Original Report: Racism and Health

Associations between Perceived Racial Discrimination and Tobacco Cessation among Diverse Treatment Seekers

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Objectives: This study investigated a) racial/ethnic differences in past-year discrimination experiences and b) associations between discrimination and smoking abstinence.

Design: Prospective, longitudinal analysis of smoking status. Perceived past-year discrimination was assessed at baseline. ANCOVAs and intent-to-treat hierarchical logistic regressions were conducted.

Setting: Dual-site (Tampa, FL and Miami, FL) randomized controlled trial testing the effects of a group cessation intervention plus pharmacotherapy.

Participants: Treatment-seeking adult smokers (N=347; non-Hispanic White, non-Hispanic African American/Black, or Hispanic).

Main Outcome Measures: Biochemically verified 7-day point prevalence abstinence (7-day ppa) was assessed immediately post-intervention and at 6-month follow-up.

Results: After controlling for covariates, African Americans/Blacks reported greater perceived discrimination compared with non-Hispanic Whites (P=.02), and Hispanics (P=.06). Non-Hispanic Whites and Hispanics did not differ in perceived racial/ethnic discrimination experiences over the past year. Irrespective of race/ethnicity, past-year perceived discrimination was inversely associated with 7-day ppa, both post-intervention (AOR=.97, CI: .95-.99) and at 6-months (AOR=.98, CI: .96-.99). Among African Americans/Blacks, past-year perceived discrimination was inversely associated with 7-day ppa, both post-intervention (AOR=.95, CI: .92-.97) and at 6-months (AOR=.97, CI: .94-.99). Perceived discrimination was unrelated to 7-day ppa among Hispanics. Among non-Hispanic Whites, past-year perceived discrimination was inversely associated with post-intervention 7-day ppa (AOR=.95, CI: .91-.99), but not 6-months.

Conclusions: Perceived racial/ethnic discrimination was greater among African American/Black smokers compared with non-Hispanic Whites. Perceived discrimination was negatively associated with tobacco cessation in the full sample, and for African Americans at 6-months post-intervention. These data have implications for intervention delivery and health disparities. *Ethn Dis.* 2020;30(3):411-420; doi:10.18865/ed.30.3.411

Keywords: Racial Discrimination; Ethnic Discrimination; Tobacco; Smoking Cessation; African Americans; Hispanics

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Introduction

Racial/ethnic discrimination refers to intentional acts that are unfair or injurious, based solely on racial or ethnic identification. Discriminatory acts may be direct and explicit, or perceived through subtle and sophisticated attitudes or behaviors.[1] Racial/ethnic minorities perceive greater levels of both racial discrimination compared with non-Hispanic Whites, although the latter group also reports such experiences.[2-4] While problematic for many societal reasons, racial/ethnic discrimination (perceptions and experiences) have a distinct impact on health and health behavior. This study focused on the relationship between perceived racial/ethnic discrimination across non-Hispanic Whites, non-Hispanic African Americans/Blacks, and Hispanics (of any race) on a primary cancer risk behavior – tobacco smoking.

Racial/Ethnic Discrimination and Health Effects

An established literature has demonstrated negative associations

between racial/ethnic discrimination and both physical and mental health.[1,5,6] Specific to physical health, racial discrimination has been consistently linked to diagnoses of breast cancer, cardiovascular disease, and numerous risk factors for disease including high blood pressure, obesity, and substance use. Similarly, discrimination influences psychological status and health behaviors that negatively impact well-being.[1,7,8] Racial/ethnic minorities may be especially susceptible to acute and chronic stress given the elevated levels of discrimination reported across multiple life domains (eg, health care[9]; in the workplace[10]; criminal justice system[11]). Among African Americans in particular, data support positive associations between discrimination and depression,[12] hypertension, obesity, and alcohol use.[13] The literature also suggests that exposure to discrimination-related stress is positively related to engagement in maladaptive health behaviors, including tobacco smoking.

This study focused on the relationship between perceived racial/ethnic discrimination across non-Hispanic Whites, non-Hispanic African Americans/Blacks, and Hispanics (of any race) on a primary cancer risk behavior – tobacco smoking.

Racial/Ethnic Discrimination and Tobacco Use

Irrespective of racial/ethnic background, perceptions of discrimination are associated with tobacco smoking[2,8] and nicotine dependence.[14] In particular, individuals who experience discrimination across settings, such as health care and workplaces, are more likely to report current smoking.[8] However, the preponderance of the evidence supporting an association between racial/ethnic discrimination has focused on racial/ethnic minorities. The 2017 National Cancer Institute (NCI) monograph on tobacco disparities described a model elucidating relationships between stress and tobacco use, highlighting that racial discrimination is a specific stressor that directly predicts smoking maintenance and tobacco-related disease burden, particularly among racial/ethnic minorities.[15] Data indicate that experiences of racial/ethnic discrimination are positively associated with tobacco use among African Americans,[16,17] and Hispanics relative to non-Hispanic Whites.[3,18,19] The relationship between racial discrimination and smoking among African Americans is particularly problematic, given that it has been observed across the lifespan – that is, among adolescents,[16] young adults,[20] and adults.[17] Thus, an emerging body of research demonstrates the relationship between racial/ethnic discrimination and tobacco smoking across populations, which may provide insight on a specific form of stress that affects long-term chronic disease risk.

Racial/Ethnic Discrimination and Tobacco Cessation

Few studies have examined the important question of whether racial/ethnic discrimination affects tobacco cessation efforts. Previous research has found that global perceived stress[21,22] and depressive symptoms were associated with lower likelihood of quitting in samples of treatment-seeking racial/ethnic minority smokers.[22] Racial/ethnic discrimination represents a specific stressor that may also influence behavior change, yet the focus on this potential association has been minimal. One study found an inverse association between everyday discrimination and the likelihood of quitting smoking among Hispanics of Mexican heritage.[23] Enhancing our understanding of this association, particularly among racial/ethnic minorities is especially important, as these groups are less likely to quit successfully compared with non-Hispanic Whites.[24-26] Attention is needed on the role of perceived racial/ethnic experiences among smokers enrolled in cessation treatment. Research has not examined whether recent (ie, past-year) perceived discrimination predicts smoking abstinence among individuals who are motivated to seek assistance, and whether such associations differ by racial/ethnic group.

Our study investigated the association between perceived racial/ethnic discrimination and tobacco cessation longitudinally in a diverse group of adults enrolled in an intensive behav-

ioral intervention. We hypothesized that a) racial/ethnic minorities (ie, African Americans/Blacks and Hispanics) would report significantly greater perceived racial/ethnic discrimination compared with non-Hispanic Whites; b) discrimination would demonstrate independent, inverse associations with biochemically verified 7-day point-prevalence abstinence (7-day ppa) at the end-of-intervention and at the 6-month follow-up; and c) the negative association between discrimination and smoking abstinence would be greatest among racial/ethnic minorities, relative to non-Hispanic Whites (in stratified analyses).

Methods

Sample and Data Collection

Data were drawn from a dual-site randomized controlled trial (RCT) testing the efficacy of cognitive behavioral therapy (CBT) for tobacco cessation. Participants were randomly assigned to receive either group-based CBT or general health education (GHE). The full study design is described elsewhere.[27] In brief, participants were recruited through community outreach efforts including advertisements (eg, social media, radio, internet, public transportation), partnering with community-based organizations and health clinics, and word of mouth. Eligibility criteria included aged ≥18 years, permanent contact information, smoked at least five cigarettes per day, ability to read English or Spanish, and self-identified as non-Hispanic White, African American/Black, or Hispanic. Exclusions included self-reported current alcohol abuse/dependence, illicit drug use, currently enrolled in a smoking cessation program, or nicotine patch therapy contraindications. Participants in the current analysis included those who completed an assessment of perceived racial/ethnic discrimination at baseline (pre-intervention; N=347, [non-Hispanic White = 111, African American/Black = 136; Hispanic = 100]), representing 96% of the full sample. The study was approved by institutional review boards at the University of Miami and the Moffitt Cancer Center.

Interventions

Participants received eight sessions (90-120 minutes) of group CBT for smoking cessation or GHE, combined with eight weeks of nicotine patch therapy. Sessions occurred over a 4-week period and were led by a co-therapy pair. Group CBT consisted of psychoeducation regarding the health effects of tobacco smoking, the benefits of quitting, strategies to manage nicotine withdrawal, identification of smoking cues, and utilizing the coping response training model to achieve cessation and prevent relapse. In the GHE group, sessions covered tobacco-associated medical conditions, such as lung and colorectal cancer, stroke, heart disease, and chronic obstructive pulmonary disease (COPD), including risk factors, prevention, and treatment.

Measures

Demographics

Participants reported sex, age, personal annual income, and level of education. Racial/ethnic categories included non-Hispanic White, non-Hispanic African American or Black, or Hispanic ethnicity (of any race).

Perceived Racial/Ethnic Discrimination

The General Ethnic Discrimination (GED) scale is a validated measure assessing 17 possible experiences with racial discrimination, such as by supervisors, co-workers, service workers, strangers, people in helping professions, friends, neighbors, and institutions.[2] The GED is designed for use by any individual, irrespective of their racial/ethnic background, and performed well among non-Hispanic Whites and racial/ethnic minorities. Items were assessed using a Likert scale, ranging from 1 "never" to 6 "almost all the time." The GED assesses recent (ie, past-year) racial/ethnic discrimination, lifetime (ie, ever in one's life), and discrimination appraisal (excluding the item assessing discrimination in school due to the low base rate of current students in the sample). The recent discrimination (past year) total score was used in analyses and demonstrated high reliability (range = 1-84; internal consistency = .95).

Smoking Cessation

Participants self-reported 7-day ppa, as an established measure of smoking status[28] using timeline follow-back calendars[29] at the end-of-intervention and at 6-months post-intervention. Self-reported abstinence was biochemically confirmed using breath carbon monoxide (CO), with readings of ≤5ppm[30] considered abstinent.

Statistical Analyses

Descriptive statistics were conducted to examine frequencies, means, and standard deviations of sample characteristics. Analyses of variance and chi-square tests compared demographics across racial/ethnic groups. No evidence of significant multicollinearity was found. Next, multivariable models tested the three study hypotheses. First, analyses of covariance, adjusted for sociodemographic factors known to affect perceived racial/ethnic discrimination experiences (ie, education and income), study site (Tampa or Miami), and intervention condition, tested associations between race/ethnicity and perceived discrimination. Next, hierarchical logistic regression (HLR) models tested the independent associations between perceived racial/ethnic discrimination and 7-day ppa post intervention and at the 6-month follow-up. Finally, HLR models stratified by race/ethnicity tested associations between perceived discrimination and abstinence at both time points. In each HLR model, study site and intervention condition were entered in block 1; demographics were entered in block 2; and GED scores were entered in block 3. An intention-to-treat approach was used, such that participants who missed a smoking status assessment were considered current smokers. Of interest was the relationship between perceived racial/ethnic discrimination and the odds of smoking abstinence at both time points over and above potential confounding factors. That is, the odds of abstinence per one-unit of change in perceived racial/ethnic discrimination. Alpha was set at P<.05 and analyses were conducted using SPSS (IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp.).

Results

As shown in Table 1, the overall sample consisted of middle-aged adults who were balanced with respect to sex. There were no significant differences by race/ethnicity between study condition, or by age or sex. The racial/ethnic distribution of the sample differed by study site, with greater proportions of racial/ethnic minorities in Miami, and more non-Hispanic Whites being recruited in Tampa (χ^2 [2, N=347]=103.83, P<.001). Almost half of the sample (48%) reported an annual income of between $10,000

Table 1. Sample characteristics by race/ethnicity

		Race/Ethnicity		
	Overall	White	African American/ Black	Hispanic
	N=347	n=111	n=136	n=100
Age - years, mean (SD)	51.2 (10.7)	51.7 (10.2)[a]	52.2 (9.9)[a]	49.4 (12.0)[a]
Intervention condition, %, n				
Cognitive behavioral Therapy	46 (159)	50 (55)[a]	42 (57)[a]	48 (47)[a]
General health education	54 (185)	50 (55)[a]	58 (78)[a]	53 (52)[a]
Study site, %, n				
Miami	59 (204)	21 (23)[a]	70 (95)[b]	86 (86)[c]
Tampa	41 (143)	79 (88)[a]	30 (41)[b]	14 (14)[c]
Sex, %, n				
Male	50 (174)	44 (49)[a]	48 (65)[a,b]	60 (60)[b]
Female	50 (172)	56 (62)[a]	52 (70)[a,b]	39 (40)[b]
Annual income, %, n				
<$10,000	42 (139)	21 (21)[a]	60 (79)[b]	39 (39)[c]
$10,000 - $50,000	48 (162)	56 (58)[a]	38 (50)[b]	55 (54)[a]
$50,001 or more	10 (32)	23 (24)[a]	2 (2)[b]	6 (6)[b]
Education, % , n				
Less than high school	17 (58)	8 (9)[a]	18 (24)[b]	25 (25)[b]
High school/GED	27 (94)	16 (18)[a]	45 (61)[b]	15 (15)[a]
Some college/trade school degree	35 (122)	49 (54)[a]	26 (36)[b]	33 (32)[b]
College/University degree	21 (71)	27 (29)[a]	11 (15)[b]	27 (27)[a]

a, b, c. Different subscript letters denote column proportions differ significantly from each other at the P<.05 level.

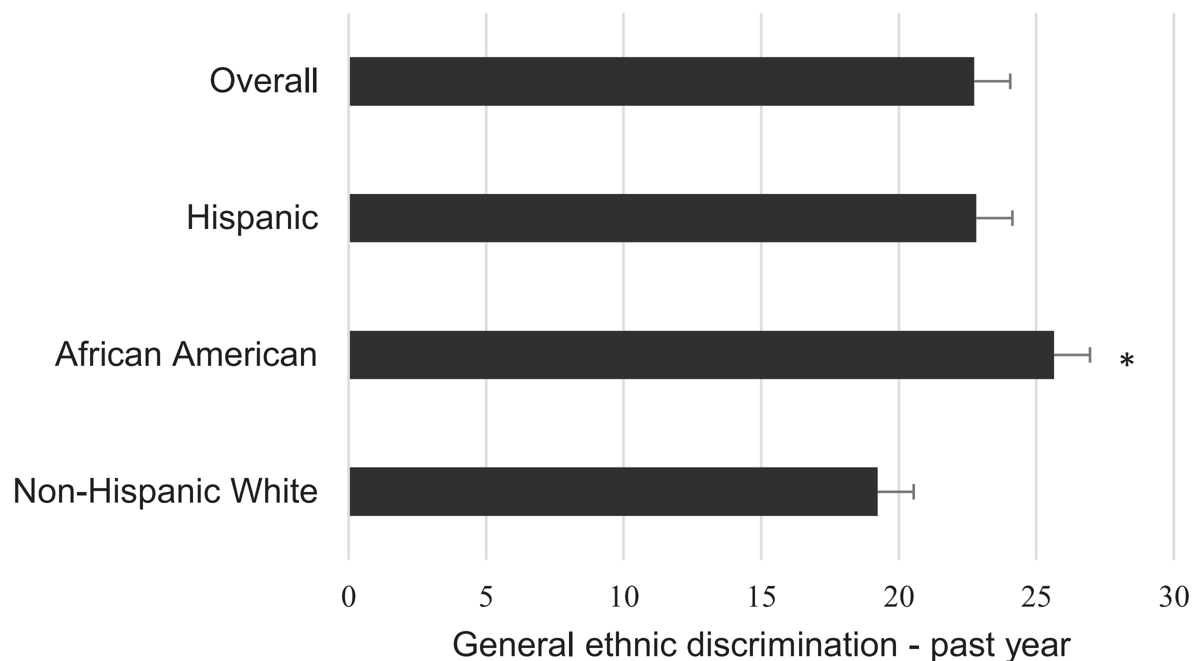

Figure 1. Perceived racial/ethnic discrimination over the past year
Note: *<.05; bars represent standard errors.

and $50,000, and 56% completed at least some post-secondary education. There was a significant racial/ethnic difference in annual income (χ^2 [4, N=333]=57.40, P<.001), such that African Americans/Blacks were most likely to report under $10,000/year; Hispanics were more likely to report earning under $10,000/year compared with non-Hispanic Whites. Non-Hispanic Whites were most likely to report an annual income that exceeded $50,000/year. There was also a significant difference in education (χ^2 [6, N=345]= 53.82, P<.001), such that African Americans/Blacks and Hispanics were more likely to report less than a high school education compared with non-Hispanic Whites; and, non-Hispanic Whites and Hispanics were more likely to report completing a university/college degree compared with African Americans.

The average score on the past-year GED scale was 22.74 (*SD*=11.11). Analyses of covariance, adjusting for study site, intervention condition, income and education, found significant racial/ethnic differences in perceived racial/ethnic discrimination (*F*[3, 330]=52.36, P<.001]. As illustrated in Figure 1, African Americans/Blacks reported greater perceived discrimination compared with non-Hispanic Whites (P=.02), and Hispanics (P=.06). Non-Hispanic Whites and Hispanics did not differ significantly in perceived racial/ethnic discrimination experiences over the past year.

HLR analyses modeled perceived racial/ethnic discrimination as a predictor of 7-day ppa after adjusting for covariates (Table 2). At post-intervention, there was an inverse association between perceived discrimination and smoking status. Irrespective of racial/ethnic background, income, and education, greater perceived racial/ethnic discrimination was associated with a lower likelihood of biochemically confirmed abstinence. At the 6-month follow-up, the same inverse association was observed. Greater perceptions of discriminatory experiences were related, independently, with lower odds of quitting.

The second set of models tested perceived racial/ethnic discrimination as a predictor of 7-day ppa stratified by racial/ethnic group (Table 3). Among non-Hispanic Whites, perceived discrimination was inversely associated with abstinence at post-

Table 2. Hierarchical logistic regressions of perceived racial discrimination and 7-day point prevalence abstinence

7-day ppa at:	Post Intervention		6-Month Follow-Up	
	AOR	(95 CI)	AOR	(95 CI)
Study site				
Miami		Reference		Reference
Tampa	.61	(.35-1.08)	.50	(.28-.89)
Intervention condition				
General health education		Reference		Reference
Cognitive behavioral therapy	1.88	(1.20-2.94)	1.28	(.81-2.02)
Annual income	1.05	(.93-1.18)	1.02	(.90-1.15)
Education	1.07	(.96-1.19)	.94	(.85-1.05)
Race/Ethnicity				
White		Reference		Reference
African American/Black	.87	(.45-1.66)	1.01	(.51-1.98)
Hispanic (any race)	1.06	(.53-2.10)	.84	(.41-1.70)
Perceived racial/ethnic discrimination	.97	(.95-.99)	.98	(.96-.99)

ppa, point prevalence abstinence; AOR, adjusted odds ratio; CI, confidence interval.
AOR <1.0 indicates decreased odds of abstinence per one-unit increase in perceived discrimination.

intervention, but not the 6-month follow-up. Among African American/Black participants, perceived discrimination was inversely associated with abstinence both at post-intervention and the 6-month follow-up. Finally, among Hispanics, the relationship between perceived racial/ethnic discrimination and smoking abstinence was not significant.

Discussion

This study begins to fill a gap in knowledge on the relationship between perceived racial/ethnic discrimination and smoking abstinence among treatment seekers. The study is among the first to test this association prospectively in a diverse sample. Overall, all three racial/ethnic groups reported past-year discrimination experiences. African American/Black participants, however, perceived greater racial/ethnic discrimination compared with Hispanics and non-Hispanic Whites. At both post-intervention and at the 6-month follow-up, inverse associations were found between perceived discrimination and biochemically confirmed tobacco cessation. Analyses within each racial/ethnic group found that non-Hispanic Whites with more past-year discrimination experiences were less likely to report smoking abstinence at post-intervention. African Americans/Blacks who reported greater perceived racial/ethnic discrimination were less likely to report abstinence at both time points. Importantly, these observations were significant after controlling for study site, study condition, income, and education. Among Hispanics, the associations between discrimination and cessation were not significant at either time point. If these associations reflect a causal relationship, an overarching implication of this analysis is that perceptions of discrimination may serve as a barrier to tobacco cessation. In the long-term, perceived racial/ethnic discrimination may place African Americans, in particular, at risk for failed cessation, continued exposure to cigarette constituents, and thus tobacco-related health disparities.

The assessment of past-year perceived racial/ethnic discrimination occurred at baseline, suggesting that the frequency of these experiences prior to the start of treatment was indicative of cessation potential. Study participants were individuals who enrolled in an intensive behavioral intervention combined with nicotine patch therapy. Although we controlled for the intervention condition (CBT or GHE), an ex post facto analysis did not find a relationship between condition and perceived racial/ethnic discrimination. That increased exposure to perceived discrimination based on racial/ethnic background was a significant risk factor for persistent smoking – even with intensive intervention – potentially reflects the strength of this societal-level concern.

African Americans reported great-

Table 3. Hierarchical logistic regressions of perceived racial/ethnic discrimination and 7-day point prevalence abstinence stratified by race/ethnicity

7-day ppa at:	Post Intervention		6-Month Follow-Up	
	AOR	(95 CI)	AOR	(95 CI)
Non-Hispanic White participants				
Characteristic				
Study Site				
Miami		Reference		Reference
Tampa	.72	(.27-1.91)	.46	(.17-1.20)
Intervention Condition				
General health education		Reference		Reference
Cognitive behavioral therapy	2.13	(.96-4.71)	1.78	(.77-4.09)
Annual income	1.01	(.85-1.20)	1.03	(.86-1.24)
Education	1.16	(.92-1.45)	.95	(.75-1.20)
Perceived racial/ethnic discrimination	.95	(.91-.99)	.98	(.94-1.02)
African American/Black participants				
Characteristic				
Study Site				
Miami		Reference		Reference
Tampa	.34	(.14-.83)	.27	(.11-.69)
Intervention Condition				
General health education		Reference		Reference
Cognitive behavioral therapy	2.82	(1.29-6.16)	1.57	(.73-3.35)
Annual income	1.01	(.74-1.37)	.85	(.97-.071)
Education	1.14	(.95-1.38)	.96	(.90-1.15)
Perceived racial/ethnic discrimination	.95	(.92-.97)	.97	(.94-.99)
Hispanic Participants				
Characteristic				
Study Site				
Miami		Reference		Reference
Tampa	1.28	(.40-4.05)	1.60	(.49-5.22)
Intervention Condition				
General health education		Reference		Reference
Cognitive behavioral therapy	1.20	(.54-2.66)	.81	(.35-1.87)
Annual income	1.07	(.83-1.38)	.96	(.74-1.24)
Education	1.01	(.85-1.20)	.98	(.82-1.17)
Perceived racial/ethnic discrimination	.99	(.96-1.02)	.99	(.96-1.02)

ppa, point prevalence abstinence; AOR, adjusted odds ratio; CI, confidence interval.
Models examined odds of abstinence in the past 7 days.
AOR <1.0 indicates decreased odds of abstinence per one-unit increase in perceived discrimination.

er perceived discrimination compared with Hispanics. Although these both represent US "minority" groups, the histories and lived experiences of these heterogeneous groups are distinct. Previous research has observed that Hispanics and Asians report fewer discriminatory experiences related to race or ethnicity.[2,3,31] Another possibility is that maladaptive behavior patterns in response to discrimination may differ across ethnic groups. Chavez et al[10] found that workplace discrimination was positively associated with binge drinking among Hispanics, and with smoking among African Americans and non-Hispanic Whites. The pattern of varying past-year perceived discrimination scores across racial/ethnic groups is consistent with previous research,[2] and shows that non-Hispanic Whites also report discrimination, albeit to a lesser extent than racial/ethnic minorities.

To our knowledge, this study was the first to examine whether the pattern of associations between perceived discrimination and tobacco cessation differed across racial/ethnic groups. The experience of discrimination

had an ostensibly negative impact on both non-Hispanic Whites and African Americans/Blacks. Among non-Hispanic Whites, more frequent perceived discrimination reduced the likelihood of cessation at post-intervention, but not at the 6-month follow-up. However, frequent perceptions of discrimination demonstrated a consistent, inverse association with cessation through 6-months among African Americans/Blacks. This supports models of stress exposures on tobacco maintenance among racial/ethnic minorities.[15] Moreover, it extends previous research demonstrating that racial discrimination is a stronger predictor of smoking among African Americans than social status[17] and that the psychological burden of perceived discrimination is greater among African Americans compared with other racial/ethnic groups.[2] In contrast to previous research,[23] we did not observe an association between discrimination events and 7-day ppa among Hispanics. Differences in intervention format, intensity, and level of social support may help explain the inconsistency. Moreover, Kendzor et al[23] included Spanish-speaking smokers of Mexican heritage, who may have differed from our participants in Miami and Tampa, Florida. Future prospective examinations of the role of racial/ethnic discrimination among Hispanics seeking to quit smoking should also assess country of origin, years in the United States, acculturation, and alcohol use.

If these associations reflect a causal relationship, an overarching implication of this analysis is that perceptions of discrimination may serve as a barrier to tobacco cessation.

This study does not address either causality or mechanisms underlying the observed associations. We identified longitudinal associations, which are consistent with a causal explanation, but we cannot rule out non-causal explanations, such as common third variables that could affect both perceived discrimination and/or smoking outcomes. With respect to mechanisms, previous research in a racially/ethnically diverse sample found that discrimination experiences reduce self-efficacy, which in turn, may decrease the likelihood of smoking abstinence with the first month after a quit attempt.[32] Moreover, attempts to regulate the internal emotional discomfort associated with stress might encourage maladaptive coping strategies, such as smoking. This mechanism has been proposed by others[33] who suggest that smoking may reflect a form of self-medication to cope with the stress of racial discrimination. Given the frequent report of this specific stressor in African Americans, racial discrimination may constitute a potent and chronic stressor in this population. Consequently, the summative experiences of discrimination and related stress may represent a strong motivator for smoking, a barrier for cessation, and a risk for smoking relapse, thus contributing to disparities. Future studies might also consider the potential roles of racial/ethnic differences in the type of cigarettes smoked (eg, menthol)[34] and associated nicotine and particulate matter exposure.[35] Future interventions might include strategies to address/cope with discrimination as a strategy to improve smoking cessation.

We note the strengths and limitations of this study. Strengths include the longitudinal design with follow-up through 6 months. The sample included adequate representation from the three largest racial/ethnic groups in the United States and conducted stratified analyses to compare patterns by group. We also controlled for income and education, to better isolate the role of self-identified racial/ethnic group, and biochemically verified smoking abstinence. Limitations include self-selection of participants, potential variations among smokers in different geographic locations, and the lack of information on Hispanics' country of origin or acculturation levels.

Conclusion

In conclusion, this study expands a growing literature on the role of racial/ethnic discrimination and tobacco use, with a focus on cessation. Racial discrimination is a predictor of tobacco smoking status.[2,8] Increasing our understanding of how racial discrimination affects treatment seekers can inform interventions designed

for those reporting such experiences. It would be prudent to conduct a minimal assessment of perceived discrimination at the beginning of treatment, particularly among African Americans. Culturally specific intervention approaches that include content to address coping with perceived discrimination and social injustice have demonstrated promise,[36] and should be considered part of a comprehensive strategy to respond to the needs of this group. Future research should include larger samples, assess country of origin and acculturation level among Hispanics, and seek to understand whether this association varies by heritage and/or discrimination context. The experience of racial/ethnic discrimination is detrimental to health, which may extend to efforts to become tobacco free.

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Conflict of Interest

No conflicts of interest to report.

Author Contributions

Research concept and design: Webb Hooper, Koru-Sengul, Antoni, Brandon; Acquisition of data: Webb Hooper, Calixte-Civil, K. Brandon, Koru-Sengul, Antoni, Lee, T. Brandon; Data analysis and interpretation: Webb Hooper, Verzijl, Koru-Sengul, Antoni, Simmons, T. Brandon; Manuscript draft: Webb Hooper, Calixte-Civil, K. Brandon, Asfar, Koru-Sengul, Antoni, Lee, Simmons; Statistical expertise: Webb Hooper, Koru-Sengul; Acquisition of funding: Webb Hooper, Koru-Sengul, T. Brandon; Administrative: Webb Hooper, Calixte-Civil, K. Brandon, Asfar, Koru-Sengul, Antoni, Simmons, T. Brandon; Supervision: Verzijl, K. Brandon, Asfar, Koru-Sengul, Lee, T. Brandon

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