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Association Between Any Major Discrimination and Current Cigarette Smoking Among Adult African American Men

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Abstract

Background—Findings from previous research has demonstrated a positive relationship between interpersonal discrimination and cigarette smoking. Cigarette smoking is proposed to be an externalizing coping mechanism used to alleviate discrimination. At the national level, it is unclear if discrimination is associated with cigarette smoking among African American men.

Objective—The aim of the study was to examine the association between discrimination and cigarette smoking among a national sample of African American men.

Methods—Using data from the National Survey of American Life (n=1,271), multivariate logistic regression was used to examine the relationship between discrimination and cigarette smoking.

Results—Thirty-two percent of the men were current smokers. Controlling for everyday discrimination, major discrimination, major stress, depressive symptoms, age, being married, household income, and education, African American men who experienced major discrimination had a higher odd of being a current smoking (Odds Ratio: 1.11, 95% Confidence Interval: 1.02-1.21) than African American men who did not experience major discrimination.

Conclusion/Importance—Findings suggest that African American men may use cigarette smoking as a mechanism to alleviate the experiences of discrimination. Future studies should continue to examine factors associated with African American men's smoking behavior in efforts to inform culturally relevant interventions.

Keywords

Smoking; Discrimination; Cigarette Use; Men's Health

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Introduction

While the smoking rates in the US have declined over the past 30 years, the prevalence rate of cigarette smoking among African American men has consistently been equal to or higher than White men (Agaku, King, Dube, & Centers for Disease Control and Prevention (CDC), 2014; Garrett et al., 2011). For instance, from 2005-2014 the prevalence rate of cigarette smoking among African American men declined from 26.7% to 22% (Jamal et al., 2015). Despite this decline, the rate of cigarette smoking among African American men was higher than White men's rates that decreased from 24% to 19% (Jamal et al., 2015). African American men initiate smoking later in life, and, they begin smoking cessation on average 10 to 20 years later than White men (Burns et al., 1997). Longer prevalence of cigarette smoking may contribute to African American men having the highest mortality and morbidity rates from many smoking-related conditions (Haiman et al., 2006; Mozaffarian et al., 2015; Schiller, Lucas, Ward, & Peregoy, 2012; Siegel, Naishadham, & Jemal, 2012; Thorpe et al., 2013). For instance, African American men have higher incidence rates of lung cancer and fatal coronary heart disease compared to White men (Haiman et al., 2006; Mozaffarian et al., 2015; Schiller et al., 2012; Siegel et al., 2012). Thorpe and colleagues, using data from the National Health and Nutrition Examination Survey (NHANES III), determined that African American men who smoke have an increased risk of mortality regardless of age, compared to those who do not smoke (Thorpe et al., 2013). It is important to identify factors associated with cigarette smoking among African American men in efforts to inform and develop culturally relevant interventions to abate its adverse consequences. Psychosocial factors, particularly experiences with discrimination, may in part explain cigarette usage among African American men.

Previous research has reported a positive relationship between cigarette smoking and discrimination, whereas cigarette smoking is most prevalent among those who experience discrimination (Bennett, Wolin, Robinson, Fowler, & Edwards, 2005; Borrell et al., 2007; Borrell et al., 2010; Corral & Landrine, 2012; Guthrie, Young, Williams, Boyd, & Kintner, 2002; Landrine & Klonoff, 1999; Landrine, Klonoff, Corral, Fernandez, & Roesch, 2006; Purnell et al., 2012; Shariff-Marco, Klassen, & Bowie, 2010). It is hypothesized that cigarette smoking is a coping mechanism used to alleviate psychosocial stressors like discrimination (Paradies, 2006; Williams, 2003; Williams & Mohammed, 2009). At the national level, a positive association between discrimination and cigarette smoking among racial/ethnic diverse samples of adults (Borrell et al., 2007; Borrell et al., 2010; Purnell et al., 2012) and teens has been observed (Wiehe, Aalsma, Liu, & Fortenberry, 2010). However, it is unclear if such relationships exist among African American men, as to the authors' knowledge no national level study has examined the relationship between discrimination and cigarette smoking among African American men.

There is a paucity of studies that have focused exclusively on smoking and discrimination among African American men in the United States (Landrine & Corral, 2014). This is somewhat surprising given the disproportionate amount of external stressor such as discrimination African American men experience (Krieger et al., 2006; Williams, 2003; Williams, 2015). For example, African American men are more likely than White men to

live in communities that are poverty stricken and have high crime rates (Widome, Brock, Noble, & Forster, 2013); societal characteristics that have been demonstrated to be associated with disproportional tobacco marketing and tobacco outlet density (Fakunle, Morton, & Peterson, 2010; Laws, Whitman, Bowser, & Krech, 2002; Loomis, Kim, Goetz, & Juster, 2013; United States Department of Health and Human Services, 2004; United States Department of Health Human Services, 2014). In response to these social stressors and environmental cues it would be expected that African American men smoke as a means to cope with such experiences.

The single study that examined the relationship between discrimination and cigarette smoking among adult African American men determined that racial discrimination was not associated with smoking (Landrine & Corral, 2014). While the study offers insight on the relationship between discrimination and smoking among African American men, the study used a community-based sample. It is unclear if this relationship operates the same way at the national level. Accordingly, the purpose of the study is to determine the association between discrimination and cigarette smoking using a national sample of African American men. We hypothesize that experiences of discrimination, compared to no experiences, would be associated with cigarette smoking among African American men.

Methods

Sample

Data for the study came from the National Survey of American Life (NSAL). The NSAL is a national household probability sample of African American (n=3,570), Black Caribbean (n= 1,438), and non-Hispanic White (n= 891) adults aged 18 years (Jackson et al., 2004b). Using a multistage probability design, data collection was completed between February 2001 and March 2003 through face-to-face and telephone interviewing. The overall interview response rate was 72.3% (Jackson, Neighbors, Nesse, Trierweiler, & Torres, 2004). In the current study, analysis included African American men (n= 1,271). Additional information on the sampling design and procedures of NSAL can be found elsewhere (Heeringa et al., 2004; Jackson et al., 2004a; Jackson et al., 2004).

Study Measures

Smoking status—The answer to the following 2 items was used to assess smoking status, “Have you smoked at least 100 cigarettes in your life?” (“yes,” “no,” “do not know”) and “Do you currently smoke?” (“yes,” “no,” “do not know”). Men who responded “yes” to the 2 items were coded as “current smoker.” Men who responded “no to the first item, and those who responded “yes” to the first item but “no” to the second were coded as “non-smoker”.

Discrimination—Both everyday and major experiences of discrimination were used in the analysis (Williams, Yan, Jackson, & Anderson, 1997). Everyday discrimination was assessed using a 10-item version of the Williams and colleagues Everyday Discrimination scale (Williams et al., 1997). Specifically, respondents were asked about the lifetime occurrence and frequency of 1) being treated with less courtesy than others, 2) being treated with less respect than others, 3) receiving poorer services than others, 4) being treated as if they are

not smart by others, 5) other being afraid of them, 6) being perceived as dishonest by others, 7) people acting like they were better than them, 8) being called names or insulted by others, 9) feeling threatened or harassed, or 10) being followed in stores more than others. The response options ranged from 1 “almost everyday” to 9 “never”. After reverse coding the response options, a scale was created by summing across the 10-items. The scale ranged from 0 to 50, with higher scores representing more experiences with everyday discrimination.

Major discrimination was assessed using Williams and colleagues nine-item Major Experiences of Discrimination Scale (Williams et al., 1997). Study respondents were asked if they were ever unfairly 1) fired, 2) not hired, 3) denied promotion, 4) treated/abused by police, 5) discouraged from continuing education, 6) prevented from moving into a neighborhood, 7) neighbors made life difficult, 8) denied loan, or 9) received poor service from repairman. The response options were “yes” or “no”. Affirmative responses were summed across the 9 items, to create a scale that ranged from 0 to 9. Higher scores on the scales represent more experiences with major discrimination.

Covariates—Major stress, depressive symptomology, and several demographic variables were controlled for in the analysis. Major stress was assessed using a binary variable. Specifically the respondents were asked in the last month if they had problems with: 1) health, 2) money, 3) job, 4) children, 5) marriage, 6) being a crime victim, 7) the police, 8) love life, and 9) their race. The response items were yes or no. A binary variable was created to reflect men who experienced at least one of the major stressors in the last month compared to those who did not. Depressive symptomology was assessed using the Center for Epidemiologic Studies-Depression (CES-D) 12-item scale. The demographic variables included age (in years), marital status (1= married; 0 = not married), household income (1= <\$30,000; 0 = >\$30,000), and education (1= high school graduate or more; 0= less than high school graduate).

Data Analysis

Sample characteristics were summarized for the entire sample. Additionally these characteristics were summarized and compared using chi-square statistics and the Student's t-test by current smoking status in Table 1. In Table 2, several multivariate logistic regression models were used to determine the association between current cigarette smoking and everyday discrimination (model 1), major discrimination (model 2), and everyday and major discrimination (model 3) controlling for depressive symptomology, age, being married, household income, and education. Before estimating the multivariate logistic regression models, multicollinearity among major discrimination, everyday discrimination, and major stress was tested using the variance inflation factor. The variance inflation factor was below 10, thus multicollinearity was not an issue (UCLA Statistical Consulting Group, 2016). All of the analyses incorporated weights and design factors to account for the complex sampling design of NSAL. The sampling weights were designed to provide population representation for the race/ethnic subsamples in the 48 conterminous states (Heeringa et al., 2004). P values less than 0.05 were considered significant. All of the analyses for the study were performed

using the complex survey design feature in STATA version 13 (StataCorp LP, College Station, TX).

Results

The sample weighted characteristics of African American men ($n= 1,271$) from the NSAL data are shown in Table 1. Nearly a third of the sample were current cigarette smokers (32%). The mean score for everyday and major discrimination were 13.7 ± 0.5 and 1.8 ± 0.1 , respectively. About 70% of the men in sample experienced at least one major life stressor. The mean score for depressive symptomology was 14.0. The mean age of men in the sample was 42. Over half of the men had a household income greater than \$30,000, and most of the men in the sample had a high school degree or greater. Men who were current smokers reported more experiences of everyday and major discrimination, major stress, a household income below \$30,000, and less than a high school education. There were no differences observed with respect to depressive symptoms, age, or being married.

The results from the multivariable logistic regression are presented in Table 2. All of the models controlled for any major stress, depressive symptomology, age, being married, household income, and education. In model 1, experiencing everyday discrimination was associated with an increased odd of being a current smoker (odds ratio (OR): 1.03, 95% confidence interval (CI): 1.01, 1.05). Similarly, in model 2 experiencing major discrimination was associated with an increased odd of being a current smoker (OR: 1.16, 95% CI: 1.07, 1.25). After adjusting for both everyday and major discrimination in model 3, African American men who experienced major discrimination had a higher odds (OR: 1.11, CI: 1.02, 1.21) of being a current smoker than those who did not experience major discrimination.

Discussion

The study examined the association between discrimination and smoking among African American men, using data from the NSAL. African American men who experienced any major discrimination had an increased odd of being a current smoker, net of everyday discrimination, experiencing any major stress, depressive symptomology, age, being married, household income, and education. Findings suggest that experiences of major discrimination may be most salient to African American men's smoking behavior. Further, the results from the study suggests that African American men smoke cigarettes as a means to cope with discrimination.

African American men who experienced any major discrimination had an increased odd of being a current smoker, compared to those who did not experience any major discrimination. This finding is consistent with previous studies that have demonstrated a positive relationship between cigarette smoking and discrimination (Bennett et al., 2005; Borrell et al., 2007; Borrell et al., 2010; Corral & Landrine, 2012; Guthrie et al., 2002; Landrine & Klonoff, 1999; Landrine et al., 2006; Purnell et al., 2012; Shariff-Marco et al., 2010). However, unlike other findings (Landrine & Corral, 2014), in our study discrimination was associated with an increased odd of smoking among African American men. Landrine and

Corral (2014) using a community sample of African American adults, determined that racial discrimination was not associated with smoking among African American men (Landrine & Corral, 2014). The differences between the two findings could be related to the measure for discrimination. Landrine and Corral (2014) used a single-item measure for discrimination, whereas in the current study we used the Williams and colleagues' Everyday and Major Discrimination scales (Williams et al., 1997).

Consistent with stress theories that posit engaging in unhealthy behaviors is used to cope with stress, the study findings suggest that African American men may use cigarette smoking as a means to mitigate discrimination (Mezuk et al., 2013; Parrott, 1999; Pearlin & Schooler, 1978; Pearlin, Menaghan, Lieberman, & Mullan, 1981). Interestingly in the current study, the significance of everyday discrimination attenuated and only major discrimination was associated with current cigarette smoking in the fully adjusted model. Aspects of major discrimination might be attached to African American men's view of traditional masculine beliefs. The institutional social structures in which major discrimination occur, i.e. the labor market or interactions with law enforcement, might impede African American men's opportunity to engage in the cultural script of masculinity defined by being independent, self-reliant, and strong (Courtenay, 2000; Williams, 2015). The inability to achieve idealized masculinity may result in engaging in deleterious health behaviors like cigarette smoking to cope with limited opportunities as a result of unfair treatment in social structures (Courtenay, 2000). This study highlights the need for more empirical studies to understand how multiple types of discrimination work in tandem to influence the health and health behaviors of African American men. To that end, the current study adds to the nascent literature that suggests that discrimination is associated with negative health behaviors among African American men.

Limitations

While findings from the study contribute to the growing literature on the association between discrimination and cigarette smoking, it is not without limitation. The major limitation of the study was our inability to assess coping mechanisms in response to discrimination. In our study, although we hypothesized that cigarette smoking is a coping behavior, we were unable to explicitly assess if African American men use cigarette smoking to mitigate the stress of discrimination. It is difficult to identify a coping response, as often there is nothing intrinsic to the behavior used for this function (Pearlin & Schooler, 1978). Smoking, however, is a common method that many identify as a means to relieve stress (Parrott, 1999). Additionally, due to the cross-sectional nature of the study, it cannot be determined whether discrimination influences cigarette smoking or if smoking increased the likelihood to report discrimination. It is plausible, however, the results are similar to previous findings that demonstrate the increased risk for cigarette smoking in response to discrimination (Landrine & Corral, 2014; Paradies, 2006; Purnell et al., 2012; Williams, Neighbors, & Jackson, 2003). Longitudinal studies are needed to further examine this relationship. Despite the limitations, to the authors' knowledge this is the first study to examine the association between cigarette smoking and discrimination using a national sample of African American men. Additionally this study identifies psychosocial factors – everyday and major discrimination - associated with cigarette smoking among African

American men. Understanding how to cope with discrimination should prove to be useful in informing culturally relevant smoking cessation interventions for African American men.

Due to African American men's high prevalence of cigarette smoking it is important to investigate additional factors associated with smoking. As the African American men in the current sample had a higher prevalence of smoking (32.1%) than those in the 2003 National Health Interview Survey (25.5%) (Centers for Disease Control and Prevention, CDC, 2005). Findings from the current study demonstrated that major discrimination was associated with cigarette smoking among African American men. Future studies should examine how gender specific factors like masculinity and gendered social norms influence African American men's engagement in unhealthy behaviors to mitigate stress at different stages over the life course (Bruce, Griffith, & Thorpe, 2015; Thorpe, Duru, & Hill, 2015). Racialized and gendered determinants might work in tandem to create unique barriers for African American men to engage in health promoting behaviors (Griffith & Thorpe Jr, 2016). A life course approach is needed to understand the timing and duration of the determinants on health outcomes (Thorpe et al., 2015). As such, culturally appropriate interventions are needed to abate the negative health behaviors associated with discrimination among African American men. These interventions can be used to combat health behaviors associated with their high morbidity and mortality from preventable health conditions.

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Table 1

Sample Weighted Select Characteristics of African American Men in the National Study of American Life by Current Smoking Status (n= 1,271)

Characteristics	Full Sample	Current Smoker	
		Yes	No
Current Smoker		32.1	67.9
Everyday Discrimination ^a , mean (SE)	13.7 (0.5)	15.4 (0.8)	12.9 (0.5) **
Major Discrimination ^b , mean (SE)	1.8 (0.1)	2.2 (0.1)	1.7 (0.1) ***
Any Major Stress ^c	69.4	79.2	64.8 ***
CES-D score ^d , mean (SE)	14.0 (0.1)	14.1 (0.3)	14.0 (0.2)
Age (years), mean (SE)	42.0 (0.7)	42.6 (0.9)	41.3 (0.8)
Married	49.4	48.5	50.3
Household Income, (%)			
<\$30,000	43.4	53.0	38.3 ***
>\$30,000	56.6	47.1	61.7
Education, (%)			
< High School Graduate	23.2	31.1	18.7 ***
High School Graduate	76.8	68.9	81.3

Note: All estimates account for the multistage probability sampling design by applying the appropriate weights and strata variables. *SE*, standard error.

^aEveryday discrimination measured using the 10-item Williams' Everyday Discrimination scale

^bMajor discrimination measured using the 9-item Williams' Major Discrimination scale

^cMajor stress defined as having any major stressful events versus none

^dCES-D is Center for Epidemiologic Studies Depression Scale $p < .05$.

**
 $p < .01$

 $p < .001$

Table 2

Weighted Logistic Regression Depicting the Association Between Discrimination and Current Smoking Among African American Men in the National Study of American Life (n=1,271)

	Model 1		Model 2		Model 3	
	OR	95% CI	OR	95% CI	OR	95% CI
Everyday Discrimination ^a	1.03	(1.01,1.05)			1.02	(0.99, 1.04)
Major Discrimination ^b			1.16	(1.07, 1.25)	1.11	(1.02, 1.21)
Any Major Stress ^c	1.73	(1.29,2.31)	1.66	(1.22, 2.26)	1.62	(1.20, 2.18)
CES-D score ^d	0.99	(0.95,1.02)	0.99	(0.95, 1.03)	0.99	(0.94, 1.03)
Age	1.01	(0.99,1.02)	1.00	(0.99, 1.00)	1.00	(0.99, 1.01)
Married	1.13	(0.79,1.61)	1.11	(0.78, 1.58)	1.12	(0.79, 1.60)
Household Income						
>\$30,000	1.00		1.00		1.00	
<\$30,000	1.57	(1.15,2.14)	1.60	(1.18, 2.17)	1.61	(1.18, 2.19)
Education						
< High School Graduate	1.00		1.00		1.00	
High School Graduate	0.62	(0.09,0.63)	0.58	(0.42, 0.81)	0.59	(0.42, 0.83)

Note. All estimates account for the multistage probability sampling design by applying the appropriate weights and strata variables. *OR* = odds ratio, *CI* = confidence interval.

^aEveryday discrimination measured using the 10-item Williams' Everyday Discrimination scale

^bMajor discrimination measured using the 9-item Williams' Major Discrimination scale

^cMajor stress defined as having any major stressful events versus none

^dCES-D is Center for Epidemiologic Studies Depression Scale