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A Multiple-Group Path Analysis of the Role of Everyday Discrimination on Self-Rated Physical Health among Latina/os in the U.S.

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Abstract

Background—Few studies have examined the psychosocial mechanisms through which self-reported discrimination may influence the health status of Latinos.

Purpose—This study examined the mediating role of subjective social status in the US and psychological distress on the relation between everyday discrimination and self-rated physical health, and the moderating role of gender and ethnicity.

Methods—A US population-based sample of Latinos (N= 2,554) was drawn from the National Latino and Asian American Study. Respondents completed measures of everyday discrimination, subjective social status, psychological distress, and self-rated physical health.

Results—Path analysis revealed that among the total sample, subjective social status and psychological distress sequentially mediated the effect of everyday discrimination on self-rated physical health. Psychological distress was a more consistent mediator across Latino subgroups. Gender and ethnicity moderated the mediation model.

Conclusions—This study provides a systematic examination of how psychosocial mechanisms may operate differently or similarly across Latino subgroups.

Keywords

Everyday discrimination; Latinos; Psychological distress; Subjective social status; Self-rated physical health; Intersectionality

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Introduction

Latinos constitute the largest and fastest growing ethnic minority population in the US, comprising 16.3% of the total population and accounting for 56% of the nation's growth in the past decade (1). In contrast to Latinos' rapidly growing numbers, relatively little is understood about the heterogeneity in experiences and circumstances of this group, and how they may differentially affect the health of different segments of the Latino population. Recent work suggests not all Latinos experience the same rates and risk of illness (2-5). By and large, findings across studies point to a jeopardized health status of Puerto Ricans and an advantaged health status of Mexicans, whereas Cubans (and "Other Latinos") tend to show health disparities and advantages (2, 3). Similarly, studies stratified by acculturation level find that less acculturated Latinos (e.g., foreign born, those with lower proportion of time spent in the US) have better health and lower mortality rates than their more acculturated counterparts (4). Yet, other studies find results also vary by gender, race, and health outcome (2-5). Findings of Latinos in the aggregate do not necessarily represent an accurate portrayal of the health advantages and disparities among this group.

Further, there has been a lack of research that goes beyond comparisons of group health profiles and that explores patterns in the association of mechanisms that may be driving these differences. It has been argued that to understand differences in health profiles between and within racial/ethnic groups requires drawing attention to differential exposure to social stressors, such as discrimination (6). Everyday discrimination, conceptualized as subtle unfair treatment that occurs within daily routine practices (7), is commonly understood to be a social stressor that adversely affects mental and physical health (8). That is, the stress that results from being treated rudely, ignored, or thought of as less smart, for example, is thought to accumulate over time, triggering psychological and physiological responses that may adversely affect the health of those discriminated against. However, these forms of unfair treatment are not randomly distributed, but rather socially patterned, with several studies reporting ethnic minorities are more likely to be targets of discrimination than non-Latino whites (8, 9). Indeed, experiences of discrimination are not foreign social phenomena for most Latinos, with national prevalence rates of discrimination ranging from 30 to 83 percent (9). Surprisingly, only a handful of studies have examined the relationship between self-reported discrimination and health status among Latinos, with most studies finding a significant inverse association, even after accounting for acculturation, acculturative stress, and sociodemographic factors (10, 11). However, the pathways through which self-reported discrimination influences the health of Latinos remain largely understudied and thus poorly understood.

In the present study, we are guided by Williams and colleagues' (6) conceptual framework for understanding the relationships between race and health, as it identifies discrimination as a central component of race and ethnicity that is related to ill health and which produces particular patterns in disease. Their model focuses on macrosocial and societal factors (e.g., racism, economic, social forces) that are interrelated and together affect health through proximal intermediary mechanisms. Of interest to our study, one component of their model postulates that discrimination can adversely transform social status, which in turn may negatively affect psychological factors, and ultimately, an individual's health status. At the same time, this part of the model posits that psychological factors may mediate the relation between discrimination and health status, independent of social status (6). Accordingly, we focus on subjective social status and psychological distress as two intermediary mechanisms through which everyday discrimination may influence self-rated physical health, given that Latinos are: disproportionately exposed to discrimination (9); generally concentrated at lower levels of socioeconomic status (SES) (12); and evidence higher rates of depressive

symptomatology than their non-Latino white counterparts (13), all of which may combine to place Latinos at increased risk for ill health.

Consistent with Williams and colleagues' theorizing, substantial research finds that discrimination can influence how individuals think about and view themselves compared to others (14, 15). For example, discrimination can convey to individuals that they are devalued in society and are different, since perceptions of discrimination among racial/ethnic minorities are typically viewed and experienced as rejection from the majority (16). Although these studies have primarily focused on discrimination's influence on racial/ethnic identity, perceptions of discrimination may also influence an individual's perceptions of their social status, since it is also a part of one's identity (17). In fact, research shows that members of stigmatized groups are keenly aware of how others perceive and evaluate them (14, 15). Because our interest is on how discrimination may be associated with health through social status, we focus on subjective social status—a person's belief about his/her location in the status order (18)—given that as a psychological variable, it more clearly brings into focus an individual's understanding of their hierarchical position vis-à-vis others in the larger society (19). Unlike traditional measures of SES, subjective social status incorporates various dimensions of SES and reflects an individual's assessment of their past and current social standing (18). Although the association between discrimination and subjective social status remains unexamined, research shows members of stigmatized groups who are aware of society's negative views of their group may be more likely to internalize this negative evaluation (16). To the degree that social status is part of one's identity, and that Latinos perceive they are discriminated against and occupy a lower social status (20), it is likely that they may internalize differential treatment; in turn, believing they reside at lower levels of the social hierarchy (14, 20).

Further, subjective social status as a form of social comparison or relative social position is thought to make individuals feel depressed if they believe they are below others (18, 21). Extant studies have demonstrated that a perceived lower social status can engender mental health problems (18, 22), whereas perceiving oneself as having a higher social standing can decrease the likelihood of illness (2). For example, Alegría et al. (2) found that self-perceived high social standing was significantly associated with a decreased likelihood of depressive disorders among a national sample of Latino adults, and Franzini and Fernandez-Esquer (22) found that a perceived low social status in the US was associated with lower self-rated mental health among Mexican-origin persons. Moreover, negative affect has been suggested as a key factor underlying poor health status. Specifically, studies find that psychological distress mediates the relation between discrimination and health among Latinos, and that this effect is stronger for Latinos than for other racial/ethnic groups (23). Indeed, discrimination has been argued to be not just an added form of stress, but also a pathogen that generates depression among people of color (24). Similarly, studies find that psychological distress mediates the relation between subjective social status and health, suggesting that perceptions of low social status may produce negative emotions that translate into poor health through neuroendocrine mechanisms (25). For example, similar to the psychobiological consequences of exposure to social stressors, perceiving oneself as occupying a lower social status may evoke social-evaluative threat that can result in negative cognitions and emotions, which may in turn elicit acute physiological activation of the sympathetic nervous system, the hypothalamic-pituitary-adrenocortical axis and inflammatory responses (26). If these responses are prolonged, they can promote long-term pathogenic mechanisms that may confer increased risk for disease (26). Theoretical and empirical works suggest that jointly, subjective social status and psychological distress may mediate the association between self-reported everyday discrimination and self-rated physical health.

Significantly, we situate Williams and colleagues' model within the intersectionality perspective, which emphasizes the importance of considering the mutually constitutive ways in which social status categories shape experiences, outcomes and processes (27). Moreover, an intersectional perspective is sensitive to power differentials *within* and *between* groups comprised in an aggregated category. The structured interconnections among social categories can create unique axes of difference and may shape exposure to discrimination and its impact in complex ways. Thus, an intersectional perspective can help us to identify subgroups of Latinos that may be at greatest risk of ill health under specific conditions (28), without isolating our findings from larger social processes. As such, there is reason to believe the pathways linking discrimination to health status may be both gendered and ethnicized, particularly because the differential social positioning of men and women of color can result in heterogeneity in axes of privilege and disadvantage within and between Latino subgroups, which in turn generally result in Latino men and women confronting diametrically different social experiences (28).

Prior studies suggest there are differences in men and women's appraisals of stressful situations and thus may respond differently to stressors (29). Further, research suggests that the need to maintain a positive sense of self presents itself as a greater challenge for individuals who belong to social groups that are devalued, given they are more likely to engage in psychological work aimed at revaluing their group membership (30). Among Latinos, men and women may differ on the degree to which discrimination is associated with subjective social status, given Latino women hold multiple stigmatized identities in terms of their ethnicity and gender (though they may also hold privileged statuses), yet a man's traditional sense of self is usually driven by status, achievement, and socioeconomic factors (31). For example, despite being US citizens, Puerto Ricans report higher levels of discrimination and have generally been relegated to the lowest rungs of the U.S. social hierarchy when compared to other Latino subgroups (12). Yet for Puerto Rican men, experiencing discrimination may present itself a more salient factor associated with subjective social status, given a person's perception of social status concerns a belief about his/her place in the social hierarchy, and in general, this group is by many measures one of the most socially marginalized US citizens (9, 12). Thus, it is expected that Puerto Rican men's subjective social status is more likely to suffer from discrimination to a greater extent than that of other Latino men and women, since as Hurtado and Sinha (30) noted, a group's status achieves significance in relation to perceived differences and stigmatized social formations. Indeed, perceiving disproportionate levels of discrimination may result in a heightened awareness of where one resides in the social hierarchy and for Puerto Rican men in particular, may result in greater negative self-evaluation of their social status.

At the same time, the effects of psychosocial stressors may vary depending on the outcome. For example, though men typically report higher levels of discrimination (9), women generally embody stressors differently than men, such as exhibiting higher levels of psychological distress in response to stress (29, 31). Finch et al. (32) found that in a sample of Mexican Americans, perceived discrimination was associated with increased levels of psychological distress, but the effect was stronger for women. However, no studies have examined whether this effect is stronger among certain groups of Latino women, despite notable differences in the social stressors experienced between different groups of Latinas (28). Further, scholars suggest that the closer the sense of perceived unfairness is to one's self, the more severe the degree of the psychological outcome (33). Jointly, this suggests that it is plausible that the effect of discrimination on psychological distress may be augmented for Puerto Rican women, who by account of their multiple stigmatized social identities, evidence higher levels of unfair treatment and other social stressors compared to their Latino female and male counterparts (9).

Further, prior research finds that subjective social status seems to be a stronger predictor of health outcomes among those less likely to benefit from increases in SES possibly because among those with already high levels of SES, issues concerning social position may be more salient, whereas for economically disadvantaged groups, increases in income or education may materialize into better health (34). However, much of the research on Latinos has typically regarded the group as all occupying a low social class standing, despite data showing Cubans evidence greater degrees of economic resources than most other Latino subgroups (2, 12). Also, the intersectionality perspective suggests one social category alone does not determine whether one occupies a superordinate or subordinate position. For example, Cuban women generally possess greater access to economic resources not afforded to other Latinas as a result of their nationality and relational positioning to Cuban men, the highest earners of all Latino subgroups. Thus, we would expect that the effect of subjective social status to be most strongly associated with psychological distress among the most economically privileged groups of Latinos, such that Cuban men and by extension, Cuban women, should be the most vulnerable to a perceived low social status when compared to other Latinos, who may not benefit much psychologically from perceptions of high social status.

Lastly, studies find that in general, psychological distress is strongly associated with poorer physical health (32). Moreover, prior research has found that Puerto Ricans in general report higher levels of somatization and psychological distress than other groups of Latinos (35). Further, when data on Latinos is stratified by gender, Latino women report greater psychological distress than their male counterparts (35). Together this suggests that the effects of distress on physical health may be particularly stronger for Puerto Rican women than for Puerto Rican males and other Latino women.

The present study examines the mediating role of subjective social status and psychological distress on the relation between self-reported everyday discrimination and self-rated physical health among a nationally-representative sample of Latinos. We predict that everyday discrimination will be associated with a perceived lower social status, which in turn will be related to greater levels of psychological distress; and in turn, psychological distress will be associated with poorer self-rated physical health. Moreover, given the heterogeneous patterns seen in social experiences and health status across Latino subgroups, we test the moderating role of Latino subgroup membership (gender by ethnicity) in the aforementioned relations. For all the reasons noted above, we hypothesize the following: (a) the effect of everyday discrimination on self-rated physical health will be stronger for Puerto Rican men and Puerto Rican women, compared to Cuban men, followed by other Latino subgroups; (b) the effect of everyday discrimination on psychological distress will be stronger for Puerto Rican women, followed by other Latinas, compared to Latino males; (c) subjective social status will have a stronger association with psychological distress among Cuban men, followed by Cuban women, compared to other Latino subgroups; and lastly, (4) psychological distress will be more strongly associated with self-rated physical health among Puerto Rican women, followed by Puerto Rican men, compared to all other Latino subgroups.

Method

Sample and Procedures

The sample consisted of 2,554 Latino adults 18 years and older who participated in the National Latino and Asian American Study, a nationally stratified area probability sample of non-institutionalized persons living in the coterminous US. The sample was comprised of the three largest Latino groups in the US (Cubans, Mexicans, and Puerto Ricans) as well as “Other Latinos.” For purposes of our study, we stratified these groups by gender and

ethnicity: Cuban men (n= 276, 2.38%); Cuban women (n= 301, 2.24%); Puerto Rican men (n= 213, 5.17%); Puerto Rican women (n= 282, 4.87%); Mexican men (n= 398, 29.17%); Mexican women (n= 470, 27.46%); Other Latino men (n= 240, 14.78%); and Other Latino women (n= 374, 13.91%). The proportion of each Latino group corresponds to the 2000 Census demographics. Of the total sample, 42.8% were US-born and 57.2% immigrants. The mean age of the sample was 38.02 years ($SD= 15.03$).

Data collection took place between 2002 and 2003. The sample design is only briefly described here (see [36] for more details). To obtain a nationally representative sample of Latino subgroups regardless of geographic residential patterns, the sampling design included three components: (1) core sampling of primary and secondary sampling units; (2) high-density supplemental samplings of census block groups in order to over sample geographic areas made up of more than 5% of the targeted ethnic group; and (3) secondary respondent sampling to recruit participants from households where a primary respondent had already been interviewed (37). The final weighted response rate for the Latino sample was 77.6%.

Primary mode of data collection was by in-person interviews conducted in either English or Spanish. Instruments were translated using standard translation and back translation (see [38] for more details on instruments). Approximately 47% of the respondents were interviewed in English. Cubans (66.6%), followed by Mexicans (56.7%), were the two groups most likely to be interviewed in Spanish, whereas Puerto Ricans were more likely to be interviewed in English (60.1%). Written informed consent was obtained from all study participants. The University of Michigan, the Cambridge Health Alliance, Harvard Medical School, and the University of Washington's Internal Review Board Committees approved all study procedures.

Measures

Everyday Discrimination—Self-reported everyday discrimination was measured using the Everyday Discrimination Scale (EDS; 39), which assesses perceptions of routine unfair treatment. Respondents reported frequency of each item on a 6-point scale ranging from 1= daily to 6= never. Following recommendations of a recent psychometric study of the EDS (40), we dropped the first item “You are treated with less courtesy than other people” because it was highly correlated with the second item “You are treated with less respect than other people.” Responses to the eight items were reverse coded and summed, with higher scores reflecting greater frequency of discrimination ($= .89$). Additionally, confirmatory factor analysis (CFA) was used to confirm the dimensionality of the EDS. Consistent with the original formulation of the EDS, our CFA revealed a single-factor solution that had good fit to the data (Comparative Fit Index [CFI]= .91; Root mean square error of approximation [RMSEA]= .06; standardized root mean square residual [SRMR]= .05), confirming the construct validity of the EDS for Latinos. These findings are consistent with those found for African and Asian Americans, and are sufficient for racial/ethnic group comparisons (40).

Subjective Social Status—Respondents were shown a graphic representation of a ladder with 10 rungs that was described to them as follows:

“Think of this ladder as representing where people stand in the United States. At the top of the ladder are the people who are the best off—those who have the most money, the most education and the most respected jobs. At the bottom are the people who are the worst off—those who have the least money, least education, and the least respected jobs or no job. The higher up you are on the ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom” (18).

Respondents were then asked: “What is the number to the right of the rung where you think you stand at this time in your life, relative to other people in the United States?” This measure was coded as a continuous variable, ranging from 1 (at the bottom) to 10 (at the top). This measure is a strong predictor of health and has sound psychometric properties (18).

Psychological Distress—Non-specific psychological distress was measured with the Kessler Psychological Distress Scale (41), a 10-item inventory that assesses the prevalence of negative feelings, including depressive and anxious symptoms, over the past 30 days. Respondents reported frequency of each item on a 5-point scale (1= *all of the time* to 5= *none of the time*). Raw variables were reverse coded and summed, with higher values reflecting greater levels of psychological distress ($\alpha = .90$). The Kessler Psychological Distress Scale is routinely used in population health surveys and its reliability and validity is well established (41).

Self-Rated Physical Health—We measured self-rated physical health with a single item: “How would you rate your overall physical health?” Responses were rated on a 1 (*excellent*) to 5 (*poor*) point scale. Responses to this item were reverse coded, with higher scores reflecting better health. Similar to other studies, this measure was used in analyses as a continuous measure.

Covariates—We included the following covariates: gender and ethnicity (for total sample analyses); age; educational attainment; marital status; employment status; and household income. Measures used to adjust for acculturation included: nativity; language of interview (English vs. Spanish); and years in the US. Further, because our analyses focused on everyday discrimination, we adjusted for attribution to discrimination in our models. Respondents were asked what they considered to be the main reason for their experiences of everyday discrimination. Based on the distribution, we dichotomized responses into “race/ethnicity-related reasons” versus “other” (e.g., age). Lastly, using the Crowne-Marlowe scale (42), we assessed social desirability bias, the tendency to report information the respondent thinks others might want to hear.

Statistical Analysis

All descriptive analyses were conducted using Stata 11 to account for the complex sampling design, and allow estimation of standard errors in the presence of stratification and clustering. The distribution of sociodemographic characteristics by Latino subgroups was analyzed (see Appendix 1 in the Electronic Supplementary Material [ESM]). Intercorrelations between key variables were computed for the total sample and by subgroups (see Appendix 2 in the ESM). Adjusted Wald test was employed to test for significant overall difference in means of key variables across the eight subgroups.

Main analyses consisted of testing a three-path mediation model using Mplus in a single and multiple-group framework, where we estimated all path coefficients simultaneously, controlling for covariates for the total sample and by subgroups, respectively. The advantage of this approach is that it allowed us to investigate the indirect effect passing through both of these mediators in a series (43). We were also able to isolate the indirect effect of both mediators: subjective social status and psychological distress. Path models were fitted using the robust maximum likelihood estimator (MRL) for continuous variables, accounting for missing data, and heteroskedasticity and non-normality due to clustering and stratification. Mplus uses the Sobel test to calculate indirect effects, and employs the Delta method to calculate standard errors of the indirect effects. Simulation studies suggest parameter estimates and standard errors using MLR would be identical to those obtained with the

bootstrapping procedure (44). Multiple-group path analysis was employed to examine and test whether differences in the structural parameters across groups were statistically significant. Testing for cross-group invariance involved comparing two nested models: 1) a baseline model wherein no constraints were specified and 2) a second model where all paths were constrained to be invariant between the groups. Comparison of nested models employed a robust nested chi-square test as implemented in Mplus. Moderation analysis was conducted through a series of multiple linear regressions rather than through tests of invariance for specific paths in order to use model coefficients to calculate predicted marginal means for each of the dependent variables and illustrate and facilitate interpretation of significant interaction effects. Continuous predictor variables in moderation analyses were centered at their mean in order to minimize issues of multicollinearity (45). The Holm test adjustment was used to control experimentwise error rates for multiple pairwise comparisons of slopes.

Results

Descriptive Statistics

Appendix 1 (in ESM) presents the group distribution of sociodemographic characteristics. Significant differences across groups were noted for nativity, household income, employment status, and marital status. Although an overall significant difference in proportions was noted across Latino subgroups on household income, differences between groups became non-significant once the Bonferroni correction was applied.

Table 1 presents means of key variables used in the models for the total sample and by Latino subgroup. Significant Latino subgroup differences were noted for everyday discrimination, psychological distress, and self-rated physical health, even after we applied the Bonferroni correction.

Model Testing and Mediating Effects for Total Sample

The three-path mediation model was first tested among the total sample. Fit indices found to be the most insensitive to sample size showed that our model had an excellent fit to our data [χ^2 (42, N = 2,554) = 101.43; RMSEA = .02 (90% CI = [.02, .03]); CFI = .93; SRMR = .01]. We retained this model for subsequent analyses. First, everyday discrimination was negatively related to subjective social status (β = $-.10$, p < .01). Second, subjective social status was negatively associated with psychological distress (β = $-.10$, p < .001). Lastly, psychological distress was negatively related to self-rated physical health (β = $-.24$, p < .001). We found that subjective social status and psychological distress sequentially mediated the relationship between everyday discrimination and self-rated physical health (standardized indirect effect = $-.002$, SE = .00, p < .05). That is, everyday discrimination was associated with lower subjective social status and increased psychological distress, which related to poorer self-rated physical health, adjusting for covariates. Tests of specific indirect effects showed that psychological distress serves as a mediator of the everyday discrimination and self-rated physical health relation, while controlling for subjective social status and covariates (standardized indirect effect = $-.062$, SE = .01, p < .001); and subjective social status serves as mediator of the everyday discrimination and self-rated physical health relation, controlling for psychological distress and covariates (standardized indirect effect = $-.008$, SE = .00, p < .05).

Multiple-Group Path Analysis

Constraining the structural parameters in the three-path mediation model to be equal across the eight subgroups resulted in a statistically significant worsening of overall model fit (χ^2 = 299.97, df = 168; p < .05), rejecting the null hypothesis that the paths (as a whole) are the

same across the eight Latino subgroups. The fully unconstrained path model provided an adequate fit to the data [$\chi^2(272) = 413.63$, RMSEA = .04, CFI = .89, SRMR = .03]. Table 2 shows the estimates of the indirect effects and Appendix 3 in ESM shows results of direct effects by subgroups. Across Latino subgroups, we did not find that the relationship between everyday discrimination and self-rated physical health was sequentially mediated by subjective social status and psychological distress. Rather, tests of other specific indirect effects revealed that psychological distress fully mediated the relation between everyday discrimination and self-rated physical health for Cuban women, Mexican men and women, and Other Latino women; and partially mediated it for Other Latino men, controlling for subjective social status and covariates. Additionally, subjective social status mediated the everyday discrimination and self-rated physical health relation for Puerto Rican men, independent of psychological distress and covariates. There were no significant indirect effects for Cuban men or Puerto Rican women.

We further tested our hypotheses that certain groups would differ from others on each of the relations in the path model. Results showed that Latino subgroup membership moderated the: relations between: (a) everyday discrimination and subjective social status; (b) everyday discrimination and psychological distress; and (c) psychological distress and self-rated physical health. No subgroup differed from another on the subjective social status and psychological distress path. Cuban men differed from Puerto Rican women on the relations between everyday discrimination and subjective social status ($\beta = -.07$, SE = .02, $p < .01$). Mexican women differed from Cuban men ($\beta = -.31$, SE = .07, $p < .01$) and Puerto Rican men ($\beta = -.24$, SE = .08, $p < .01$) on the everyday discrimination and psychological distress path. Lastly, Cuban men differed from Mexican women on the psychological distress and self-rated physical health path ($\beta = .04$, SE = .01, $p < .01$). Group differences in slopes were most apparent for the relations between everyday discrimination and psychological distress (see Figure 1).

Discussion

The goal of the present study was twofold: (a) to examine whether the link between everyday discrimination and self-rated physical health was mediated by subjective social status in the US and psychological distress and (b) to examine the potential moderating effect of Latino subgroup membership on relations in the mediation model. The foregoing analyses document the complex ways that everyday discrimination may potentially influence the health status of different groups of Latinos.

Our path analysis results provided support for our initial hypothesis. We found that among the total sample, everyday discrimination was related to poorer self-rated physical health through perceived lower social status in the US and greater psychological distress, even after accounting for sociodemographic factors. Consistent with social stress theory (46), our findings suggest that perceiving discrimination may be indirectly related to poor health because discrimination may lead to secondary stressors that together, may contribute to ill health. Alternatively, framed within the psychological theory of the looking glass (47), which posits that marginalized individuals may come to internalize differential treatment and negative evaluation, routine experiences of discrimination may provoke internalization of a devalued self, since as a type of identity relevant stressor (8) it may include assessments of one's social status via others in the US and could potentially generate psychological distress and be embodied as poor self-rated physical health (6, 8).

Results from our multiple-group path analysis offered a more complex picture of how the associations linking discrimination to self-rated physical health are conditioned by Latino subgroup membership. For most Latino subgroups, our findings showed that psychological

distress on its own mediated the relationship between everyday discrimination and self-rated physical health. Our findings are consistent with Williams et al.'s (6) theorizing that discrimination may also be related to poor health status through psychological factors independent of social status, and parallel findings from empirical research that show depressive symptomatology partially mediates the effect of discrimination on self-rated health among Latinos (23). These findings lend support to the conceptualization of everyday discrimination as a form of chronic stress; and that for ethnic minorities, pervasive experiences of discrimination rather than isolated occurrences are robustly and adversely related to mental health (48).

We also found that subjective social status mediated the relation between everyday discrimination and self-rated physical health for Puerto Rican men, independent of psychological distress and sociodemographic factors. Puerto Rican males experience many social and economic inequalities that other Latinos do not experience, and in our study also reported the highest levels of everyday discrimination despite being US citizens. Against this backdrop, perhaps routine experiences of unfair treatment and inequality may heighten their attention to negative social information and experiences, which might compromise their perceived value or status in society, which in turn could potentially influence their health (cf. 49, 18). The juxtaposition of Puerto Rican men's privileged statuses as men and as American citizens while being economically and socially marginalized in US society may possibly contribute to a unique sense of dissonance and type of stressor perhaps not experienced by other Latinos, which over time, might take a toll on the physical health of this group (2).

Moreover, Latino subgroup membership moderated each relationship in the path model, which may explain differences in pathways linking everyday discrimination to self-rated physical health. First, we found partial support for our second hypothesis. In the context of high levels of discrimination, Puerto Rican women (compared to Cuban men) were predicted to have a lower subjective social status in the US. Framed within a relational perspective, if Puerto Rican men disproportionately experience discrimination and economic inequality, then the effects of this kind of marginality will possibly reverberate in the lives of Puerto Rican women, who are very likely to be emotionally, socially and economically interdependent with Puerto Rican men (cf. 50). This may possibly contribute to Puerto Rican women perceiving they occupy a lower social status in the US to a greater extent than Cuban men, who in our data report the lowest levels of everyday discrimination and who may experience distinct forms of privilege not afforded to other groups of Latinos and which may serve as buffers to the potential deleterious effects of discrimination on subjective social status.

Contrary to our third hypothesis, we did not find that the effect of subjective social status on psychological distress was more pronounced for Cuban men and women compared to other groups. In fact, this path was not moderated by Latino subgroup membership, suggesting that the effects of subjective social status appear to be the same across groups. That is, perceiving a high social status is associated with lower levels of psychological distress, irrespective of one's gender or ethnicity. This is consistent with other studies that find that a perceived higher social status is a protective factor associated with reduced risk of depression among different groups of Latinos in the US (2).

Partially consistent with our hypotheses, everyday discrimination had a stronger effect on psychological distress among Mexican women compared to Cuban and Mexican men. These results are somewhat consistent with prior studies that find that among the Mexican population, the effects of discrimination are greatest among Mexican women (32). Further, research shows that Mexican women are exposed to concomitant stressors (29) and

disproportionately experience high levels of poverty (12, 28). Certainly, the stress that typically results not just from perceiving discrimination, but also from chronic poverty, acculturation, and family and work conflict may be implicated in the mental health of Mexican women (29). On the other hand, Mexican women may differ from Cuban and Puerto Rican men for different reasons. It may be that Puerto Rican men, who already report experiencing higher levels of discrimination, may not experience the psychological costs to the extent that Mexican women do, especially if they already expect to experience unfair treatment (9). Cuban men on the other hand, report lower levels of everyday discrimination, and thus discrimination may be less salient factor compared to other factors (i.e., wealth) shown to adversely affect their mental health, independent of discrimination and SES indices (51).

Lastly, Cuban men's self-rated physical health (compared to Mexican women) was predicted to suffer to a greater extent in the context of high levels of psychological distress. It may be that psychological distress is more strongly associated with self-rated physical health for Cuban men under conditions of gender role strain. For example, Cuban men have been shown to report that they are mainly responsible for household expenses in addition to sharing household responsibilities to a greater extent than other Latino men (52). Thus, their health may be more compromised because of higher levels of psychological distress within the context of socially prescribed responsibilities and expectations to maintain their relatively privileged status. This may not be the case for Mexican women, who may be better able to cope with multiple demands in the context of higher levels of psychological distress (29) and who compared to Cuban men, may not have pressures associated with maintaining a high social standing.

Study Limitations and Directions for Future Research

Despite the unique contributions of our study, several limitations warrant consideration. First, although the conceptual model was empirically supported, it was tested using cross-sectional data, limiting our ability to discern causal or temporal relations. Although our model was theoretically-based and there is longitudinal research that suggests the ordering of these variables follow the pattern in which they were tested (53), alternative models cannot be ruled out. Likewise, because the National Latino and Asian American Study did not include measures of affective disposition such as trait hostility, which could serve as a common "cause" of both psychological distress and self-rated physical health, we were unable to test whether discrimination is associated with these outcomes independent of negative disposition. A more stringent test of our model would require employing a longitudinal study design and being able to control for individual difference factors. Importantly, a limitation of applying Williams and colleagues' (6) model to Latinos is that it was not developed for any one racial/ethnic group, and thus is limited in its ability to fully capture the range of factors that may contribute to the health patterns among any one group. For example, despite that Latinos and other racial/ethnic groups are racialized and are generally exposed to greater levels of discrimination than their non-Latino white counterparts, they differ on a number of historical, sociodemographic and cultural factors, all of which can translate into differential outcomes across racial/ethnic groups. Likewise, Williams et al.'s model centralizes racial discrimination, although among Latinos, discrimination based on language and legal status have also been argued to be critical for understanding variations in health status among this group (10).

Relatedly, there is a strong possibility that social experiences and status may take on different meanings for the same individual at a later time or in different circumstances. For example, in a survey conducted in 2009 (54), 23% of Americans said Latinos are discriminated against "a lot," making them the racial/ethnic group Americans felt were most often subjected to discrimination in today's society; this percentage represents a change

from 2001, when 25% of Americans said blacks were discriminated against “a lot” and only 19% said the same regarding Latinos during the same period. Unfortunately, we are unable to examine the stability or salience of perceptions of discrimination or social status between the time the data were collected and today’s context, since measures were assessed at one time point. In the future, researchers might consider how changes in the sociopolitical climate influence perceptions of discrimination, and in turn, how these changes may affect perceptions of status and health.

Despite the wide use of the self-rated physical health measure, prior studies have found that it may have limited validity among Latinos, especially since immigrant and Spanish-speaking Latinos tend to report poorer health, despite being healthier on objective health measures (55). However, most of these studies have focused on regional and Mexican samples. Nonetheless, researchers have suggested that the discrepancies found are in part accounted for by acculturation, socioeconomic status and linguistic factors (55). Accordingly, our analyses adjusted for acculturation proxies in addition to sociodemographic factors and social desirability. Further, the use of single-item measures could represent inadequate indicators of these constructs. Future research would benefit from including multiple-item self-report and objective measures validated on diverse samples of Latinos. Further, a prior study found that the association between subjective social status and health outcomes may vary depending on the comparison group, and that more proximal comparisons may be better predictors of health (22). We conducted supplementary analyses using the subjective social status in the community measure and our results remained unchanged. Important to note is that the aforementioned study focused on low-income, mainly Mexican women in Texas; thus, their results may not be generalizable to other Latinos of varying SES levels.

Additionally, the social categories used can only serve as proxies for actual gender and ethnic-related constructs. To understand the statistical association of “gender” and “ethnic” effects on health requires inclusion of constructs that are embedded within these social categories (e.g., gender role strain, cultural values, access to resources; 36). In fact, given the interactive nature of acculturation among Latinos, future research should pay greater attention to the synergistic ways in which the aforementioned constructs in addition to discrimination and acculturation may structure the health of Latinos. Research in this area is clearly needed to discern how such factors play a role in how Latinos cope with discrimination. Relatedly, the role of race among Latinos was not investigated, as the data did not lend itself to it. Evidence suggests that Latino blacks generally experience higher levels of discrimination (10) and are more likely to rate their health as fair/poor (56) than Latino whites. Likewise, discrimination and racialization influence self-identity (15), and thus is plausible that they too may influence one’s perceived social status (17). Whenever possible, future studies should also aim to account for racial heterogeneity in order to better explain the differential and paradoxical health profiles that exist among Latinos. Relatedly, a limitation of our study is the inconsistency in findings, which might be attributed to not having been able to account for factors such as race, acculturation in its multidimensional form, as well as inclusion of specific assessments of health conditions.

Lastly, incorporating qualitative methods may aid us in understanding the subjective meanings and contours of discrimination experiences and social status across different groups of Latinos, since these approaches can capture experiential depth and may facilitate a more contextualized study of how Latinos’ social experiences may relate to their health. Likewise, since ecological contexts shape the meaning of experiences and risk of illness (6), multilevel studies that take into account the role of structural discrimination (e.g., residential segregation) may provide further insight into the social structural situations in which different groups of Latinos find themselves, within their sets of resources and vulnerabilities

(15). Findings from such studies could potentially assist in the development of empirically-based theoretical frameworks for understanding Latino health in all its complexity.

Conclusion

Our study is contributory to the existing literature as it highlights potential psychosocial mechanisms by which everyday discrimination may be associated with self-rated physical health among diverse groups of Latinos. Our results suggest that not all Latinos appear equally affected by everyday discrimination, subjective social status, or psychological distress. Even when associations might look similar, their underlying dynamics may be different. This implies caution be taken when analyzing data on Latinos in the aggregate, as it could mask intra-group differences. In the same vein, another implication is that prevention and intervention efforts may need to be tailored for specific subgroups that may be most vulnerable to experiences of discrimination and perceived low social status. Further, echoing Williams and colleagues' (6) suggestions, understanding the complex ways in which experiences of discrimination structure the health of racial/ethnic minorities requires situating it within a larger sociocultural, historical and political context. Indeed, Pearlin (46) noted that the social structures in which individuals are embedded will determine the stressors they encounter, the experience of stress, as well as the coping resources they are able to garner. Finally, our current findings provide important contributions that underscore the need for continued research on processes that may underlie health disparities, and for understanding paradoxical health findings among Latinos. Attending to the complexity of the Latino experience in the US and its relation to health clearly remains an important area ripe for scientific study with significant policy and public health implications. **Conflict of Interest:** The authors have no conflict of interest to disclose.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

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Figure 1.
Predicted Marginal Means of Psychological Distress as a Function of Everyday Discrimination and Latina/o Group Membership

Table 1

Latina/o Subgroup																				
Total Sample			CM		CW		PRM		PRW		MM		MW		OLM		OLW		<i>p</i> ±	
Measure	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD		
ED <i>a,b,c,d</i>	14.25	6.83	12.42	12.17	11.53	10.39	16.10	9.53	15.04	9.35	14.62	5.18	13.24	5.13	6.08	13.12	6.16	671.14	***	
SSS-US	5.51	1.97	5.69	4.09	5.68	4.59	5.77	2.37	5.42	2.80	5.24	1.38	5.52	1.72	5.72	5.60	2.01	936.06	***	
PDE <i>f,g,h,i</i>	11.72	6.68	10.43	11.12	12.85	18.42	12.59	9.41	14.10	12.08	10.38	4.15	12.37	5.65	10.77	4.48	13.11	7.78	592.64	***
SRPH <i>aa,bb,cc,dd</i>	3.26	1.09	3.81	2.29	3.47	2.67	3.40	1.38	3.22	1.79	3.23	0.80	3.01	0.89	3.61	0.80	3.17	1.05	2649.23	***

Note. CM= Cuban Men; CW= Cuban Women; PRM= Puerto Rican Men; PRW= Puerto Rican Women; MM= Mexican Men; MW= Mexican Women; OLM=Oth er Latino Men; OLW= Other Latino Women; ED= Everyday Discrimination; SSS-US= Subjective Social Status in the US; PD= Psychological Distress; SRPH= Self - Rated Physical Health.

[‡]Design-based adjusted Wald tests were used to identify differences across all eight gender by ethnicity groups (omnibus test).

^aCuban men differ from Puerto Rican men/women, and Mexican men.

^b Cuban women differ from Puerto Rican men/women, Mexican men, and Other Latino men.

3 Puerto Rican men differ from Mexican women.

Do Puerto Rican women differ from Other Latino women

^a Cuban men differ from Puerto Rican men/women, Mexican women, and Other Latino women.

f Puerto Rican men differ from Mexican men

gD-4 P: 155 g, M: 104 g, O: 14 g

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Only Latino men differ from other Latino women.

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Table 2
Weighted Unstandardized Path Coefficients from Unconstrained Multiple-Group Path Model by Latina/o Subgroup

	Indirect Effects					
	Total Indirect	ED→SSS→PD→SRPH	ED→SSS→SRPH	ED→PD→SRPH	ED→PD→SRPH	ED→PD→SRPH
	Estimate	SE	Estimate	SE	Estimate	SE
Cuban Men	-.003	.01	.000	.00	.000	.00
Cuban Women	-.024 [*]	.01	-.001	.00	-.002	.00
Puerto Rican Men	-.011 ^{**}	.00	-.001	.00	-.007 [*]	.00
Puerto Rican Women	-.006	.00	-.001	.00	.000	.00
Mexican Men	-.013 ^{***}	.00	-.001	.00	-.002	.00
Mexican Women	-.011 ^{**}	.00	.000	.00	-.001	.00
Other Latino Men	-.011 ^{**}	.00	.000	.00	-.003	.00
Other Latino Women	-.009 [*]	.00	.000	.00	.000	.00

Note: ED= Everyday discrimination; SSS= Subjective Social Status in the US; PD= Psychological distress; SRPH= Self-rated physical health.

Multiple-group path model adjusted for age, income, work status, marital status, education, nativity, language of interview, years in the US, attribution for discrimination, and social desirability.

[†] $p < .10$;

^{*} $p < .05$;

^{**} $p < .01$;

^{***} $p < .001$.