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Gender Differences in the Relationship between Discrimination and Substance Use Disorder among Latinos

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Abstract

Using data from the National Latino and Asian American Study collected in 2002–2003 (N=2,554), we assessed the adjusted odds of lifetime substance use disorder (SUD) associated with report of both unfair treatment and racial/ethnic discrimination. Among men, SUD was increased for those reporting low, moderate, and high levels of unfair treatment compared to those reporting no unfair treatment and patterns were similar for racial/ethnic discrimination. Among women, only those reporting high levels of unfair treatment were at increased risk of lifetime SUD and no associations were observed between racial/ethnic discrimination and lifetime SUD. Future research should examine the role discrimination plays in the development of substance misuse among Latinos.

Introduction

Research has shown that rates of substance use among Latinos increase with time spent in the U.S. (Caetano & Raspberry, 2000; Ehlers, Gilder, Criado, & Caetano, 2009). Latinos' experiences with unfair treatment, especially racial/ethnic discrimination, may lead to increased substance use (Cook, Alegria, Lin & Guo, 2009; Ehlers et al., 2009). Rates of substance use also differ by gender among Latinos, with Latino men having higher rates of problem drinking and drug use (Canino, Vega, Sribney, Warner, & Alegria, 2008). Given that men and women may cope with the stress associated with discrimination differently, it is important to understand the role of gender and discrimination in the risk for substance abuse. This study sought to assess the relationship between discrimination and lifetime substance use disorders among Latinos, and whether this differs for men and women.

Discrimination among Latinos

Latinos are the largest and fastest growing racial/ethnic group in the country (Ennis, Rios-Vargas, and Albert, 2011). They are a diverse group made up of different races and countries of origin, and thus experience unfair treatment due to several factors, including their race/ethnicity, language or accent, nativity, and perceived legal status (Telles & Ortiz, 2008). Studies suggest that both general discrimination (which we refer to as “unfair treatment” in this paper) and discrimination specific to race/ethnicity are common among Latinos living in the US. There is also evidence that discrimination and anti-immigrant sentiment towards Latinos is increasing given recent increases in immigration, debate over immigration policy in the US, and legislation in some states restricting the rights of immigrants (Marrow, 2009; Aponte-Rivera & Dunlop, 2011). According to the National Latino and Asian American Study (NLAAS), 30% of Latinos have experienced unfair treatment (Perez et al., 2008). The National Survey of Latinos found that 82% felt racial

discrimination was a problem that prevents them from succeeding in America (Pew Hispanic Center, 2006). In addition, over 30% reported that they had been personally discriminated against or had someone close to them discriminated against in the last five years because of their racial or ethnic background (Pew Hispanic Center, 2006).

Discrimination, Stress and Substance Use

Research has shown that unfair treatment, especially when based on race/ethnicity, can increase levels of stress in an individual which then influences their health behaviors. Several theoretical models suggest that individuals employ coping responses to manage stressful situations and that substance use is an avoidant coping strategy used to distract oneself and minimize stress (Lazarus & Folkman, 1984; Myers, Lewis, & Parker-Dominguez, 2003). Along with theory, there is substantial empirical evidence that substance use is a common response to social stress (Aneshensel & Phelan, 1999). Stressful situations can induce substance use, because of expectations that the activity will relieve or alleviate stress (Sayette, 2000; Wills & Shiffman, 1985). Furthermore, severe and chronic stressors are associated with higher levels of alcohol consumption when stressors are unavoidable, uncontrollable, or occur in the absence of social support (Canino, 1994; Pohorecky, 1991; Volpicelli, 1987).

Studies have shown that discrimination is associated with unhealthy levels of substance use among racial/ethnic minorities even after controlling for factors such age, education, income, and nativity (Borrell et al., 2010; Chae et al., 2008b; Gee, Delva, & Takeuchi, 2007a; Gee, Spencer, Chen, Yip, & Takeuchi, 2007b, Kim & Spencer, 2011). However, only a few studies have assessed the relationship between discrimination and substance use disorders among Latinos. In a study among Black and Latino transit operators in San Francisco, racial discrimination was associated with higher levels of heavy drinking, odds of alcohol dependence and negative drinking consequences (Yen, Ragland, Greiner, & Fisher 1999a, 1999b). An analysis of data from the Multi-Ethnic Study of Atherosclerosis (MESA), found that Latinos reporting unfair treatment had increased odds of alcohol dependence (Borrell et al., 2010). Zemore, Karriker-Jaffe, Keithly, and Mulia (2011) found that unfair treatment was associated with higher odds of drinking consequences and dependence among Latinos in a national population-based sample. Lo and Cheng (2012) also found that discrimination was associated with current substance use disorder among a nationally representative sample of Latinos, and that this relationship was stronger for those with low levels of education.

Gender Differences in Discrimination and Substance Use

The prevalence of substance use, abuse and dependence is significantly higher among men than women among Latinos (Warner et al., 2006). This may in part be due to gender socialization within Latino culture. For example, greater acceptance of substance use for men (including heavy drinking), and stigma associated with substance use for women (Kulis, Marisiglia, Lingard, Nieri, & Nagoshi, 2008; Mora, 2002). Another possible explanation is that stress impacts Latino men and women's health behaviors differently. While stress is more likely to result in alcohol and drug problems among men, women report higher rates of mood and anxiety disorders when stressed (Thoits, 2010). Very few studies have evaluated gender differences in the effect of discrimination on health, with no studies focused on Latinos (Banks, Kohn-Wood, & Spencer, 2006; McLaughlin, Hatzenbuehler, & Keyes, 2010). Recent reviews on the relationship between discrimination and health have cited a need for more research on gender differences (Paradies, 2006; Williams & Mohammed, 2009).

Present Study

The aim of our study was to assess whether discrimination was associated with lifetime substance use disorder in a population-based sample of Latinos in the U.S. We hypothesized that higher levels of discrimination would be associated with increased risk of lifetime substance use disorder. We focused on substance use disorder because of its established diagnostic criteria and severe impact on health. We assessed both general unfair treatment and racial/ethnic discrimination based on the findings of previous studies showing that these are distinct but related forms of social stress (Chae et al., 2008a; Chae et al., 2008b). Since both have been used in previous studies evaluating the impact of discrimination and substance use, using both measures allowed us to compare our findings to a broader literature. Given patterns of substance use disorder among Latinos and previous studies showing differing health effects of discrimination among men and women, we also hypothesized that this relationship would be moderated by gender, such that the association between discrimination and substance use disorder would be stronger in men than women.

Method

Our study used data from the Latino sample (n=2554) of the National Latino and Asian American Study (NLAAS) which included participants that identified as being of Hispanic, Latino or Spanish descent. A detailed description of the NLAAS sampling and study procedures has been previously documented (Alegria et al., 2004a; Heeringa et al., 2004). Participants were recruited to the NLAAS between May 2002 and November 2003 using three sampling procedures: (1) core sampling using a multistage stratified area probability design, (2) high density sampling to over-sample US Census block groups where individual target ethnic groups (e.g. Cuban, Mexican, and Puerto Rican) represented at least 5% of households, and (3) second-respondent sampling in households where one participant was already recruited. The NLAAS weighted sample is similar to the 2000 Census in gender, age, education, marital status, and geographic distribution but different in nativity and household income, with more U.S. immigrants and lower income respondents in the NLAAS sample (Anderson & Fienberg, 1999).

Interviewers with linguistic and cultural backgrounds similar to those of the target population administered the NLAAS questionnaire. Latino participants could choose to complete the questionnaire in English or Spanish. Measures that were not previously available in these languages were translated from English using standard translation and back-translation techniques (Alegria et al., 2004b). Data was collected by trained interviewers with a 75.5% response rate for our sample. All study procedures and protocols were approved by the institutional review boards of the University of Washington, University of Michigan, Cambridge Health Alliance, and the Harvard School of Public Health.

Lifetime substance use disorder

Lifetime history of substance use disorder was assessed using diagnostic interview of the World Mental Health Survey Initiative version of the World Health Organization Composite International Diagnostic Interview (WMH-CIDI) and is based on Diagnostic and Statistical Manual, Version 4 (DSM-IV) criteria (Kessler & Ustun, 2004). The WMH-CIDI ascertains the use of alcohol and the following drugs, cannabis including marijuana and hashish; opioids including heroin, morphine, and other analgesics such as codeine; stimulants other than cocaine such as methamphetamine; anxiolytics such as sedatives and tranquilizers; hallucinogens (e.g., LSD, peyote); cocaine; and inhalants. Lifetime substance use disorder is generated by the WMH-CIDI if the person ever meets DSM-IV criteria for abuse or dependence of alcohol, or for any of the above mentioned drugs.

Unfair treatment and Racial/ethnic discrimination

General unfair treatment, which refers to the everyday experience of life events perceived to be unfair but not necessarily attributed to a specific cause, was measured with a scale developed by Williams et al. (Williams, Yu, & Jackson, 1997). The scale was scored as the sum of 9 items designed to measure the frequency of routine experiences of unfair treatment (e.g., being treated with less respect, being called names or insulted), with each item having possible responses ranging from never (0) to almost every day (5). Possible total scores ranged from 0 to 45 with a Cronbach's alpha of .91 in the Latino sample (Perez et al., 2008). A priori cutpoints for defining categories of exposure were set at none (0), low (1–9), moderate (10–18), and high (19) based on the distribution of the sample and previous studies using this measure (Chae, Takeuchi, et al., 2008b).

Exposure to racial/ethnic discrimination was measured with a separate instrument consisting of 3 items developed by Vega, Zimmerman, Gil, Warheit and Apospori (1993). Two items measured how often respondents felt they were disliked or treated unfairly because of their race/ethnicity. The third item measured how often the participant had seen friends of the same race/ethnicity treated unfairly because of their race/ethnicity. Items were measured on a 4-point scale ranging from never (0) to often (3), with total scores ranging from 0 to 9 ($r = .81$). Categories of experiences of racial/ethnic discrimination were also constructed based the distribution and prior research: none (0), low (1–3), moderate (4–6), and high (7) (Chae et al., 2008a).

We chose to assess both unfair treatment and racial/ethnic discrimination based on the findings from previous studies. The two measures capture related but different experiences. The correlation between the two measures is $r=0.45$ ($p<.0001$) and among participants reporting no unfair treatment on the Williams measure, 39.1% reported some racial/ethnic discrimination (i.e., low, moderate, and high). Among those who reported no racial/ethnic discrimination on the Vega measure, 45.2% reported experiences of any unfair treatment on the Williams measure (i.e., low, moderate, and high). Other studies assessing the measurement of racial/ethnic discrimination have also found that asking directly about racial discrimination captures dimensions of racial/ethnic discrimination that an attribution item asked after a measurement of unfair treatment does not (Shariff-Marco et al., 2011; Shariff-Marco et al., 2009).

Sociodemographic Variables

We used the following sociodemographic variables to describe the study sample and as covariates: gender, age, marital status, education, income, nativity, ethnicity, and English proficiency. These variables were chosen based on theoretical and empirical evidence suggesting of their relationship to both discrimination and substance use disorder. Age was categorized as 18 – 34 years, 35 – 49 years, 50 – 64 years, and 65 or over. We created three categories for marital status: married, never married, and widowed, separated or divorced. Education was categorized as 11 years or less (less than a high school education), 12 years (equivalent to a high school education), 13 – 15 years, and 16 or more years. Income categories were less than <\$15,000 per year, \$15,000 – \$34,999, \$35,000 – \$74,999, and \$75,000 or more. Ethnicity groups included Mexican, Puerto Rican, Cuban and other. English proficiency was assessed with the following item: “How well do you speak English?” Responses were separated into two categories: “poor/fair” or “good/excellent.”

Statistical Analysis

We used logistic regression to examine associations of lifetime substance use disorder with unfair treatment and racial/ethnic discrimination. We first estimated crude odds ratios for substance use disorder, then calculated adjusted odds ratios controlling for confounders.

Although tests for gender differences (using an interaction term) were not significant, we chose to stratify our sample based on our hypotheses regarding gender differences. Percentages, odds ratios, 95% confidence intervals (CIs), and significance tests were estimated using the SAS-callable Survey Data ANalysis (SUDAAN) software. SUDAAN provides estimates that account for the incorporation of complex survey design methods, including stratification, clustering and weighting procedures.

Results

Table 1 shows the prevalence of lifetime substance use disorder, alcohol abuse and dependence, and drug abuse and dependence by gender (Table 1). The prevalence of lifetime substance use disorder was higher among men (17.3%) than women (4.8%). Table 2 shows the characteristics of the study sample, as well as crude odds ratios for lifetime substance use disorder for each of the socio-demographic variables. Rates of unfair treatment were similar for both genders, although men reported slightly higher frequencies of moderate and high levels of unfair treatment (38.8% vs. 29.0%). This was true for racial/ethnic discrimination, as well (33.8% vs. 27.5%).

For men, low, moderate, and high levels of unfair treatment were associated with increased risk of lifetime substance use disorder compared to those reporting no unfair treatment in the unadjusted estimates. Increased exposure was associated with increased risk, with odds ratios ranging from 2.94 to 7.92. Low, moderate, and high levels of racial/ethnic discrimination were also associated with increased risk of lifetime substance use disorder compared to those reporting no racial/ethnic discrimination, with odds ratios ranging from 1.75 to 3.68. Men ages 35 – 49 had a higher risk than those in the youngest age group (18 – 34) (OR=1.99; 95% CI=1.47, 2.69). Widowed, separated and divorced men also had a higher risk than married men (OR=1.83, 95% CI=1.23, 2.70). Education and income were not significantly associated with lifetime substance use disorder. Cuban men were less likely than Mexican men (OR=0.009; 95% CI=0.25, 0.80) to have lifetime substance use disorder. Foreign-born Latino men had a lower risk than native born (OR=0.31, 95% CI=0.21, 0.46) and those with good or excellent English proficiency had a higher risk of lifetime substance use disorder (OR=2.35, 95% CI=1.57, 3.53).

For women, moderate and high levels of unfair treatment were associated with increased risk of lifetime substance use disorder in the unadjusted estimates. Racial/ethnic discrimination was not associated with increased risk of lifetime substance use disorder at any level. Women that were never married had a higher risk than those that were currently married (OR=3.14; 95% CI=1.55, 6.39). Increased levels of education (13 – 15 years) were associated with increased risk compared to those with less than a high school education (OR=2.57; 95% CI=1.21, 5.46), but this was not true for those with the highest levels of education. Similar to men, foreign born women had a lower risk than native born (OR=0.07; 95% CI=0.03, 0.16) and those with good or excellent English proficiency had a higher risk (OR=20.65; 95% CI=7.95, 53.59). Age, income, and ethnicity were not associated with lifetime substance use disorder among women.

Table 2 presents adjusted odds ratios for both unfair treatment (Model 1) and racial/ethnic discrimination (Model 2) stratified by gender. Adjusted odds ratios for unfair treatment were slightly lower for men than the unadjusted odds ratios. For men, low (AOR=2.62, 95% CI: 1.12, 6.09), moderate (AOR=4.00, 95% CI: 2.07, 7.72), and high (AOR=7.50, 95% CI: 3.26, 17.28) levels of unfair treatment remained significantly associated with substance use disorder even after controlling for covariates and risk increased with levels of exposure to unfair treatment. However, in the adjusted models for women, only high levels of unfair treatment remained significantly associated with increased risk (AOR=2.62, 95% CI: 1.09,

6.30) for lifetime substance use disorder compared to those reporting no unfair treatment. Women's risk at high levels of unfair treatment was comparable to men's risk at low levels. In the adjusted models for unfair treatment being age 35 – 49 was associated with increased risk and being foreign born was associated with decreased risk of lifetime substance use disorder for both men and women.

Moderate, and high levels of racial/ethnic discrimination continued to be significantly associated with increased risk of lifetime substance use disorder in adjusted models compared to those reporting no racial/ethnic discrimination for men. As with unfair treatment, risk increased with levels of exposure to racial/ethnic discrimination. For women, estimates remained similar to the unadjusted odds ratios and non-significant. Being age 35 – 49 was associated increased risk and being foreign-born decreased risk of lifetime substance use disorder for both men and women.

Discussion

Our study sought to examine how the relationship between discrimination and substance use disorders differed by gender in a population-based sample of Latinos in the U.S. As hypothesized, we found that there was a strong relationship between both unfair treatment and racial/ethnic discrimination and lifetime substance use disorder, but only among men. Strengths of the study included the nationally representative sample of Latinos and well-validated outcome measures. Below we highlight the contribution of our research in better understanding the relationship between discrimination and substance use disorders.

Patterns of Discrimination and Lifetime Substance Use Disorder

Experiences with unfair treatment were quite common in our sample and generally similar for both men and women. The prevalence of racial/ethnic discrimination was slightly lower overall, with men reporting more experiences than women. Rates of substance use disorder were consistent with previous studies' findings that Latino men have a higher prevalence of lifetime substance use disorder than women and that foreign-born Latinos have a lower prevalence compared to those born in the US (Breslau et al., 2005; Caetano, 1987; Lara et al., 2005; Vega and Amaro, 1994). Speaking English well was associated with higher odds of having a substance use disorder for both Latino men and women in our sample. Language use and proficiency are often used as a proxy for acculturation and previous studies on acculturation and alcohol use have shown that this relationship is generally stronger for women than men (Karraker-Jaffe & Zemore, 2009; Zemore, 2005; Zemore, 2007).

Discrimination and substance use disorders

Unfair treatment was significantly associated with a history of substance use disorder for both men and women. Odds ratios were higher for men and showed a more consistent relationship with risk increasing with exposure to unfair treatment. For women, only the highest level of unfair treatment was associated with increased odds of having lifetime substance use disorder, suggesting that unfair treatment may be less likely to lead to substance use disorder among women or that women have a higher threshold for this type of disorder. Our findings are consistent with previous studies showing the relationship between discrimination and problem drinking (Lo & Cheng, 2012; McLaughlin et al., 2010; Ornelas, Eng, and Perreira, 2011; Tran et al., 2010; Zemore et al., 2011). The strength of the associations we observed were also similar to Chae et al.'s (2008b) findings that unfair treatment (any vs. none) was associated with a five times increased risk of alcohol disorders among Asians in the NLAAS study.

Racial/ethnic discrimination was also significantly associated with higher odds of substance use disorder, but only for men. Of the few studies which have assessed the relationship between racial/ethnic discrimination and substance use in Latino populations, none have reported gender differences. In the study of Black and Latino transit operators (the majority of whom were male), experiencing discrimination in at least five of seven domains were twice as likely to report alcohol dependence as non-Whites (Yen, 1999a). Similarly in the MESA study, Latinos reporting racial/ethnic discrimination had increased odds of heavy drinking (Borrell et al., 2010). Our findings confirm these findings and add further evidence that Latinos also experience what has previously been observed in African-American and Asian American populations (Chae et al., 2008b; Gee et al., 2007a; Gibbons, Gerrard, Cleveland, Wills, & Brody, 2004). However, our study is the first to show that this relationship is restricted to men.

Odds ratios for lifetime substance use disorder were generally higher for unfair treatment than those for racial/ethnic discrimination. Key differences between the unfair treatment and racial/ethnic discrimination measures may have contributed to these differences. Our measure of unfair treatment was intended to capture discrimination related to any attribution. The measure also included stressors that participants are likely to experience on a daily basis, such as disrespect and social distancing. Therefore, similar to previous studies the unfair treatment measure may have elicited a broader range of discriminatory experiences than the three item racial/ethnic discrimination measure (Chae et al., 2008a; Shariff-Marco et al., 2009). The higher odds ratios among female participants may have been due to the inclusion of gender discrimination within unfair treatment. Likewise, both male and female participants may have included experiences related to language and legal status which are highly salient types of discrimination for Latino populations. Previous research has shown that language and legal status barriers are associated with increased risk of binge drinking among Latino immigrant men (Ornelas et al., 2011). Similarly, responses to the unfair treatment questions may have included experiences that participants were unable to attribute specifically to their racial/ethnic identity. There is some evidence that mistreatment is more stressful when there is attributional ambiguity, which may explain why the relationship between unfair treatment and substance use disorders was stronger than racial/ethnic discrimination (Williams & Mohammed, 2009).

Despite the growing evidence, the pathways by which exposure to discrimination leads to substance use disorders are not clear. Theoretical models and limited empirical evidence suggest that substance use and misuse are an attempt to alleviate or buffer stress (Hatzenbuehler, Corbin, & Fromme, 2011; Lazarus & Folkman, 1984). Another potential mechanism is that coping with discrimination taxes individuals, leaving them with fewer personal resources to resist alcohol and drug use. Suppressing negative thoughts and emotions requires effortful control, which can lead to loss of self-control in other areas (Baumeister et al., 1999; Inzlicht & Kang, 2010). In addition, coping responses such as vigilance or avoidance require continuous self-monitoring and are resource-demanding. Inzlicht, McKay, and Aronson (2006) have found that stigmatized groups (such as racial/ethnic minorities) have impaired self-control and physical regulation after being exposed to threats of discrimination in laboratory settings. These studies have also shown a link between high effort coping and increased risk taking and overeating behaviors (Inzlicht & Kang, 2010). Exposure to chronic stressors, such as discrimination, may deplete an individual's coping resources and impact their ability to maintain healthy behaviors. In the context of substance use, this may be especially difficult in social and cultural contexts that support or encourage alcohol and drug use. Given the strong associations observed in our study, it is likely that discrimination is also associated with less severe forms of substance misuse. Further research is needed to better understand these associations and identify appropriate points of intervention.

Substance Use as a Gendered Coping Response

Our findings suggest that discrimination is especially damaging for men in terms of their risk of substance use. Previous research has shown that men and women react to stressful experiences differently (Thoits, 2010). Men in our study may have been more likely to use substance use as a coping strategy, given that alcohol and drug use is more culturally acceptable among men than women in Latino culture (Kulis et al., 2008; Mora, 2002). Male gender socialization also encourages men to conceal emotions and use more avoidant coping strategies (Courtenay, 2000). Racial/ethnic minority men may adopt risky health behaviors, such as substance use, in order to assert their masculinity in the face of social marginalization (Griffith, Metzl, & Gunter, 2011). Given that we did not find statistically significant gender differences, future research should confirm this finding in a study with a larger sample of Latinos with substance use disorders and explore the role of male gender socialization in shaping patterns of substance use among Latino men.

Despite these important findings, our study did have some limitations. Given the cross-sectional nature of our data, we are not able to assess the directionality of the associations we observed. The relatively low rates of substance use disorder in the sample had several implications. First, we were only able to assess lifetime prevalence as opposed to more recent substance use. We were also unable to estimate odds ratios for alcohol and drug use separately. Given the especially low prevalence among Latinos, adjusted estimates for women should be considered exploratory and interpreted with caution. Data from this sample was collected 10 years ago; given the rapidly changing demographics and social environment, our analyses may not fully capture the current experiences of Latinos in the US. Future research using longitudinal study designs should further explore these associations across a range of alcohol and drug use outcomes among Latinos currently residing in the US. Finally, there may have been other unobserved factors associated with both substance use and perceived discrimination that confounded these relationships. For example, legal status could impact perceptions of discrimination, but might also increase risk for substance use disorder due to other factors, such as social isolation.

The demographic profile of Latinos places them at increased vulnerability for substance use disorders (Warner et al., 2006). Future research should examine the pathways by which social stress, such as discrimination, influences substance use patterns among Latinos. Educational efforts targeted towards Latino men should communicate the adverse effects of heavy drinking and drug use and promote healthier ways of coping with the stress associated with discrimination. Further training of health professionals on bias and discrimination, might also reduce exposure to discrimination in health care settings and increase the effectiveness of programs targeted towards Latinos. Latino men could benefit from increased access to brief interventions to reduce substance use by health care and social service providers, which have been shown to be effective in this population especially when provided by a Latino provider (Field, et al., 2010; Field & Caetano, 2010). Early intervention could help reach non-dependent “at risk” drinkers and drug users, before substance use disorders develop.

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Table 1

Prevalence of Lifetime Substance Use Disorders

| | Men (n=1127) | | Women (n=1427) | |
|---------------------------------|-----------------|-------|-------------------|------|
| | <i>n</i> | % | <i>n</i> | % |
| Lifetime Substance Use Disorder | 180 | 17.3% | 64 | 4.8% |
| Lifetime Alcohol Abuse | 171 | 16.7% | 57 | 4.3% |
| Lifetime Alcohol Dependence | 67 | 7.0% | 25 | 1.6% |
| Lifetime Drug Abuse | 94 | 9.4% | 35 | 2.4% |
| Lifetime Drug Dependence | 33 | 2.9% | 18 | 1.2% |

Note: *ns* are unweighted and percentages are weighted.

Table 2
Study sample characteristics and Crude Odds Ratios for Lifetime Substance Use Disorder

| | Men (n=1127) | | | Women (n=1427) | | |
|-------------------------------------|--------------|-------|------------------------|----------------|-------|-------------------------|
| | n | % | OR 95% CI | n | % | OR 95% CI |
| Unfair Treatment | | | | | | |
| None (reference) | 360 | 28.1% | | 479 | 30.8% | |
| Low (1 – 9) | 383 | 33.2% | 2.94 (1.30 – 6.67) * | 564 | 40.3% | 1.44 (0.49 – 4.23) |
| Moderate (10 – 18) | 291 | 28.6% | 4.56 (2.23 – 9.29) ** | 312 | 23.8% | 3.58 (1.08 – 11.92) * |
| High (>=19) | 92 | 10.2% | 7.92 (3.70 – 16.97) ** | 69 | 5.2% | 10.28 (4.26 – 24.82) ** |
| Racial/ethnic Discrimination | | | | | | |
| None (reference) | 339 | 29.0% | | 554 | 37.3% | |
| Low (1 – 3) | 429 | 38.2% | 1.75 (1.05 – 2.92) * | 497 | 35.3% | 1.38 (0.52 – 3.72) |
| Moderate (4–6) | 300 | 28.6% | 2.55 (1.29 – 5.06) * | 311 | 23.4% | 1.22 (0.52 – 2.87) |
| High (>=7) | 55 | 5.2% | 3.68 (2.21 – 6.14) ** | 61 | 4.1% | 1.22 (0.14 – 10.29) |
| Age | | | | | | |
| 18 – 34 years (reference) | 485 | 51.5% | | 583 | 46.4% | |
| 35 – 49 years | 357 | 29.9% | 1.99 (1.47 – 2.69) ** | 444 | 30.2% | 1.26 (0.70 – 2.58) |
| 50 – 64 years | 199 | 12.4% | 1.25 (0.73 – 2.13) | 255 | 14.4% | 0.42 (0.11 – 1.54) |
| 65+ years | 86 | 6.2% | 0.79 (0.31 – 2.03) | 145 | 9.0% | |
| Marital Status | | | | | | |
| Married (reference) | 619 | 55.6% | | 669 | 47.9% | |
| Never married | 317 | 32.1% | 0.90 (0.62 – 1.30) | 352 | 27.2% | 3.14 (1.55 – 6.39) ** |
| Widowed/separated/divorced | 190 | 12.4% | 1.83 (1.23 – 2.70) ** | 406 | 24.8% | 1.12 (0.40 – 3.14) |
| Education | | | | | | |
| 11 years or less (reference) | | 44.3% | | 565 | 44.7% | |
| 12 years | 292 | 25.6% | 1.47 (0.91 – 2.37) | 341 | 23.4% | 1.32 (0.70 – 2.49) |
| 13 – 15 years | 242 | 20.2% | 1.31 (0.91 – 1.90) | 325 | 21.5% | 2.57 (1.21 – 5.46) * |
| 16+ years | 164 | 9.9% | 0.73 (0.30 – 1.78) | 196 | 10.5% | 0.81 (0.19 – 3.52) |
| Income | | | | | | |
| <\$15,000 (reference) | 248 | 22.9% | | 463 | 32.3% | |

| | Men (n=1127) | | | Women (n=1427) | | |
|----------------------------|--------------|-------|---------------------|----------------|-------|-------------------------|
| | n | % | OR 95% CI | n | % | OR 95% CI |
| \$15,000 – \$34,999 | 298 | 27.7% | 1.33 (0.66 – 2.68) | 393 | 29.8% | 0.76 (0.44 – 1.30) |
| \$35,000 – \$74,999 | 343 | 31.0% | 1.71 (0.98 – 2.97) | 352 | 24.3% | 1.03 (0.45 – 2.36) |
| >\$75,000 | 238 | 18.4% | 1.89 (0.98 – 3.65) | 219 | 13.7% | 1.26 (0.43 – 3.73) |
| Ethnicity | | | | | | |
| Mexican (reference) | 398 | 59.3% | | 470 | 53.9% | |
| Puerto Rican | 213 | 9.5% | 1.40 (0.83 – 2.34) | 282 | 10.6% | 1.94 (0.93 – 4.06) |
| Cuban | 276 | 4.7% | 0.45 (0.25–0.80) * | 301 | 4.5% | 0.51 (0.17 – 1.50) |
| Other | 240 | 26.5% | 0.85 (0.58 – 1.24) | 374 | 31.0% | 1.14 (0.51 – 2.55) |
| Nativity | | | | | | |
| US born (reference) | 403 | 41.4% | | 521 | 41.6% | |
| Foreign born | 724 | 58.6% | 0.31 (0.21–0.46) ** | 906 | 58.4% | 0.07 (0.03–0.16) ** |
| English Proficiency | | | | | | |
| Poor/fair (reference) | 532 | 49.0% | | 722 | 49.4% | |
| Good/excellent | 593 | 51.0% | 2.35 (1.57–3.53) ** | 698 | 50.6% | 20.65 (7.95 – 53.59) ** |

Note: *n* s are unweighted and percentages are weighted.

* $p < .05$

** $p < .01$

Table 3

Adjusted odds ratios for lifetime substance use disorder

| | Model 1: Unfair Treatment | | Model 2: Racial/ethnic Discrimination | |
|-------------------------------------|---------------------------|-----------------|---------------------------------------|----------------|
| | Men (n=1123) | Women (n=1420) | Men (n=1121) | Women (n=1419) |
| | AOR | 95% CI | AOR | 95% CI |
| Unfair Treatment | | | | |
| None (reference) | | | | |
| Low (1–9) | 2.62 | (1.12–6.09) * | 0.76 | (0.23–2.51) |
| Moderate (10–18) | 4.00 | (2.07–7.72) ** | 1.32 | (0.37–4.64) |
| High (>=19) | 7.50 | (3.26–17.28) ** | 2.62 | (1.09–6.30) * |
| Racial/ethnic Discrimination | | | | |
| None (reference) | | | | |
| Low (1–3) | | | 1.63 | (0.96–2.77) |
| Moderate (4–6) | | | 2.46 | (1.22–4.98) * |
| High (>=7) | | | 3.67 | (1.92–7.02) ** |
| Age | | | | |
| 18–34 years (reference) | | | | |
| 35–49 years | 2.58 | (1.82–3.66) ** | 2.44 | (1.25–4.76) * |
| 50–64 years | 1.94 | (1.06–3.55) * | 0.98 | (0.26–3.68) |
| 65+ years | 1.52 | (0.45–5.10) | 0.98 | (0.27–3.48) |
| Marital Status | | | | |
| Married (reference) | | | | |
| Never married | 0.96 | (0.54–1.69) | 2.10 | (0.98–4.52) |
| Widowed/separated/divorced | 1.57 | (1.04–2.36) * | 0.91 | (0.29–2.85) |
| Education | | | | |
| 11 years or less (reference) | | | | |
| 12 years | 1.02 | (0.62–1.70) | 0.54 | (0.27–1.08) |
| 13–15 years | 0.73 | (0.44–1.21) | 0.81 | (0.42–1.55) |
| 16+ years | 0.45 | (0.17–1.19) | 0.27 | (0.07–1.03) |
| Income | | | | |
| None (reference) | | | | |
| Low (1–3) | | | 1.48 | (0.51–4.27) |
| Moderate (4–6) | | | 1.27 | (0.51–3.15) |
| High (>=7) | | | 1.21 | (0.14–10.55) |
| Income | | | | |
| None (reference) | | | | |
| Low (1–3) | | | 1.48 | (0.51–4.27) |
| Moderate (4–6) | | | 1.27 | (0.51–3.15) |
| High (>=7) | | | 1.21 | (0.14–10.55) |

| | Model 1: Unfair Treatment | | | | Model 2: Racial/ethnic Discrimination | | | |
|----------------------------|---------------------------|---------------|----------------|---------------|---------------------------------------|-----------------|----------------|-----------------|
| | Men (n=1123) | | Women (n=1420) | | Men (n=1121) | | Women (n=1419) | |
| | AOR | 95% CI | AOR | 95% CI | AOR | 95% CI | AOR | 95% CI |
| <\$15,000 (reference) | | | | | | | | |
| \$15,000 – \$34,999 | 1.27 | (0.65 – 2.47) | 0.82 | (0.49 – 1.35) | 1.11 | (0.54 – 2.26) | 0.78 | (0.46 – 1.34) |
| \$35,000 – \$74,999 | 1.19 | (0.62 – 2.27) | 0.92 | (0.45 – 1.89) | 1.22 | (0.59 – 2.51) | 0.92 | (0.46 – 1.85) |
| >\$75,000 | 1.25 | (0.58 – 2.72) | 0.97 | (0.39 – 2.40) | 1.14 | (0.51 – 2.57) | 1.00 | (0.39 – 2.56) |
| Ethnicity | | | | | | | | |
| Mexican (reference) | | | | | | | | |
| Puerto Rican | 1.11 | (0.61 – 2.01) | 1.34 | (0.68 – 2.65) | 1.06 | (0.58 – 1.92) | 1.38 | (0.73 – 2.60) |
| Cuban | 0.74 | (0.36 – 1.51) | 1.86 | (0.59 – 5.84) | 0.72 | (0.37 – 1.40) | 1.74 | (0.56 – 5.41) |
| Other | 0.73 | (0.47 – 1.13) | 1.33 | (0.62 – 2.84) | 0.75 | (0.49 – 1.15) | 1.43 | (0.69 – 2.99) |
| Nativity | | | | | | | | |
| US born (reference) | | | | | | | | |
| Foreign born | 0.45 | (0.27 0.75)** | 0.19 | (0.07 0.52)** | 0.40 | (0.24 – 0.66)** | 0.16 | (0.05 – 0.50)** |
| English Proficiency | | | | | | | | |
| Poor/fair (reference) | | | | | | | | |
| Good/excellent | 1.61 | (0.91 2.83) | 6.47 | (1.66 25.19)* | 1.77 | (0.91 – 3.44) | 6.75 | (1.73 – 26.30)* |

* p<05

** p<01.