Depression and Depression Care in Diabetes

Relationship to perceived discrimination in African Americans

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Depression is more prevalent in both African Americans and Caucasians with diabetes (1) than in nondiabetic control subjects (2), and it is associated with worse diabetes outcomes (3,4). Prospective studies (5) show that everyday encounters with discrimination predict subsequent depressive symptoms in nondiabetic individuals. When discrimination is perceived, specifically in health care, it may also interfere with depression care. This study investigated perceived discrimination, depressive symptoms, and depression care in diabetic African Americans.

RESEARCH DESIGN AND METHODS — Participants were African-American adults with diabetes attending 2004–2006 American Diabetes Association health fairs in northeastern U.S. cities. Attendees responded to a sign advertising "Research for African Americans with diabetes." After informed consent, participants completed questionnaires and provided fingerprick blood samples for A1C assessment (6). Participants were paid $5.00 and given A1C results with referrals to community health centers.

Demographic questions included age, sex, insurance, primary care provider, and socioeconomic status (SES), which was assessed with income and education. A medical history questionnaire asked about physician-diagnosed disorders (including depression) and whether medication was taken for each disorder. These questions were modeled after the Centers for Disease Control's survey questions (7,8) for patient report of physician-diagnosed disorders.

Participants completed three additional questionnaires, as follows. The Center for Epidemiological Studies Depression (CESD) scale (9) is a 20-item measure of depressive symptoms. A score of >21 discriminates between depressed and nondepressed individuals in medical populations (10,11). α in this sample was 0.87.

The Schedule of Racist Events (SRE) (12) is an 18-item questionnaire that measures frequency and stressfulness of racial discrimination situations (e.g., in salary, housing, by store clerks) over a lifetime and in the last year. One item was added that assessed perceived discrimination in health care settings. Lifetime frequency scores were used in analyses. α in this sample was 0.91.

The John Henryism scale (13) is a 12-item questionnaire that measures active psychological coping, which has been shown (14) to moderate physiological and psychological responses to discrimination. α in this sample was 0.91. All analyses controlled for age, sex, SES, diabetes type, and A1C using SPSS version 12.0.

RESULTS — Data were provided by 120 African Americans with diabetes. The typical participant was female, aged 56 years, had type 2 diabetes, and was in suboptimal glycemic control (Table 1). Average total lifetime frequency score on the SRE was 34.7 (mean). Item scores ranged from 1.3 to 2.6, and 6% of participants reported never experiencing discrimination. These data indicate slightly lower but comparable levels of racism relative to a large, representative sample of nondiabetic African Americans (15) (mean 42.3, item score range 2.1–2.9, and 2% answering never).

In linear regression, SRE frequency scores and covariates as a group predicted depressive symptoms [F (6,99) = 3.16, $P < 0.01$, $R^2 = 0.17$, adjusted $R^2 = 0.13$]. Higher SRE frequency scores independently predicted higher CESD scores [F (5,98) = 3.88, $P < 0.01$]. Higher A1C and female sex were also independent predictors ($P < 0.05$). Effects were not modified by coping.

In logistic regression, SRE frequency scores and covariates as a group distinguished participants with CESD scores >21 from those with scores ≤21 [χ^2 (6) = 16.19, $P < 0.05$, Cox & Snell R^2 = 0.15]. The Hosmer & Lemeshow index was not significant, indicating acceptable model fit ($P = 0.16$). Higher SRE frequency scores independently predicted greater likelihood of CESD scores >21 (odds ratio [OR] 1.07 [95% CI 1.01–1.13] $P < 0.05$). Older age significantly decreased odds of elevated symptoms (0.93 [0.87–0.99], $P < 0.05$). Effects were not modified by coping.

In logistic regression, SRE frequency scores and covariates as a group distinguished participants who reported physician-diagnosed depression from participants who did not [χ^2 (7) = 16.37, $P < 0.05$, $R^2 = 0.15$, Hosmer & Lemeshow $P = 0.64$]. Higher SRE frequency scores independently predicted greater likelihood of patient-reported, physician-diagnosed depression (OR 1.06 [95% CI 1.00–1.18] $P < 0.05$). Higher CESD scores were also an independent predictor (1.10 [1.02–1.18], $P < 0.05$). Effects were not modified by coping.

In logistic regression, perceived discrimination in health care settings and covariates as a group distinguished participants who had used antidepres-

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Abbreviations: CESD, Center for Epidemiological Studies Depression; SES, socioeconomic status; SRE, Schedule of Racist Events.
A table elsewhere in this issue shows conventional and Système International (SI) units and conversion factors for many substances.
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Table 1—*Descriptive demographic statistics*

	Mean ± SD or %
Age (years)	55.7 ± 11.6
Female	74.2
Education	
Less than high school	10.1
High school graduate or equivalent	18.5
Technical training or part college	36.9
College graduate	34.4
Annual income	
<$20,000	27.3
$20,001–40,000	28.3
$40,001–60,000	26.4
>$60,000	18.0
Type of diabetes	
Type 2 diabetes	88.3
Age at diabetes diagnosis (years)	45.4 ± 13.5
Duration of diabetes (years)	10.1 ± 9.9
Diabetes treatment	
Diet only	12.5
Oral agents	55.8
Insulin only	15.8
Oral agents and insulin injections	15.8
A1C (%)	7.6 ± 1.8
CESD scale	11.2 ± 9.7
SRE frequency	34.7 ± 11.6
SRE stressfulness	32.3 ± 14.9

sants from those who had not [χ^2 (7) = 15.95, $P < 0.05$, $R^2 = 0.37$, Hosmer & Lemeshow $P = 0.20$]. Higher frequency scores on perceived discrimination in health care settings independently predicted decreased likelihood of taking antidepressants (OR 0.16 [95% CI 0.03–0.86], $P < 0.05$). There were trends for higher SES ($P = 0.07$) and higher A1C ($P = 0.05$) to predict greater likelihood of using antidepressants. Effects were not modified by coping.

SRE frequency scores did not vary by sex. However, SRE stressfulness scores were higher for women (33.1 ± 15.3) than men (29.5 ± 12.5) after controlling for covariates [$F(5,98) = 4.14, P < 0.05$].

CONCLUSIONS — Our main finding is that perceived discrimination is related to depression in African Americans with diabetes. A higher occurrence of perceived discrimination was related to higher depressive symptoms, likelihood of clinically significant symptoms, and likelihood of patient-reported, physician-diagnosed depression. While men and women reported similar frequency of discriminatory events, these events were experienced as more stressful to women, although it should be noted that we had few male participants.

Perceptions of discrimination within health care settings were associated with not taking antidepressants. Individuals who perceived discrimination in their health care system may have had more depressive symptoms, but those same individuals may have been less trusting of providers or the medications they recommended. Implementing pharmacotherapy for depression may be challenging in these individuals. Practitioners are encouraged to pursue cultural competence training in order to avoid behaviors that can be perceived as discriminatory to patients.

Apart from perceived discrimination, other risk factors for depression indicators in this study were consistent with past reports, including female sex, higher A1C, and younger age. Higher SES and higher A1C were marginally associated with using antidepressants.

Surprisingly, coping did not buffer the association between discrimination and depression outcomes. This was likely due to low power. Alternatively, John Henryism is a specific type of coping, and it may be that other psychological resources, such as social support or spirituality, may be important in buffering the effects of discrimination.

Several limitations should be noted. The recruitment strategy may have produced a nonrepresentative sample, as suggested by the slightly lower endorsement of racist events relative to other published reports. Diagnosis and medication data were self-reported. The direction of association could not be determined by the cross-sectional design. It is possible that depressed individuals were more likely to perceive interpersonal stimuli as noxious, and they may have been more likely to make racial attributions about the noxious stimuli. For this reason, we investigated perceived frequency (rather than stressfulness) of discriminatory events. The fact that women reported equivalent frequency but greater stressfulness of discriminatory events suggests that individuals can, to some degree, differentiate an event from their psychological response to it. Nonetheless, depression may lead to heightened perceptions of discrimination, or both may share a common precursor, such as personality characteristics. Prospective studies of representative samples should control for personality variables and investigate additional moderators.

It may not be possible to eradicate discrimination from patients' environments. However, patients' mental health outcomes may be improved by interventions both to decrease interactions with the health care system that could be perceived as discriminatory and to help patients enhance their psychological resources to cope with perceived discrimination.

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