

PERCEIVED RACIAL DISCRIMINATION IN HEALTH CARE AND ITS ASSOCIATION WITH PATIENTS' HEALTHCARE EXPERIENCES: DOES THE MEASURE MATTER?

Objectives: Examine whether three measures of perceived racial discrimination in health care detect similar rates of discrimination and show similar associations with patients' healthcare experiences.

Design: Cross-sectional observational study involving telephone surveys and medical record reviews.

Setting: Veterans Affairs Pittsburgh Healthcare System

Participants: 50 White and 50 African American veterans with diabetes

Main Outcome Measures: Three types of measures of perceived racial discrimination in health care were compared: single-item and multi-item measures assessing personal experiences of discrimination in healthcare settings, and a measure assessing general racism in the healthcare system. Associations of each measure with patient-reported problems with their medical care and receipt of recommended preventive screenings were also explored.

Results: More African American than White veterans reported perceived discrimination on all measures (personal discrimination, single-item: 42% vs 6%, $P<.001$; personal discrimination, multi-item: 42% vs 18%, $P=.01$; general racism: 74% vs 40%, $P=.001$). In the total sample, discrimination was more likely to be reported on the general racism measure than on the single-item (OR=36.53, 95% CI=7.95–167.89) or multi-item measures (OR=20.28, 95% CI=5.12–80.34) of personal discrimination. The multi-item measure of personal discrimination (OR=3.96, 95% CI=1.29–12.18) and general racism measure (OR=3.61, 95% CI=1.34–9.71) were significantly associated with patient-reported problems with their care. Receipt of recommended screenings was not associated with any of the discrimination measures.

Conclusions: Different measures of perceived racial discrimination in healthcare settings yield different rates of discrimination and show variable associations with patients' perceptions of care. (*Ethn Dis.* 2010;20:40–47)

Key Words: Perceived Discrimination, Quality of Care, Healthcare Utilization, Diabetes

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INTRODUCTION

More than 200 empirical studies have investigated the health implications of discrimination,^{1–3} which refers to differential and negative treatment of individuals because of their membership in a particular demographic group (eg, race, sex, class).⁴ Although discrimination can be based on any characteristic and may affect health even when it is not directly perceived,⁵ most research has focused on the health effects of race or ethnicity-based discrimination that is directly perceived by targeted individuals.^{1–3} Such research has demonstrated that perceived racial and ethnic discrimination is associated with decrements in both mental and physical health, as well as an increase in negative health behaviors (eg, cigarette smoking, alcohol use).^{1,2,6–11}

The current study focuses on perceptions of racial discrimination encountered in healthcare settings, which

has been the focus of a relatively small subset of studies.^{7,12–26} Discrimination may arise in healthcare settings due to a number of factors.^{4,27} For instance, geographic location and bureaucratic complexity of medical facilities may result in differential access to and utilization of health services for different racial and ethnic groups. Unequal healthcare delivery can also result from the ambiguous nature of clinical decisions, misunderstandings in doctor-patient communication, provider attitudes and stereotypes, and/or expectations patients have regarding clinical encounters.

Understanding discrimination in healthcare settings is particularly important for several reasons. First, the healthcare system has a moral and legal obligation to provide equal care to all patients, regardless of their race, ethnicity, or other characteristics. Second, discrimination in healthcare settings may cultivate patient disengagement from the healthcare system, thereby negatively affecting future healthcare encounters and patient health.^{12,17,18,22,23,25,26} Finally, discrimination that is perceived within healthcare settings can potentially be addressed through quality improvement efforts implemented by healthcare systems, whereas there may be little healthcare systems can do in response to discrimination that occurs outside of their institutions.

For these reasons, it is important to determine the prevalence of perceived discrimination in healthcare settings and to understand its potential impact. Unfortunately, work in this area is inhibited by a wide variation in how perceived discrimination in healthcare settings has been measured across studies.²⁸ Most studies have measured

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healthcare discrimination with either a single item from a scale of perceived discrimination²⁶ or with unique items developed for inclusion in a given survey.^{6,7,12,20,23-25} Others have adapted existing, multi-item measures of perceived discrimination to assess discrimination that is perceived particularly within healthcare settings.^{16,29} Still others have asked patients about their general perceptions of racism in health care rather than whether patients have personally experienced such discrimination.^{13,17} The variation in measurement has made it difficult to draw conclusions about the prevalence and impact of discrimination in health care.

The current study was undertaken as an initial effort to compare the prevalence of perceived discrimination in health care across multiple measures within a single patient population. In a sample of 100 African American and White adults with diabetes, this exploratory study measured perceived discrimination using 3 types of measures that have often been used in prior research: a single-item assessing personal experiences with discrimination in health care (ie, personal discrimination, single-item),³⁰ a multiple-item measure adapted from a commonly-used measure of personal experiences with discrimination (ie, personal discrimination, multi-item),²⁹ and a measure assessing perceptions of general racism in the healthcare system, regardless of one's personal experiences with discrimination (ie, general racism).¹⁷

The primary aim was to examine differences in the prevalence of perceived discrimination in health care across patient race and type of measure. Based on previous findings that discrimination is more commonly experienced by racial and ethnic minorities than by Whites,^{7,30} we predicted that African Americans would report more perceived discrimination than Whites across all measures of discrimination. Given that rates of perceived discrimination have been somewhat lower when

Table 1. Sociodemographic characteristics of the sample

	African American (n=50)	White (n=50)	P-value*
Age, mean (range, SD)	63 (40-86, 11)	70 (52-85, 9)	.002
Income			.049
<\$20K	50%	32%	
>\$20K	40%	64%	
Missing	10%	4%	
High school, GED or less	54%	46%	.424

* t-test with unequal variances for age, chi-square test for income and education.

assessed with a single-item than with multiple-items^{7,29}, we also predicted that the prevalence of personal discrimination for both Whites and African Americans would be higher on the multi-item than single-item measure. Finally, it has been well-established in the psychological literature that people are more likely to perceive discrimination against their group in general rather than against themselves personally.³¹ We therefore predicted that rates of perceived discrimination would be higher on the general racism measure than on either the single-item or multi-item measure of personal discrimination.

A secondary aim was to explore whether each measure of perceived discrimination was associated with patient experiences with the healthcare system, including patients' perceptions of problems with their medical care and their receipt of screenings recommended for optimal diabetes management. This aim was included to explore whether conflicting evidence in the literature regarding whether perceived discrimination is associated with less patient satisfaction and/or healthcare utilization could be due to different measures of perceived discrimination being used across studies.^{17,18,24,25}

METHODS

Study Sample

The sample included 100 patients from the Veterans Affairs Pittsburgh Healthcare System (VAPHS) who were

aged ≥18 years, self-identified their race as White or African American, had a diagnosis of diabetes from at least 2 years prior to the start of the study, and had no diagnosis of Alzheimer's or dementia (Table 1). To recruit the sample, a random sample of 479 patients (234 African Americans, 245 Whites) who met the inclusion criteria were identified from a VAPHS administrative database. Patients were mailed an initial letter and up to 2 follow-up letters inviting them to participate in a 30-minute telephone survey regarding their experiences with seeking treatment for diabetes. Consistent with local Institutional Review Board policies, only patients who indicated their interest in the study by mail or telephone were able to be enrolled in the study. African American (n=82, 35%) and White (n=93, 38%) patients were equally likely to express interest in the study ($\chi^2(1)=0.44, P=.51$). Trained research staff telephoned interested patients to explain the study in more detail, obtain patients' verbal informed consent, and administer the survey. Due to funding limitations, recruitment efforts ended after the goal of enrolling 100 patients had been met. Patients were compensated \$20 for their participation.

Measures of Perceived Discrimination in Health Care

Personal Discrimination, Single-Item

An item from the validated and reliable Experiences of Discrimination

Table 2. Race differences in prevalence of perceived racial discrimination in health care across three types of measures

	African Americans (n=50)	Whites (n=50)	Unadjusted P-value†	Adjusted P-value‡
Personal discrimination, single-item measure (PD-S): While getting medical care, have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior because of your race ethnicity, or color (% reporting that it occurred at least once)*	42	6	<.001	.004
Personal discrimination, multi-item measure (PD-M): When getting health care, how often has each experience happened to you because of your race or color (% reporting that experience occurred at least once)				
Treated with less courtesy than other people	30	4	.001	.032
Treated with less respect than other people	30	2	<.001	.027
Received poorer services than other people	30	6	.002	.026
Had a doctor or nurse act as if he or she thinks you were not smart	28	6	.004	.135
Had a doctor or nurse act as if he or she was afraid of you	22	2	.002	.151
Had a doctor or nurse act as if he or she was better than you	24	14	.202	.870
Felt like a doctor or nurse was not listening to what you were saying	34	16	.038	.498
% reporting any of the above*	42	18	.009	.134
General racism measure				
Doctors treat African American and White people the same. (% disagree or strongly disagree)	65	37	.007	.041
Racial discrimination in a doctor's office is common. (% agree or strongly agree)	38	14	.009	.032
In most hospitals, African American and Whites receive the same kind of care. (% disagree or strongly disagree)	66	25	<.001	.001
African Americans can receive the care they want as equally as White people can. (% disagree or strongly disagree)	53	33	.050	.270
% perceived discrimination on any of the above*§	74	40	.001	.004

* Variable used in regression models.

† Unadjusted P values comparing African American and white responses using chi-square tests.

‡ P-values for association of race with each measure, adjusting for patient age, education, and income, using logistic regression models.

§ Responses consistent with perceived discrimination were disagree or strongly disagree for items 1, 3, and 4, and agree or strongly agree for item 2.

(EOD) measure³⁰ was used as the single-item measure of personal discrimination in healthcare settings (Table 2). The original EOD asks how often (never, once, 2 or 3 times, 4 or more times) patients have encountered discrimination in 9 different settings, one of which is while getting medical care. The single medical care item has been used in previous studies to examine perceptions of discrimination in health care.^{25,26} Because the current study focused on a VA patient population, the item was modified slightly so that it assessed patients' experiences of discrimination while getting medical care in either Veterans Affairs or non-Veterans Affairs facilities. Responses were dichotomized into never vs ever for analyses.

Personal Discrimination, Multi-Item

The multi-item measure of personal discrimination in healthcare settings was an adaptation of Williams' validated and widely-used Everyday Discrimination measure.^{32,33} Williams' original measure assesses how often (never, once, 2 or 3 times, or 4 times or more) one has encountered 7 types of unfair treatment and the reason for the treatment (eg, race, sex). In previous studies, an adapted version was created specifically to assess race-based unfair treatment encountered within healthcare settings.^{16,29} The healthcare-specific adapted version has shown excellent reliability in a variety of diverse patient populations^{16,29} and was used in the current study (Table 2). We dichotomized each response into never vs ever

and counted the number of items on which patients reported perceiving discrimination (coefficient alpha = .94). Preliminary analyses indicated that this count variable was not normally-distributed and that responses were best categorized into 2 levels (none vs any) for analyses.

General Racism in the Healthcare System

Perceptions that racism against African Americans exists in the healthcare system were measured by the 4-item Racism in Health Care Index (Table 2).¹⁷ This was referred to as the "general racism" measure in the current study to highlight that it assesses perceptions of racism in health care regardless of patients' personal experi-

ences with such discrimination, which are assessed by the single-item and multi-item measures of personal discrimination. For this measure, patients were asked to indicate the extent to which they agree with four statements about racial discrimination in healthcare settings (strongly disagree, disagree, neither disagree or agree, agree, strongly agree). The number of statements on which patients perceived discrimination was calculated (coefficient alpha = .87). Preliminary analyses indicated that this count variable was not normally-distributed and that responses were best categorized into 2 levels (perceived discrimination on 0 vs >0 items) for analyses.

Sociodemographic Variables

Self-reported race, age, highest level of education completed, and income were assessed during the telephone survey.

Exploratory Outcome Measures

Perceptions of Problems with Health Care

Patients' perceptions of the care they receive for diabetes were measured using the 4-item Doctor-Patient Relationship subscale of the Questionnaire on Stress in Patients with Diabetes – Revised.³⁴ This scale assesses whether each of the following is a problem for the patient: different doctors give you different information regarding your diabetes; you feel insufficiently informed about your diabetes; doctors do not spend enough time with you; and your doctor does not treat your diabetes in the best possible way (coefficient alpha = .80). For analyses, we categorized patients into those who reported no problems vs at least one problem.

Receipt of Screenings for Diabetes Complications

Electronic medical records were examined to assess whether patients had received all recommended screen-

ings for diabetes complications in the past 2 years. Based on standards from the Diabetes Quality Improvement Project, these included at least one hemoglobin A1c test, dilated eye exam, comprehensive foot exam, and urine protein test within the past year, and a fasting lipid test within the past 2 years.³⁵ Because all 5 tests are recommended for optimal diabetes management, patients were categorized as having received all 5 or fewer than 5 tests. Given that this outcome was based on Veterans Affairs medical records, patients who reported receiving no care from Veterans Affairs facilities in the past 12 months ($n=9$) were excluded from analyses of this outcome.

Statistical Analyses

Individual items and dichotomized summary scores of perceived discrimination measures were compared between races using chi-square tests for bivariate comparisons and logistic regression for tests of racial differences controlling for patient age, education, and income. Correlations among the dichotomized measures of perceived discrimination were examined in the total sample and within each race using phi coefficients. Mixed effect logistic regression models, which take into account the dependence of multiple outcomes within the same individual, were used to compare the dichotomized measures of perceived discrimination, adjusting for patient race, age, education, and income. Interactions between race and each perceived discrimination measure were tested and none were found to be significant, so models without these interactions are reported.

Separate regression models were used to test the association of each discrimination measure with patients' perceptions of care and receipt of recommended screenings for diabetes management. First, base models that included race, age, education, and income as predictors of each outcome

were tested. The effects of perceived discrimination were then tested by adding each of the three measures one at a time to the base models. A criterion of $P<.05$ was used to determine statistical significance. Analyses were conducted using STATA/MP 10.1 (College Station, TX, 2008).

RESULTS

Sample Characteristics

The sample included 50 African Americans and 50 Whites, 99% of whom were male. Compared to Whites, African Americans were significantly younger and had lower incomes, but did not differ in educational attainment (Table 1).

Race Differences in Perceived Discrimination across Measures

Racial differences in the percentage of patients reporting discrimination on each measure of perceived discrimination in health care are reported in Table 2. As expected, African Americans were more likely than Whites to perceive discrimination in health care, although exact rates varied across individual items and dichotomized summary measures. Based on the personal discrimination, single-item measure, 42% of African Americans and 6% of Whites had experienced discrimination while getting medical care, a difference that was significant even after adjusting for patient age, education, and income ($P=.004$).

On individual items within the personal discrimination, multi-item measure, rates of perceived discrimination tended to be higher among African Americans (22%–34% across items) than among Whites (2%–16% across items). Although more African Americans than Whites perceived discrimination on at least one of the items, this difference was not statistically significant after controlling for patient characteristics (42% vs 18%, $P=.134$).

Table 3. Phi correlation coefficients among perceived discrimination measures for total sample and each racial group

Measures of perceived discrimination	Total Sample		African Americans		Whites	
	PD-S	PD-M	PD-S	PD-M	PD-S	PD-M
PD-M	.55†		.51†		.54†	
General racism	.49†	.48†	.50†	.50†	.31*	.36*

PD-S: personal discrimination, single-item measure.
 PD-M: personal discrimination, multi-item measure.
 * $P < .05$.
 † $P < .001$.

Finally, on most of the individual items assessing general racism in the healthcare system, rates of perceived discrimination were higher among African Americans (38%–66% across items) than among Whites (14%–37% across items). African Americans were significantly more likely than Whites to perceive discrimination on at least one of the 4 individual items (74% vs 40%, respectively, $P = .004$).

Comparisons across Measures of Perceived Discrimination

As shown in Table 3, the three dichotomized measures of perceived discrimination were significantly positively correlated with one another in the total sample and within each racial group. When all three measures were

included in a mixed effect regression model (# of observations = 279, # of patients = 93), there was a significant effect for race such that African Americans reported more perceived discrimination than Whites (OR = 18.57, 95% CI = 2.43–142.04). Rates of discrimination also differed across measures, such that patients were more likely to report perceived discrimination on the general racism measure compared to the personal discrimination, single-item (OR = 36.53, 95% CI = 7.95–167.89) or multi-item (OR = 20.28, 95% CI = 5.12–80.34) measures. Responses were not significantly different on the personal discrimination, single-item and personal discrimination, multi-item measures (OR = 1.80, 95% CI = .61–5.32).

Perceived Discrimination and Patients' Perceptions of Care

Overall, 56% of patients reported at least one problem with their diabetes care (54% and 58% of African Americans and Whites, respectively). In a model containing only patient characteristics as predictors, the likelihood of reporting a problem was not significantly associated with patient race, education, or income, but did decline with age (OR = .95, 95% CI = .91–1.00, $P = .047$; Table 4, Model 0). Models in which each measure of perceived discrimination was separately added to the base model indicated that the likelihood of patient-reported problems was not significantly associated with the personal discrimination, single-item measure (OR = 2.57, 95% CI = .77–8.56; Table 4, Model 1). However, the personal discrimination, multi-item (OR = 3.96, 95% CI = 1.29–12.18; Table 4, Model 2) and general racism (OR = 3.61, 95% CI = 1.34–9.71; Table 4, Model 3) measures were each associated with nearly a four-fold increase in the likelihood of reporting a problem with care.

Perceived Discrimination and Patients' Receipt of Recommended Screenings

Patients received a median of 4 (IQR = 3–5) out of 5 recommended

Table 4. Logistic regression models testing association of perceived discrimination measures with patient-reported problems with diabetes care, adjusting for sociodemographic characteristics

Predictors	Model 0		Model 1		Model 2		Model 3	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Sociodemographics								
African American race	0.46	(0.17–1.22)	0.35	(0.12–1.01)†	0.36	(0.13–1.02)†	0.29	(0.10–0.85)*
Age	0.95	(0.91–1.00)*	0.96	(0.91–1.00)†	0.96	(0.91–1.01)†	0.95	(0.91–1.00)*
Education (>high school)	1.28	(0.51–3.24)	1.38	(0.54–3.56)	1.20	(0.46–3.11)	1.30	(0.50–3.38)
Income <\$20,000	0.41	(0.16–1.04)†	0.43	(0.17–1.11)†	0.49	(0.19–1.29)	0.43	(0.17–1.14)†
Perceived discrimination								
PD-S			2.57	(0.77–8.56)				
PD-M					3.96	(1.29–12.18)*		
General racism							3.61	(1.34–9.71)*
Pseudo R ²	.07†		.09*		.12*		.12*	

$N = 93$ for all models.
 PD-S: personal discrimination, single-item measure.
 PD-M: personal discrimination, multi-item measure.
 * $P < .05$.
 † $P < .10$.

screenings for diabetes complications within the prior two years, with 35% of both Whites and African Americans having received all 5 tests. Receiving all 5 tests was not significantly associated with patient characteristics or with any of the measures of perceived discrimination (data not shown).

DISCUSSION

This study compared rates of perceived racial discrimination in health care among African American and White patients using three different measures of discrimination. The measures were moderately correlated with one another, suggesting that they tap a similar underlying construct. However, rates of perceived discrimination were higher when assessed using a measure of general racism in health care than when assessed using a single-item or multi-item measure of personal experiences with discrimination in healthcare settings. This is consistent with the robust finding in psychological literature that people report less discrimination directed at themselves than at their group in general.³¹ The current study indicates that this personal/group discrimination discrepancy extends to healthcare discrimination.

Rates of personal discrimination in healthcare settings did not differ significantly when assessed using a single-item or multi-item measure. This is somewhat surprising, given that rates of perceived discrimination in health care tend to be lower in studies using only a single item to assess discrimination than in those using multi-item measures.^{7,22,25,26,29} Studies using single-item measures have found that 6%–12% of African American patients report having experienced racial discrimination in healthcare settings,^{7,12,13,22,25,26} whereas discrimination was reported by 63% of African American patients in a study using a multi-item measure.²⁹ Past studies,

however, have not compared single-item and multi-item measures within the same patient population, as in the current study.

A secondary goal of the current study was to explore whether the measure used to assess discrimination in health care influences the degree to which perceived discrimination is associated with patients' experiences with the healthcare system. It has been proposed that experiences of discrimination foster disengagement from the healthcare system.²⁵ Several studies have reported significant associations between perceived discrimination and indicators of patient disengagement (eg, delaying necessary care),^{12,15–18,20,23} but conflicting evidence has also been reported.^{12,16,18,24–26} Most studies that have found no association,^{24–26} or inconsistent relationships across outcomes,^{12,18,23} have relied on single-item measures of perceived discrimination, which may have contributed to the inconsistent findings. In the current study, a multi-item measure assessing personal discrimination encountered in healthcare settings was associated with patient-reported problems with their care, whereas a single-item measure failed to predict this outcome.

None of the measures in the current study were associated with patients' receipt of screenings recommended for optimal diabetes management, even though previous studies have reported that perceived discrimination among patients with diabetes is associated with a lower likelihood of obtaining A1c tests, eye exams, and diabetic foot exams.^{12,23} Past studies relied on patient self-report to assess screening behavior whereas the current study obtained this information from medical records.

Several limitations should be considered when interpreting the findings of this study. This study was designed as an exploratory study with a small sample and, as such, is not powered to detect small effects or interactions among the variables. The sample size,

coupled with the low prevalence of perceived discrimination reported by Whites, required the summary measures of discrimination to be dichotomized, which may have further limited the study's statistical power. The nature of the study sample, which consisted of older, primarily male Veterans with diabetes who were recruited by mail from a single Veterans Affairs facility, also constrained the generalizability of our findings. The differences found across measures in this sample, however, suggest the importance of examining these issues in a larger study with a more representative group of patients.

Although the study compared the 3 types of measures most commonly used in research on perceived discrimination in health care, it was not possible to assess the impact of every factor that could affect reports of discrimination, such as the timeframe in which patients experienced discrimination (eg, in the past 12 months vs ever) or whether the instruments are self-administered or interviewer-administered.¹ Furthermore, the measures of discrimination in this study assessed patients' perceptions of discrimination rather than verifiable instances of discrimination. It is therefore unclear whether the rates of discrimination reported by patients are over-, under-, or accurate estimates of patients' actual encounters with discrimination. However, patient perceptions of discrimination are likely to influence their reactions or behavior in a given situation,³⁶ regardless of whether discrimination has objectively occurred, thereby justifying the focus on perceived rather than actual discrimination.

This study also focused on only two measures of patient experiences with the healthcare system, including patient-reported problems with their care and screening behavior. There may be other aspects of patient experiences with the healthcare system that are more sensitive to patients' perceptions of discrimination that were not examined in this study. The study's cross-sectional design

also does not allow one to draw causal conclusions about the relationships observed between measures of perceived discrimination and patients' receipt of care.

These limitations notwithstanding, this study makes a notable contribution to existing literature on perceived discrimination and health care by examining how the prevalence of perceived discrimination in healthcare settings and its association with patient experiences depends on how perceived discrimination is measured. The current study suggests that measures that assess patients' perceptions of general racism in the healthcare system yield considerably higher rates of discrimination than measures that assess patients' personal experiences with such discrimination. Moreover, single-item measures of patients' personal experiences with discrimination in healthcare settings are less likely to be associated with patient-reported problems with their medical care than a multi-item measure of personal discrimination.

Based on these findings, healthcare systems should consider assessing patients' experiences with discrimination and how they relate to outcomes of interest using the multi-item measure of personal discrimination from the current study. Collecting this information as part of standard quality control activities would allow healthcare systems to monitor the extent to which their patients perceive discrimination while obtaining services. Assessing whether perceived discrimination is a problem for a given healthcare system is an important first step towards developing strategies to address it. Regularly assessing patients' perceptions of healthcare discrimination using a reliable, sensitive measure could provide valuable information to guide patient outreach or provider education activities designed, in part, to reduce perceived discrimination in health care and its negative influence on patients' perceptions of care.

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