in Chicago vs. San Diego. In both regions, Mexican individuals represent sizable minorities of the populations of these regions, and the proportions do not differ across regions.

This study suggests that the Brief PEDQ-CV is an appropriate measure of discrimination with Latinos of diverse backgrounds and with varied acculturation and SES levels. The four-factor model, which permitted evaluation of these different dimensions of discrimination, was the best-fitting model and appropriate to use in the predictive SEMs. The findings indicate that background group differences are not seen across all types of discrimination. Variations among groups emerge most consistently in stigmatization and workplace discrimination. No background group differences in the experience of race-related threat and aggression were noted. These events are infrequent, but were reported by members of all Latino background groups.

### Limitations and Recommendations

The cross-sectional nature of the study limits the ability to infer causality. Data for the current study were obtained through self-reports and are susceptible to recall and social

desirability biases. Recruitment was limited to only four U.S. regions, thus current findings may only generalize to these regions. Participants did not include individuals from Arizona or other areas where punitive and restrictive anti-immigration laws (e.g., SB 1070) are emerging. Future research should sample from regions with anti-immigration laws and new settlement areas, known as new Latino destinations (Crowley & Lichter, 2009), where Latinos are also perceived as economic threats.

Recruitment strategies also resulted in a sample primarily composed of immigrants with income and educational levels for each Latino background group that may not fully correspond with national norms (Lopez, Gonzalez-Barrera, & Cuddington, 2013). Our participants were recruited in specific regions that do not represent the Latino population as a whole. Due to the small samples of Central and South American background groups, data were not disaggregated for these distinct groups. In some areas, the number of individuals from a particular background group is relatively small. We did not assess characteristics associated with phenotype (e.g., skin tone) or culture (e.g., accented speech), which influence exposure to discrimination (Araújo & Borrell, 2006; Arredondo et al., 2014; Cobas & Feagin, 2008; Espino & Franz, 2002). Therefore, the degree to which phenotypic or cultural characteristics exert effects independent of background group is unknown. Differences among measures used in this study and prior studies make it difficult to evaluate changes over time in experiences of discrimination and suggest that longitudinal studies are needed.

## Conclusion

The findings strengthen the arguments proposed by intersectionality theory, encouraging the examination of discrimination in the context of the individual's membership in multiple status-related groups. The data suggest that exposure to discrimination varies depending not only on the individual's race/ethnicity and other sociodemographic characteristics, but may also vary as a function of the relationship of the particular Latino background group to the larger population. By conceptualizing the ways individual and group related variables jointly shape the experience of Latinos, researchers are able to obtain a contextual understanding of ethnic discrimination, and greater insight into the ways in which experiences of discrimination are influenced by other dimensions of social status and inequality (Viruell-Fuentes et al., 2012). Findings further highlight the importance of considering the diversity of Latinos and recognizing the historical and current social, political and economic factors that drive the unique experiences of members of these different background groups (Gallo et al., 2014; Guarnaccia et al., 2005; Guarnaccia et al., 2007). Our findings also have implications for examining the multiple forms of ethnic discrimination and how they may impact the psychological well-being of different Latino background groups. Indeed, understanding these forms of ethnic discrimination can help guide the development of prevention and intervention efforts geared towards Latinos.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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## References

- Araújo B, Borrell L. Understanding the link between discrimination, mental health outcomes, and life chances among Latinos. *Hispanic Journal of Behavioral Sciences*. 2006; 28:245–266. doi: 10.1177/0739986305285825.
- Arredondo, P.; Gallardo-Cooper, M.; Delgado-Romero, EA.; Zapata, AI. *Culturally responsive counseling with Latinas/os*. American Counseling Association; Alexandria, VA: 2014.
- Ayón C, Becerra D. Mexican immigrant families under siege: The impact of anti-immigrant policies, discrimination, and the economic crisis. *Advances in Social Work*. 2013; 14:206–228.
- Bentler PM. On tests and indices for evaluating structural models. *Personality & Individual Differences*. 2007; 42:825–829. doi:10.1016/j.paid.2006.09.024.
- Betancur JJ. The settlement experience of Latinos in Chicago: Segregation, speculation, and the ecology model. *Social Forces*. 1996; 74:1299–1324.
- Brondolo E, Kelly KP, Coakley V, Gordon T, Thompson S, Levy E, Contrada RJ. The Perceived Ethnic Discrimination Questionnaire: Development and preliminary validation of a community version. *Journal of Applied Social Psychology*. 2005; 35:335–365. doi:10.1111/j.1559-1816.2005.tb02124.x.
- Brondolo E, Cubin E, Saegert S, Tobin J, Cassells A, Beatty DL. Sociodemographic variations in self-reported racism in a community sample of Blacks and Latina(os). *Journal of Applied Social Psychology*. 2009; 39:407–429. doi:10.1111/j.1559-1816.2008.00444.x.
- Brondolo E, Hausmann LM, Jhalani J, Pencille M, Atencio-Bacayon J, Kumar A, Schwartz J. Dimensions of perceived racism and self-reported health: Examination of racial/ethnic differences and potential mediators. *Annals of Behavioral Medicine*. 2011; 42:14–28. doi:10.1007/s12160-011-9265-1. [PubMed: 21374099]
- Card, D.; Mas, A.; Rothstein, J. *Tipping and the dynamics of segregation*. National Bureau of Economic Justice; Cambridge, MA: May. 2007 NBER Working Paper 13052
- Casanova S. The stigmatization and resilience of a female indigenous Mexican immigrant. *Hispanic Journal of Behavioral Sciences*. 2012; 34:375–403. doi: 10.1177/0739986312449584.
- Cislo AM. Ethnic identity and self-esteem: Contrasting Cuban and Nicaraguan young adults. *Hispanic Journal of Behavioral Sciences*. 2008; 30:230–250. doi: 10.1177/0739986308315297.
- Cobas JA, Feagin JR. Language oppression and resistance: The case of middle class Latinos in the United States. *Ethnic & Racial Studies*. 2008; 31:390–410. doi:10.1080/01419870701491945.
- Cole ER. Intersectionality and research in psychology. *American Psychologist*. 2009; 64:170–180. doi: 10.1037/a0014564. [PubMed: 19348518]
- Contrada RJ, Ashmore RD, Gary ML, Coups E, Egeth JD, Sewell A, Goyal T. Measures of ethnicity-related stress: Psychometric properties, ethnic group differences, and associations with well-being. *Journal of Applied Social Psychology*. 2001; 31:1775–1820. doi: 10.1111/j.1559-1816.2001.tb00205.x.
- Cook B, Alegría M, Lin JY, Guo J. Pathways and correlates connecting Latinos' mental health with exposure to the United States. *American Journal of Public Health*. 2009; 99:2247–2254. doi: 10.2105/AJPH.2008.137091. [PubMed: 19834004]

- Crowley M, Lichter DT. Social disorganization in new Latino destinations?\*. *Rural Sociology*. 2009; 74:573–604.
- Daviglus M, Talavera G, Avilés-Santa M, Allison M, Cai J, Criqui M, Stamler J. Prevalence of major cardiovascular risk factors and cardiovascular diseases among Hispanic/Latino individuals of diverse backgrounds in the United States. *JAMA: Journal of The American Medical Association*. 2012; 308:1775–1784. [PubMed: 23117778]
- Denton E, Shaffer J, Alcantara C, Clemow L, Brondolo E. Hispanic residential ethnic density and depression in post-ACS patients: Re-thinking the role of social support. *International Journal of Social Psychiatry*. 2014 Advance online publication doi: 10.1177/0020764014540148.
- Ellison J, Jandorf L, Duhamel K. Assessment of the Short Acculturation Scale for Hispanics (SASH) among low-income, immigrant Hispanics. *Journal of Cancer Education*. 2011; 26:478–483. doi: 10.1007/s13187-011-0233-z. [PubMed: 21688089]
- Espino R, Franz MM. Latino phenotypic discrimination revisited. The impact of skin color on occupational status. *Social Science Quarterly*. 2002; 83:612–624.
- Finch BK, Kolody B, Vega WA. Perceived discrimination and depression among Mexican-origin adults in California. *Journal of Health & Social Behavior*. 2000; 41:295–313. [PubMed: 11011506]
- Fuligni, AJ.; Perreira, KM. Immigration and adaptation.. In: Villarruel, FA.; Carlo, G.; Grau, JA.; Azmitia, M.; Cabrera, NJ.; Chahin, TJ., editors. *Handbook of U.S. Latino psychology. Developmental and community-based perspectives*. Sage; Thousand Oaks, CA: 2009. p. 99-114.
- Gallo L, Penedo F, Carnethon M, Isasi C, Sotres-Alvarez D, Malcarne V, Talavera G. The Hispanic Community Health Study/Study of Latinos Sociocultural Ancillary Study: Sample, design, and procedures. *Ethnicity & Disease*. 2014; 24:77–83. [PubMed: 24620452]
- Guarnaccia PJ, Martinez I, Acosta H. Mental health in the Hispanic immigrant community. *Journal of Immigrant & Refugee Services*. 2005; 3:21–46. Chapter 2. doi:10.1300/J191v03n01\_02.
- Guarnaccia P, Pincay I, Alegría M, Shrout P, Lewis-Fernandez R, Canino G. Assessing Diversity Among Latinos: Results from the NLAAS. *Hispanic Journal of Behavioral Sciences*. 2007; 29:510–534. doi: 10.1177/0739986307308110. [PubMed: 19672330]
- Gúzman, M.; Carrasco, N. *Counseling & Diversity: Latino Americans*. Cengage Learning; Belmont, CA: 2011.
- Harrell SP. A multidimensional conceptualization of racism-related stress: Implications for the well-being of people of color. *American Journal of Orthopsychiatry*. 2000; 70:42–57. doi:10.1037/h0087722. [PubMed: 10702849]
- Jackson, J.; Williams, D.; Torres, M. Perceptions of discrimination, health and mental health: The social stress process.. In: Maney, A.; Ramos, J., editors. *Socioeconomic conditions, stress and mental disorders: Toward a new synthesis of Research and Public Policy*. University of Michigan, Institute for Social Research; Ann Arbor, MI: 1995.
- Krieger N. Embodying inequality: A review of concepts, measures, and methods for studying health consequences of discrimination. *International Journal of Health Services*. 1999; 29:295–352. doi: 10.2190/M11W-VWXE-KQM9-G97Q. [PubMed: 10379455]
- Kwok J, Atencio J, Ullah J, Crupi R, Chen D, Roth AR, Brondolo E. The Perceived Ethnic Discrimination Questionnaire—Community Version: Validation in a multiethnic Asian sample. *Cultural Diversity And Ethnic Minority Psychology*. 2011; 17:271–282. doi:10.1037/a0024034. [PubMed: 21787059]
- Lavange L, Kalsbeek W, Sorlie P, Avilés-Santa L, Kaplan R, Barnhart J, Elder J. Sample design and cohort selection in the Hispanic Community Health Study/Study of Latinos. *Annals of Epidemiology*. 2010; 20:642–649. doi:10.1016/j.annepidem.2010.05.006. [PubMed: 20609344]
- Lee DL, Ahn S. Discrimination against Latinoa/os: A meta-analysis of individual-level resources and outcomes. *The Counseling Psychologist*. 2012; 40:28–65. doi:10.1177/0011000011403326.
- Lopez, MH.; Gonzalez-Barrera, A.; Cuddington, D. *Diverse Origins: The Nation's 14 Largest Hispanic-Origin Groups*. Pew Hispanic Research Center; Washington, DC: 2013.
- Marín G, Sabogal F, Marín BV, Otero-Sabogal R, Pérez-Stable EJ. Development of a short acculturation scale for Hispanics. *Hispanic Journal of Behavioral Sciences*. 1987; 9:183–205.



- Molina KM, Alegría M, Mahalingam R. A multiple-group path analysis of the role of everyday discrimination on self-rated physical health among Latina/os in the USA. *Annals of Behavioral Medicine*. 2013; 45:33–44. doi: 10.1007/s12160-012-9421-2. [PubMed: 23054945]
- Muthén, LK.; Muthén, BO. *Mplus*. Muthén & Muthén; Los Angeles: 2006.
- Nadal KL, Mazzula SL, Rivera DP, Fujii-Doe W. Microaggressions and Latina/o Americans: An analysis of nativity, gender, and ethnicity. *Journal of Latina/o Psychology*. 2014; 2:67–78. doi: 10.1037/lat0000013.
- Organista, KC. *Theory, Practice, and Populations*. John Wiley and Sons; Hoboken, NJ: 2007.
- Otiniano AD, Gee GC. Self-reported discrimination and health-related quality of life among Whites, Blacks, Mexicans and Central Americans. *Journal of Immigrant Minority Health*. 2012; 14:189–197. doi: 10.1007/s10903-011-9473-6O. [PubMed: 21562787]
- Pascoe EA, Richman LS. Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin*. 2009; 135:531–554. doi:10.1037/a0016059. [PubMed: 19586161]
- Pérez D, Fortuna L, Alegría M. Prevalence and correlates of everyday discrimination among U.S. Latinos. *Journal of Community Psychology*. 2008; 36:421–433. doi:10.1002/jcop.20221. [PubMed: 19960098]
- Sherr M, Montesino M. Hate crime based on ethnicity and religion: A description of the phenomenon in the United States since 2000. *International Journal of Diversity In Organisations, Communities & Nations*. 2009; 9:23–37.
- Sorkin D,H, Ngo-Metzger Q, De Alba I. Racial/ethnic discrimination in health care: Impact on perceived quality of care. *Journal of General Internal Medicine*. 2010; 25:390–396. doi: 10.1007/s11606-010-1257-5. [PubMed: 20146022]
- Sorlie PD, Avilés-Santa LM, Wassertheil-Smoller S, Kaplan RC, Daviglus ML, Giachello AL, Heiss G. Design and implementation of the Hispanic Community Health Study/Study of Latinos. *Annals of Epidemiology*. 2010; 20:629–641. doi:10.1016/j.annepidem.2010.03.015. [PubMed: 20609343]
- Takei I, Saenz R, Li J. Cost of being a Mexican immigrant and being a Mexican non-citizen in California and Texas. *Hispanic Journal of Behavioral Sciences*. 2009; 31:73–95. doi: 10.1177/0739986308327960.
- Todorova ILG, Falcon LM, Lincoln AK, Price LL. Perceived discrimination, psychological distress, and health. *Sociology of Health & Illness*. 2010; 32:843–861. doi: 10.1111/j.1467-9566.2010.01257.x. [PubMed: 20649891]
- U.S. Census Bureau. Overview of race and Hispanic origin 2010. 2011. Retrieved from <http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf>
- U.S. Census Bureau. 2010 Census Summary File 1. 2012. Retrieved from <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml#none>
- Viruell-Fuentes EA, Miranda PY, Abdulrahim S. More than culture: Structural racism, intersectionality theory, and immigrant health. *Social Science & Medicine*. 2012; 75:2099–2106. doi:10.1016/j.socscimed.2011.12.037. [PubMed: 22386617]
- Williams DR, Mohammed SA. Discrimination and racial disparities in health: Evidence and needed research. *Journal of Behavioral Medicine*. 2009; 32:20–47. doi:10.1007/s10865-008-9185-0. [PubMed: 19030981]
- Yuan KH, Bentler PM. Three likelihood-based methods for mean and covariance structure analysis with nonnormal missing data. *Sociological Methodology*. 2000; 30:165–200. doi: 10.1111/0081-1750.00078.
- Zsembik B, A, Fennell D. Ethnic variation in health and the determinants of health among Latinos. *Social Science & Medicine*. 2005; 61:53–63. doi:10.1016/j.socscimed.2004.11.04. [PubMed: 15847961]

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**Table 1**

Statistics (percentages and means) and 95% Confidence Interval for Sample Sociodemographic Characteristics for Total Sample  
 and Group: HCHS/SOL Sociocultural Ancillary Study

	Central American (n=550)	Cuban American (n=773)	Dominican (n=532)	Mexican American (n=2073)	Puerto Rican (n=876)	South American (n=350)	Other/Multiple Background (n=137)	Total (N=5291)
	44.2 (39.4-49.1)	50.9 (47.7-54.1)	38.1 (31.8-44.8)	44.0 (41.0-47.0)	47.3 (42.6-52.0)	46.5 (39.6-53.5)	39.9 (28.2-52.7)	45.2 (43.2-47.2)
	55.8 (50.9-60.6)	49.1 (45.9-52.3)	61.9 (55.2-68.2)	56.0 (53.0-59.0)	52.7 (48.0-57.4)	53.5 (46.5-60.4)	60.1 (47.3-71.8)	54.8 (52.8-56.8)
	63.9 (58.3-69.1)	39.6 (35.1-44.2)	61.3 (54.1-68.0)	66.0 (62.5-69.3)	47.6 (42.5-52.8)	46.1 (38.5-53.9)	83.0 (74.1-89.2)	56.6 (54.3-58.8)
	36.1 (30.5-41.5)	60.4 (55.8-64.9)	38.7 (32.0-45.9)	34.0 (30.7-37.5)	52.4 (47.2-57.5)	53.9 (46.1-61.5)	17.0 (10.8-25.9)	43.4 (41.2-45.7)
	37.7 (31.2-44.6)	26.1 (22.5-30.0)	36.4 (30.6-42.6)	34.9 (31.2-38.8)	33.8 (28.5-39.6)	22.9 (17.3-29.8)	29.8 (16.5-47.6)	32.6 (30.4-34.8)
	23.8 (18.8-29.5)	30.0 (26.3-34.0)	27.3 (20.7-35.0)	28.8 (25.7-32.0)	29.1 (24.6-34.0)	28.4 (22.5-35.1)	19.4 (11.0-31.9)	28.2 (26.5-30.0)
	38.5 (32.2-45.2)	43.9 (39.8-48.0)	36.4 (30.6-42.5)	36.3 (32.2-40.7)	37.1 (31.3-43.3)	48.7 (42.1-55.3)	50.8 (37.2-64.3)	39.2 (36.7-41.8)
	21.1 (16.5-26.6)	27.4 (23.4-31.8)	17.9 (13.2-23.7)	11.5 (8.8-14.9)	21.8 (18.0-26.2)	12.6 (9.0-17.5)	12.7 (7.0-21.8)	17.6 (15.8-19.7)
	39.1 (33.2-44.8)	41.2 (37.3-45.3)	39.1 (30.7-48.2)	27.2 (23.7-31.0)	35.4 (29.9-41.2)	36.9 (31.1-43.0)	22.6 (14.0-34.4)	33.7 (31.5-36.0)
	28.5 (23.7-33.9)	24.3 (20.8-28.2)	33.2 (25.9-41.4)	36.9 (33.5-40.5)	25.8 (20.8-31.5)	35.5 (28.7-42.9)	38.6 (23.8-55.8)	31.8 (29.6-34.0)
	10.2 (6.6-15.5)	4.3 (3.8-6.5)	8.4 (5.4-12.7)	16.8 (13.8-20.2)	12.0 (9.3-15.3)	9.8 (6.7-14.1)	19.9 (11.4-32.4)	12.0 (10.3-13.8)
	1.1 (0.5-1.4)	2.8 (1.3-6.1)	1.5 (0.7-3.3)	7.6 (4.9-11.4)	5.1 (3.4-7.6)	5.3 (2.5-10.7)	6.2 (2.1-16.9)	5.0 (3.7-6.7)
	6.4 (4.6-8.2)	14.5 (11.2-18.6)	6.3 (4.5-8.9)	4.7 (3.3-6.5)	19.4 (14.8-25.0)	7.5 (4.7-11.7)	3.4 (1.3-8.6)	9.4 (8.0-10.9)
	41.5 (36.1-47.0)	53.9 (49.4-58.4)	49.6 (42.3-56.9)	44.4 (40.7-48.2)	45.7 (40.1-51.5)	36.8 (30.2-44.0)	41.1 (27.9-55.8)	46.5 (44.1-48.9)
	24.5 (20.6-29.0)	11.4 (9.5-13.6)	18.3 (14.1-23.3)	21.0 (18.5-23.7)	12.8 (9.7-16.7)	25.6 (20.4-31.7)	30.8 (15.1-52.5)	18.3 (16.7-19.9)
	27.6 (23.6-31.9)	20.2 (17.3-23.4)	25.8 (20.3-32.1)	29.9 (26.9-33.2)	22.1 (18.3-26.4)	30.1 (24.1-36.7)	24.7 (15.4-37.1)	25.9 (24.2-27.7)
	1.69 (1.55-1.83)	1.50 (1.42-1.57)	1.93 (1.74-2.23)	2.09 (1.99-2.19)	3.08 (2.97-3.21)	1.79 (1.67-1.91)	3.26 (3.02-3.50)	2.10 (2.03-2.17)
	2.07 (1.99-2.15)	1.94 (1.89-1.99)	2.33 (2.25-2.42)	2.24 (2.19-2.28)	2.52 (2.44-2.59)	2.21 (2.13-2.28)	2.64 (2.51-2.78)	2.23 (2.20-2.26)

Variable	Central American (n=550)	Cuban American (n=773)	Dominican (n=532)	Mexican American (n=2073)	Puerto Rican (n=876)	South American (n=350)	Other/Multi
English	10.4 (6.5-16.2)	6.9 (4.7-9.9)	23.4 (15.9-33.2)	21.3 (17.7-25.3)	59.1 (53.3-64.5)	9.5 (6.0-14.6)	6
Spanish	89.6 (83.8-93.5)	93.1 (90.1-95.3)	76.6 (66.8-84.1)	78.7 (74.7-82.3)	40.9 (35.5-46.7)	90.5 (85.4-94.0)	3
Nativity							Arellano-Morales et al.
Not Born in the U.S. Mainland	92.1 (86.7-95.4)	94.8 (91.9-96.7)	85.0 (76.6-90.8)	74.8 (70.6-78.6)	54.4 (49.8-58.9)	94.4 (90.3-96.8)	4
Born in the U.S. Mainland	7.9 (4.6-13.3)	5.2 (3.3-8.1)	15.0 (9.2-23.4)	25.2 (21.4-29.4)	45.6 (41.1-50.2)	5.6 (3.2-9.7)	5
Years in the U.S.							
< 10 years	35.2 (29.3-41.6)	50.7 (44.8-56.6)	27.4 (21.7-34.0)	20.4 (17.6-23.7)	7.3 (4.8-11.0)	39.0 (31.7-46.8)	
10 years or more	64.8 (58.4-70.7)	49.3 (43.4-55.2)	72.6 (66.0-78.3)	79.6 (76.3-82.4)	92.7 (89.0-95.2)	61.0 (53.2-68.3)	8
Region (Study Site)							
Bronx, NY	19.2 (12.8-27.8)	1.6 (0.8-2.9)	93.8 (89.5-96.4)	9.0 (5.8-13.9)	70.6 (64.8-75.7)	27.3 (20.1-36.0)	5
Chicago, IL	17.1 (11.7-24.2)	0.7 (0.3-1.7)	0.9 (0.5-1.7)	26.3 (21.7-31.4)	20.5 (16.3-25.4)	19.2 (13.8-26.1)	
Miami, FL	61.7 (51.4-71.1)	96.5 (93.7-98.1)	4.3 (2.1-8.6)	0.8 (0.4-1.6)	6.4 (3.8-10.7)	48.5 (38.1-59.1)	2
San Diego, CA	2.0 (0.9-4.6)	1.2 (0.3-4.7)	1.0 (0.2-3.8)	63.9 (57.8-69.5)	2.5 (1.2-5.1)	4.9 (10.7-13.4)	

**Table 2**

Weighted Descriptive Statistics for Discrimination Dimensions for Total Sample by Latino Background Group: HCHS/SOL Sociocultural Ancillary Study

Variable	<u>Total Discrimination</u>		<u>Exclusion/Rejection</u>		<u>Stigmatization/Devaluation</u>		<u>Discrimination at work/school</u>		<u>Threat/Aggression</u>	
	M	SE	M	SE	M	SE	M	SE	M	SE
Latino Background Group										
Central American	1.48 <sub>b</sub>	0.03	1.91 <sub>c</sub>	0.04	1.34 <sub>c</sub>	0.03	1.54 <sub>c,f</sub>	0.04	1.17 <sub>c</sub>	0.02
Cuban American	1.34 <sub>b</sub>	0.02	1.69 <sub>e</sub>	0.03	1.22 <sub>c</sub>	0.02	1.39 <sub>c</sub>	0.02	1.09 <sub>c,g</sub>	0.02
Dominican	1.40 <sub>a</sub>	0.03	1.74 <sub>e</sub>	0.05	1.29 <sub>d</sub>	0.03	1.43 <sub>d</sub>	0.04	1.17	0.03
Mexican American	1.52 <sub>a,b</sub>	0.02	1.89 <sub>e</sub>	0.03	1.40 <sub>c,d</sub>	0.02	1.61 <sub>c,d</sub>	0.03	1.21 <sub>c</sub>	0.02
Puerto Rican	1.57 <sub>a,b</sub>	0.03	1.92 <sub>c</sub>	0.05	1.46 <sub>c,d</sub>	0.03	1.67 <sub>c,d</sub>	0.04	1.27 <sub>c,g</sub>	0.02
South American	1.48 <sub>b</sub>	0.04	1.90 <sub>e</sub>	0.06	1.34 <sub>c</sub>	0.04	1.56 <sub>c</sub>	0.04	1.17 <sub>c</sub>	0.03
Other/Multiple Background	1.65 <sub>a,b</sub>	0.07	1.97 <sub>c</sub>	0.08	1.55 <sub>c,d</sub>	0.10	1.79 <sub>c,d,f</sub>	0.09	1.32 <sub>c</sub>	0.07
Total Sample	1.48	0.01	1.84	0.02	1.36	0.01	1.55	0.02	1.19	0.01

Note. Subscripts indicate Latino background groups that statistically differ based on structural equation models for discrimination dimensions.

**Table 3**

**Weighted Descriptive Statistics for Discrimination Dimensions by Demographic Characteristics: HCHS/SOL Sociocultural Ancillary Study**

Variable	Total Discrimination		Exclusion/Rejection		Stigmatization/Devaluation		Discrimination at work/school		Threat / Aggression	
	M	SE	M	SE	M	SE	M	SE	M	SE
<b>Sociodemographic Characteristics</b>										
Gender										
Male	1.55	0.02	1.88	0.03	1.49	0.02	1.63	0.02	1.24	0.02
Female	1.41	0.01	1.81	0.02	1.24	0.01	1.48	0.02	1.15	0.01
Age										
18-44	1.51	0.02	1.89	0.02	1.41	0.02	1.57	0.02	1.20	0.01
45+	1.43	0.01	1.79	0.02	1.29	0.01	1.52	0.02	1.17	0.01
Socioeconomic Status Education										
No H.S. Diploma/GED	1.47	0.02	1.85	0.03	1.36	0.02	1.51	0.03	1.20	0.02
H.S. Diploma/GED	1.50	0.01	1.88	0.03	1.40	0.02	1.57	0.03	1.20	0.02
> H.S. Diploma/ GED	1.46	0.02	1.83	0.03	1.32	0.02	1.57	0.02	1.18	0.01
Yearly Household Income										
<10K	1.49	0.03	1.88	0.04	1.38	0.03	1.56	0.05	1.18	0.03
10,001-20,000K	1.48	0.02	1.84	0.03	1.35	0.02	1.55	0.03	1.21	0.02
20,001-40,000K	1.50	0.02	1.91	0.03	1.38	0.02	1.57	0.02	1.19	0.02
40,001-75,000K	1.48	0.03	1.79	0.04	1.40	0.03	1.58	0.04	1.18	0.02
>75K	1.49	0.06	1.79	0.08	1.32	0.06	1.62	0.09	1.26	0.06
Employment Status										
Retired & currently not employed	1.40	0.04	1.74	0.07	1.25	0.03	1.50	0.06	1.16	0.03
Not retired & currently not employed	1.45	0.02	1.82	0.03	1.35	0.02	1.50	0.02	1.17	0.01
Employed part-time 35 hours	1.52	0.03	1.87	0.03	1.40	0.03	1.63	0.03	1.22	0.02
Employed full-time < 35 hours	1.50	0.02	1.88	0.03	1.37	0.02	1.59	0.03	1.20	0.01
Language preference (Interview Language)										
English	1.61	0.02	1.92	0.04	1.53	0.03	1.70	0.03	1.33	0.02
Spanish	1.43	0.01	1.82	0.02	1.30	0.01	1.50	0.02	1.14	0.01
Nativity										
Not Born in U.S. Mainland	1.44	0.01	1.82	0.02	1.30	0.01	1.51	0.02	1.16	0.01
Born in the U.S. Mainland	1.61	0.02	1.92	0.04	1.55	0.03	1.69	0.03	1.29	0.03

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Variable	Total Discrimination		Exclusion/Rejection		Stigmatization Devaluation		Discrimination at work/school		Threat / Aggression	
	M	SE	M	SE	M	SE	M	SE	M	SE
Sociodemographic Characteristics										
Years in the US										
< 10 years	1.38	0.02	1.79	0.03	1.22	0.02	1.44	0.02	1.11	0.01
10 years or more	1.51	0.01	1.86	0.02	1.40	0.02	1.59	0.02	1.22	0.01
Region (Study Site)										
Bronx, NY	1.47	0.02	1.82	0.04	1.36	0.02	1.54	0.03	1.21	0.02
Chicago, IL	1.65	0.02	2.11	0.03	1.50	0.02	1.74	0.03	1.31	0.02
Miami, FL	1.37	0.02	1.74	0.02	1.24	0.02	1.43	0.02	1.10	0.02
San Diego, CA	1.49	0.03	1.83	0.03	1.39	0.03	1.58	0.03	1.18	0.02