

PERCEIVED DISCRIMINATION AND REPORTED TRUST AND SATISFACTION WITH PROVIDERS IN AFRICAN AMERICANS: THE JACKSON HEART STUDY

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Objectives: 1) To examine the association of multiple dimensions of discrimination with reported trust and satisfaction with providers; 2) to report within-group differences among African Americans (AAs).

Methods: Descriptive cross sectional study. The study population included AAs aged 35 to 84 years from the Jackson Heart Study (JHS) (N=5,301). Poisson regression (PR) was used to quantify the association between perceived discrimination and reported trust and satisfaction with providers before and after controlling for selected characteristics.

Main Measures: Measures of perceived discrimination included everyday, lifetime, burden from lifetime discrimination, and stress from discrimination. Outcomes included trust and satisfaction with providers.

Results: The mean everyday discrimination score was 2.11 (SD±1.02), and the mean lifetime discrimination score was 2.92 (SD±2.12). High (vs low) levels of everyday discrimination were associated with a 3% reduction in the prevalence of trust in providers (PR .97, 95% CI .96, .99) in all models. In fully-adjusted models, high (vs low) lifetime discrimination was associated with a 4% reduction in the prevalence of trust and satisfaction (PR .96, 95% CI .95, .98). Burden of discrimination was not associated with trust or satisfaction, but stress from discrimination was inversely associated with satisfaction.

Conclusions: The significant association between discrimination and mistrust and dissatisfaction suggests that health care providers should be made aware of AA perceptions of discrimination, which likely affects their levels of trust and satisfaction. *Ethn Dis.* 2017;27(3):209-216; doi:10.18865/ed.27.3.209

INTRODUCTION

In spite of strong professional norms against overt bias and discrimination, researchers have observed moderate levels of implicit bias against African Americans (AAs) and other people of color.¹ Perceived discrimination strongly influences patient response to health care providers²⁻³ and may account for the greater mistrust, dissatisfaction, and negative perceptions of providers reported by AAs compared with Caucasians.^{4,5} Researchers have reported links between trust, satisfaction and perceptions of discrimination from providers.⁶⁻⁹

Trust in health care providers is the belief that the provider will act for the benefit of the patient.¹⁰ Satisfaction, which is related but distinct from trust, is an evaluation of past experiences with health care providers or the health care system.¹¹ Both trust

and satisfaction are essential for establishing and maintaining lasting relationships with health care providers to promote beneficial provider-patient interaction, continuity of care, and adherence to recommended therapies.

Research examining the relationship between perceptions of racial discrimination and trust and satisfaction with health care providers relies mainly on one dimension of discrimination; very little explanation of within-group differences are found among AAs.^{3,12} The Jackson Heart Study (JHS), the largest prospective longitudinal study of the etiology of cardiovascular disease (CVD) in AAs, provides us with the opportunity to concomitantly examine within-group differences in perceived discrimination and assess the extent to which multiple dimensions of perceived discrimination (everyday, lifetime, burden, and stress from discrimina-

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tion) are associated with trust and satisfaction with providers. This study explores and advances our understanding of mistrust of and non-satisfaction with health care providers as outcomes among a large, highly discriminated racial group. Our study provides an examination of how these outcomes are shaped by multiple dimensions of discrimination (everyday – chronic experiences of unfair

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treatment, lifetime – acute experiences of unfair treatment, and burden and stress from discrimination – consequences of unfair treatment). We hypothesized that measures of discrimination will be inversely associated with trust and satisfaction.

METHODS

The data for this cross-sectional study were collected from 5,301

JHS participants during the baseline home induction interviews and the initial clinic visit conducted between September 2000 and March 2004. The JHS is a longitudinal prospective study of AAs aged 35 to 84 years who were recruited from three counties in the Jackson, Mississippi metropolitan area. Participants, after providing informed consent, completed home interviews, self-administered questionnaires, and in-clinic examinations to obtain a wide range of demographic, socioeconomic, psychosocial, behavioral, anthropometric, health history, and clinical data. All data were collected and measured by trained AA interviewers and technicians. This study was approved by institutional review boards of the collaborating institutions, University of Mississippi Medical Center, Jackson State University, and Tougaloo College.¹³⁻¹⁵

Independent Variables

Everyday and lifetime discrimination were measured using the JHS Discrimination Instrument (JHS-DIS), which was administered by trained AA interviewers during the baseline examination (Visit 1). The scale used was taken from the Williams' everyday discrimination scale and demonstrates good internal reliability (Cronbach's alpha, $\alpha=.88$).¹⁶ The scale included questions such as, "How often on a day to day basis do you have the following experiences 'treated with less courtesy and... less respect...people act as if...you are dishonest...you are threatened.'" Participants were given a range from 1 (never) to 7 (several times a day). The sum of the items was calculated as a continuous score.¹⁶⁻¹⁷

The measure of lifetime discrimination was adapted from the Krieger scale ($\alpha=.78$).¹⁸ Participants were asked about their experiences of unfair treatment over their lifetime across 9 settings (ex: school, work, getting a job, etc.). The sum of the items constituted the lifetime discrimination score.¹⁹⁻²⁰ The continuous everyday and lifetime discrimination scores were divided into tertiles (low, medium, high) to investigate threshold and discontinuous effects and were also measured continuously in standard deviation (SD) units in the regression analysis.

Burden of lifetime discrimination was assessed following lifetime discrimination. Participants with at least one report of lifetime discrimination were asked "When you had experiences like these, had discrimination interfered with...life?", and "How much harder has life been?" (not at all, a little, some, or a lot). A continuous score was created by summing the responses, which ranged from 1 (low burden) to 4 (greater burden). Internal reliability ($\alpha=.63$) was moderate. Burden of lifetime discrimination was also divided into tertiles, and measured as a continuous variable in SD units. Because researchers have reported that stress is a key determinant of the adverse health consequences of discrimination,²¹ we examined the stress derived from lifetime discrimination (a component of the 'burden' index) as a third dimension of discrimination. Participants were asked "When you had experiences like these over your lifetime, were they—very stressful, moderately stressful, or not stressful?" Stress from dis-

crimination was restricted to persons reporting at least one occurrence of lifetime discrimination. The final dimension of discrimination included unfair treatment in getting medical care (yes/no).

Dependent Variables

The outcomes of interest were trust and satisfaction with providers. Participants were asked to rate how much they trusted their health care provider. Their responses were dichotomized to trust if the response was very much or somewhat, and distrust if the response was not very much or not at all. Satisfaction with health care providers was measured by the question, "Overall, how satisfied are you with your regular (or most recent) doctor or health professional?" Participants' responses were dichotomized to satisfied and dissatisfied.

Covariates

Covariates included age (continuous), sex (male/female), insurance status (insured vs uninsured), income, education and perceived health status (good or poor). Income was categorized as low \leq \$25,000, middle= \$25,000-49,999, and high $>$ \$50,000. Education was measured as years of schooling completed and included three categories: 1) less than high school; 2) high school graduate (or general equivalency diploma) to some college or vocational school (1-3 years), or associate's degree; 3) college graduate or more (+4 years). Participants were asked to rate their health as excellent, good, fair, or poor. We dichotomized this variable in models to "good" or "poor," where those with

excellent, good, and fair, health were considered to have "good health."²²

Statistical Analysis

Of the 5,301 participants who completed the examination, 568 were excluded because of missing data in education (n=19), discrimination measures (n=513), health status (n=11), and health insurance (n=25). Additionally, 594 cases were excluded due to missing the trust-in-provider outcome and 147 were excluded due to missing the satisfied-with-provider outcome. This restricted the regression models to 4,139 and 4,586 for trust and satisfaction with provider, respectively.

Baseline characteristics were examined by perceived trust and satisfaction and tested for differences using chi-square or analysis of variance (ANOVA) for categorical and continuous variables, respectively. The baseline characteristics were additionally examined by dimensions of discrimination and tested for differences. Sex-pooled associations of measures of discrimination with trust and satisfaction with providers were estimated using Poisson regression, which estimated the prevalence ratios (PR, 95% confidence interval-CI) of discrimination with the outcomes of interest. The models were constructed sequentially, where the first model was unadjusted, and the second model adjusted for age, sex, education, income, health insurance, and health status. All tests were 2-tailed, and $P < .05$ was considered statistically significant. We also investigated the extent to which sex, SES (education, income), and insurance status moderated the relationship between per-

ceived discrimination and provider trust and satisfaction by testing for interactions. All statistical analyses were performed using STATA 13.0 (StataCorp, College Station, TX).

RESULTS

The mean everyday discrimination score was 2.11 (SD \pm 1.02), and the mean lifetime discrimination score was 2.92 (SD \pm 2.12). Approximately, 30.7% participants reported high everyday discrimination, 23.7% reported high lifetime discrimination, and 32.0% reported high burden from lifetime discrimination [data not shown].

Table 1 demonstrates that among participants who reported high everyday discrimination, 44.3% did not trust their provider (vs 29.5% who did trust their provider; $P < .001$); and 39.6% were not satisfied with their provider (vs 30.0% who were satisfied with their provider; $P = .002$). Similar patterns were noted among those who reported high levels of lifetime discrimination and stress from lifetime discrimination. Thirty-five percent (35%) of participants who reported unfair treatment in getting medical care also did not trust their provider, while 28.4% were not satisfied with their provider.

Table 2 shows dimensions of discrimination by select demographic and social characteristics. Men were more likely to report high levels of everyday and lifetime discrimination (41.0% and 42.7%, respectively), and those with a college degree or more were more likely to report high lifetime discrimination and burden from lifetime discrimination.

Table 1. Sample characteristics of participants by trust and satisfaction with provider, JHS

Variables	Trust your provider			Satisfied with provider		
	Yes, n=4,536	No, n=172	pa	Yes, n=4,855	No, n=300	pa
Age, y, mean ± SD	55.9 ± 12.5	53.2 ± 12.9	.01	55.4 ± 12.7	49.8 ± 13.3	.000
Male, %	34.4	44.2	.01	35.6	47.0	.000
Education, %			.16			.01
<High school graduate	21.1	24.0		20.9	22.0	
High school - college 1-3 yrs	38.9	43.3		39.4	46.4	
College ≥ 4 yrs	40.0	32.8		39.8	31.5	
Income, %			.29			.01
<25K	37.9	43.5		38.1	46.7	
25K-49,999	27.3	27.6		27.5	27.1	
≥50K	34.8	29.0		34.4	26.2	
Health Insurance, %			.05			.000
Insured	88.2	83.1		87.4	76.5	
Uninsured	11.8	16.9		12.6	23.5	
Health status, %			.000			.001
Poor	31.7	44.4		30.8	39.9	
Good	68.3	55.6		69.2	60.1	
Everyday discrimination, %			.000			.002
Low	36.4	26.4		36.0	29.5	
Medium	34.1	29.3		34.0	30.9	
High	29.5	44.3		30.0	39.6	
Everyday discrimination, mean ± SD	2.0 ± .99	2.5 ± 1.3	.000	2.1 ± 1.0	2.3 ± 1.2	.001
Lifetime discrimination (%)			.000			.000
Low	45.9	31.3		46.1	36.1	
Medium	31.1	29.5		31.0	28.2	
High	23.0	39.2		22.9	35.7	
Lifetime discrimination, mean ± SD	2.9 ± 2.1	3.9 ± 2.3	.000	2.9 ± 2.1	3.5 ± 2.3	.000
Burden of lifetime discrimination, %			.91			.55
Low	34.4	35.0		34.3	36.9	
Medium	33.6	31.9		33.3	33.6	
High	32.1	33.1		32.4	29.5	
Burden of lifetime discrimination, mean ± SD	2.3 ± .8	2.3 ± .8	.77	2.3 ± .8	2.2 ± .7	.20
Stress from lifetime discrimination, %			.07			.02
Not stressful	25.0	25.2		25.5	23.4	
Moderately stressful	52.7	45.3		52.4	47.3	
Very stressful	22.3	29.6		22.1	29.3	
Unfairly treated getting medical care, %			.000			.000
Yes	13.0	35.1		12.8	28.4	
No	87.0	64.9		87.3	71.6	

JHS, Jackson Heart Study.

a. P represents a test of difference using chi-square or analysis of variance (ANOVA) for categorical and continuous variables, respectively.

Additionally, as participants reported greater levels of stress from lifetime discrimination, male sex declined, college graduates increased, income increased, having health insurance declined, and health status declined ($P<.05$).

Table 3 presents the prevalence ratios (PR, 95% CI) of trust and satisfaction with providers with multiple measures of perceived discrimination presented in tertiles and SD units. High (vs low) levels of everyday discrimination were associated with a

3% reduction in the prevalence of trust in providers (PR .97, 95% CI .96, .99) in the unadjusted model. This association remained after full adjustment (PR .98, 95% CI .96, .99). There was a significant inverse gradient of perceived discrimination and

Table 2. Selected covariates by categories of perceived discrimination, JHS

	Everyday discrimination				Lifetime discrimination				Burden of lifetime discrimination				Stress from lifetime discrimination			
	L	M	H	P ^a	L	M	H	P ^a	L	M	H	P ^a	NS	MS	VS	P ^a
n	1801	1722	1563		2272	1548	1185		1616	1562	1494		1201	2487	1062	
Age, mean	58.7	54.3	51.0	b	56.5	54.1	52.7	b	55.1	54.5	55.1	.74	55.7	53.6	55.8	.56
Male, %	34.4	35.3	41.0	b	33.3	36.8	42.7	b	36.1	37.6	37.0	.65	41.2	38.2	30.5	b
≥ College degree, %	33.7	44.7	40.0	b	30.1	43.4	52.0	b	37.3	40.2	40.4	.28	33.2	44.4	37.5	b
≥50k, %	29.6	38.4	35.0	b	27.6	36.6	43.6	b	33.3	35.2	33.6	.49	31.9	38.4	29.3	b
Private insurance, %	41.0	52.9	58.4	b	44.1	53.8	58.2	b	46.6	53.0	51.6	.01	48.6	55.6	43.9	b
Public insurance, %	29.5	18.5	16.6	b	28.1	17.5	15.4	b	23.9	20.8	20.4	.01	25.0	16.9	26.3	b
Health status-good, %	67.3	72.3	67.5	.002	68.0	68.3	72.4	.019	68.7	69.8	68.1	.57	72.1	71.9	60.1	b

a. P represents P for trend.

b. P < .001.

JHS, Jackson Heart Study; L, low; M, medium; H, high; NS, not stressful; MS, moderately stressful; VS, very stressful.

trust in providers in the fully-adjusted model (P for trend=.0064). The fully-adjusted continuous model showed that the prevalence of trust in providers decreased by 2% for each SD unit increase in everyday discrimination (PR .98, P<.001). Levels of everyday discrimination were not associated with satisfaction with providers in the fully-adjusted model. High (vs low) lifetime discrimination was associated with a 4% reduction in the prevalence of trust in providers (PR .96, 95% CI .94, .98) in the fully-adjusted model. There was a significant inverse trend in the level of lifetime discrimination and trust in providers in the fully-adjusted model (P for trend=.001). There also was a 4% reduction in the prevalence of being satisfied with providers for participants who reported a high (vs low) level of lifetime discrimination in the fully-adjusted model (PR .96, 95% CI .94, .98). The association of satisfaction with providers and lifetime discrimination had a significant inverse gradient in the fully-adjusted model (P for trend=.002). Continuous lifetime estimates confirmed these associations and were inversely associated

Table 3. Prevalence ratios (95% CIs) of trust in and satisfied with provider by categories of perceived discrimination, JHS

Variables	Trust in provider		Satisfied with provider	
	Model 1	Model 2	Model 1	Model 2
Everyday discrimination				
Low, referent	1	1	1	1
Medium	.99 (.98,1.01)	.99 (.98,1.01)	.99 (.98,1.01)	1.00 (.98,1.01)
High	.97 (.96,.99)	.98 (.96,.99)	.97 (.95,.99)	.99 (.97,1.01)
P trend	.0009	.0064	.0048	.3263
SD units	.98 ^b	.98 ^b	.99 ^b	.99
Lifetime discrimination				
Low, referent	1	1	1	1
Medium	.99 (.98,1.00)	.99 (.98,1.00)	.99 (.98,1.01)	.99 (.98,1.01)
High	.96 (.94,.98)	.96 (.95,.98)	.96 (.94,.98)	.96 (.94,.98)
P trend	.0001	.0000	.0001	.002
SD units	.99 ^a	.98 ^b	.98 ^b	.98 ^b
Burden of lifetime discrimination				
Low, referent	1	1	1	1
Medium	1.00 (.99,1.02)	1.00 (.99,1.02)	1.00 (.99,1.02)	1.00 (.99,1.02)
High	1.00 (.98,1.01)	1.00 (.98,1.02)	1.01 (.99,1.03)	1.01 (.99,1.03)
P trend	.90	.92	.54	.59
SD units	1.00	1.00	1.00	1.00
Stress from lifetime discrimination				
Not stressful, referent	1	1	1	1
Moderately stressful	1.01 (.99,1.02)	1.01 (.98,1.02)	1.00 (.98,1.02)	1.00 (.98,1.02)
Very stressful	.99 (.97,1.01)	.99 (.97,1.01)	.98 (.95,1.00)	.98 (.95,1.00)
P trend	.11	.15	.04	.03
SD units	1.00	1.00	.99	.99
Unfairly treated in getting medical care				
No (referent)	1	1	1	1
Yes	.93 (.91,.96)	.93 (.91,.96)	.92 (.90,.95)	.93 (.90,.95)

a. P<.05.

b. P<.0001.

Model 1: unadjusted.

Model 2: age + sex + income + education + health insurance + health status.

JHS, Jackson Heart Study; SD, standard deviation.

with satisfaction across the two models ($P < .05$). Burden of lifetime discrimination was not associated with trust or satisfaction with providers. Stress from discrimination was associated with an inverse prevalence of satisfaction in the fully-adjusted model (PR .98, 95% CI .95, 1.00). Participants who reported being unfairly treated while getting medical care had a 7% reduced prevalence of trust and satisfaction with providers in fully-adjust-

We found partial support for our hypothesis in that greater levels of everyday discrimination were significantly associated with lack of trust in providers.

ed models (PR .93, 95% CI .91, .96; PR .93, 95% CI .90, .95, respectively).

We also investigated the extent to which sex, SES, and insurance status moderated the relationship between perceived discrimination and provider trust and satisfaction. There were two significant P values for interaction in the fully-adjusted models: having between a high school diploma and some college and having a college degree or more moderated the relationship between perceived everyday discrimination and trust in providers (high school graduate-some college (P values for interaction=.008); college or more (P values for interaction=.042) (data not shown).

DISCUSSION

This study examined the associations of multiple dimensions of perceived discrimination with trust and satisfaction with health care providers in a large sample of AAs. We found partial support for our hypothesis in that greater levels of everyday discrimination were significantly associated with lack of trust in providers. We also found that higher levels of lifetime discrimination were associated with lack of trust in and satisfaction with providers after full adjustment. Greater levels of stress derived from lifetime discrimination were associated with lack of satisfaction with providers; and there was a significant inverse association of participants who reported being unfairly treated while getting medical care with trust in and satisfaction with their provider. Burden of discrimination was not associated with any of the outcomes. Additionally, we found that the association of everyday discrimination with trust was modified by level of education. JHS is a highly educated cohort, which could suggest more exposure to various forms of discrimination for highly educated and upwardly mobile AAs in settings such as work, majority-White neighborhoods, or public places.

Our findings are consistent with previous smaller studies that have found a direct relationship between perceived racism and mistrust and dissatisfaction.^{10,23-24} Similarly, we found that generalized discrimination was associated with trust and satisfaction; however, unlike the previous studies, we did not measure the reason for discrimination (eg, race, sex, etc.).

Our findings suggest that experiences of discrimination affect participants' perceptions of their health care providers. AAs report more discriminatory experiences and distrust than other racial ethnic groups.^{4,9,25-26} The majority of AAs attribute experiences of discrimination to race/ethnicity, most likely due to the historical treatment of AAs by Caucasians.^{24,27} AAs may generalize feelings of discrimination to Caucasians, which could influence attitudes toward providers. According to the Association of American Medical Colleges, approximately 75% of all medical school graduates practicing medicine in the United States were Caucasian.²⁸ Due to the high percentage of Caucasian providers, AAs may anticipate that they will experience racism when interacting with providers. These perceptions are reinforced when providers use dominant communication and display an attitude that is not collaborative, warm, friendly, and respectful when interacting with AA patients.²⁹

In addition to preconceptions about Caucasian providers, AAs also rely on previous experiences as reasons for their mistrust of providers. Because AAs have higher rates of public insurance and not being insured, they may expect financial discrimination in the health care system. Some health care institutions and providers refuse to give care based on health insurance status and type of insurance.³⁰ Also, Jacobs et al²⁶ examined AA perceptions of providers and found that many AAs believed providers were only after profit and were interested in experimentation during routine care visits. Some AAs additionally mentioned hearing about or witness-

ing negative experiences during office visits. These perceptions influence patient-provider interactions, continuity with health care providers, and adherence to recommended therapy.³¹

Providers may also contribute to AA mistrust and dissatisfaction. Unintentional bias may cause the provider to believe that the patient lacks interest or concern with his/her health or that the patient is unintelligent or not capable of following instructions. For example, Van Ryn & Burke³¹ examined physician perception of AAs and their findings showed physician perception to be influenced by race, which influenced whether the provider thought the patient was intelligent, participated in high-risk behaviors, and whether the provider felt affiliation toward the patient. Although research has found associations between socio-demographic characteristics and health outcomes,³²⁻³⁴ the stereotypical perceptions of providers may be harmful to the patient-provider relationship. Other mechanisms by which discrimination may impact trust and satisfaction with providers include individual and neighborhood-level social factors. For instance, high-status AAs may be exposed to discriminatory acts from the majority population in the world of work and society in general, and this accumulation of everyday and lifetime discrimination may shape their perceptions of their health care providers.

Major strengths of this study include the utilization of a large prospective study of AAs to examine the intra-racial differences of perceived discrimination in Jackson, Mississippi, a state that is significant for historical and contemporary patterns of

health disparities. The use of multiple measures of discrimination is also a strength. In light of these strengths, a notable limitation is the cross-sectional design, which prevents causal inference and directionality. The study was conducted in a single site in the southeastern United States, possibly limiting its generalizability to other AA populations. Another limitation is the self-reported measures utilized in this study, as we relied on participants' report of their own experience of discrimination. However, the scales used had good internal validity and reliability in other studies.^{19,35}

CONCLUSION

We observed a relatively strong association between perceived discrimination (everyday, lifetime, stress from discrimination, and unfair treatment in medical care) and mistrust and dissatisfaction with providers within the JHS. Due to recent policies that increase health care access, providers should be made aware of AA perceptions of discrimination in the health care system, which likely affect health disparities. In order to further confirm our findings, longitudinal analysis including time-varying measures of discrimination changes in levels of trust and satisfaction overtime should be explored in depth among a nationally representative sample of AAs.

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CONFLICT OF INTEREST

No conflicts of interest to report.

AUTHOR CONTRIBUTIONS

Research concept and design: Glover, Sims, Winters; Acquisition of data: Sims; Data analysis and interpretation: Glover, Sims; Manuscript draft: Glover, Sims, Winters; Statistical expertise: Glover, Sims; Supervision: Sims, Winters

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