

1-1-2009

Development and psychometric testing of a multi-dimensional instrument of perceived discrimination among African Americans in the Jackson Heart Study

Mary Lou Gutierrez
marylou.gutierrez@mail.waldenu.edu

Sharon Wyatt
University of Mississippi Medical Center

Mary Lou Gutierrez
Walden University

Herman Taylor
University of Mississippi Medical Center

Follow this and additional works at: <https://scholarworks.waldenu.edu/facpubs>

Recommended Citation

Gutierrez, Mary Lou; Wyatt, Sharon; Gutierrez, Mary Lou; and Taylor, Herman, "Development and psychometric testing of a multi-dimensional instrument of perceived discrimination among African Americans in the Jackson Heart Study" (2009). *Walden Faculty and Staff Publications*. 723.
<https://scholarworks.waldenu.edu/facpubs/723>

This Article is brought to you for free and open access by ScholarWorks. It has been accepted for inclusion in Walden Faculty and Staff Publications by an authorized administrator of ScholarWorks. For more information, please contact ScholarWorks@waldenu.edu.

2009

Development and psychometric testing of a multi-dimensional instrument of perceived discrimination among African Americans in the Jackson Heart Study

Mary Lou Gutierrez

Sharon Wyatt
University of Mississippi Medical Center

Mary Lou Gutierrez
Walden University

Herman Taylor
University of Mississippi Medical Center

Follow this and additional works at: https://scholarworks.waldenu.edu/shs_pubs

Recommended Citation

Gutierrez, Mary Lou; Wyatt, Sharon; Gutierrez, Mary Lou; and Taylor, Herman, "Development and psychometric testing of a multi-dimensional instrument of perceived discrimination among African Americans in the Jackson Heart Study" (2009). *School of Health Sciences Publications*. 179.
https://scholarworks.waldenu.edu/shs_pubs/179

This Article is brought to you for free and open access by the College of Health Sciences at ScholarWorks. It has been accepted for inclusion in School of Health Sciences Publications by an authorized administrator of ScholarWorks. For more information, please contact ScholarWorks@waldenu.edu.



Published in final edited form as:
Ethn Dis. 2009 ; 19(1): 56–64.

DEVELOPMENT AND PSYCHOMETRIC TESTING OF A MULTIDIMENSIONAL INSTRUMENT OF PERCEIVED DISCRIMINATION AMONG AFRICAN AMERICANS IN THE JACKSON HEART STUDY

Mario Sims, PhD, Sharon B. Wyatt, PhD, Mary Lou Gutierrez, PhD, Herman A. Taylor, MD, MPH, and David R. Williams, PhD, MPH

From the School of Medicine (MS, SBW, HAT), School of Nursing (SBW), the Examination Center, Jackson Heart Study (MS, SBW, HAT), University of Mississippi Medical Center; Walden University (MLG), Jackson, Mississippi; Harvard School of Public Health, Boston, Massachusetts (DRW).

Abstract

Objective—Assessing the discrimination-health disparities hypothesis requires psychometrically sound, multidimensional measures of discrimination. Among the available discrimination measures, few are multidimensional and none have adequate psychometric testing in a large, African American sample. We report the development and psychometric testing of the multidimensional Jackson Heart Study Discrimination (JHSDIS) Instrument.

Methods—A multidimensional measure assessing the occurrence, frequency, attribution, and coping responses to perceived everyday and lifetime discrimination; lifetime burden of discrimination; and effect of skin color was developed and tested in the 5302-member cohort of the Jackson Heart Study. Internal consistency was calculated by using Cronbach α coefficient. Confirmatory factor analysis established the dimensions, and intercorrelation coefficients assessed the discriminant validity of the instrument.

Setting—Tri-county area of the Jackson, MS metropolitan statistical area.

Results—The JHSDIS was psychometrically sound (overall α = .78, .84 and .77, respectively, for the everyday and lifetime subscales). Confirmatory factor analysis yielded 11 factors, which confirmed the *a priori* dimensions represented.

Conclusions—The JHSDIS combined three scales into a single multidimensional instrument with good psychometric properties in a large sample of African Americans. This analysis lays the foundation for using this instrument in research that will examine the association between perceived discrimination and CVD among African Americans.

Reprints will not be available from the authors. Address correspondence to: Mario Sims, PhD; Jackson Heart Study; 350 West Woodrow Wilson Dr, Ste 701; Jackson, MS 39213; 601-979-8771; 601-979-8701 (fax); msims2@medicine.umsmed.edu.

Author Contributions

Design concept of study: Sims, Wyatt, Gutierrez, Williams

Acquisition of data: Sims, Wyatt, Gutierrez, Taylor

Data analysis and interpretation: Sims, Wyatt, Taylor, Williams

Manuscript draft: Sims, Wyatt, Gutierrez

Statistical expertise: Sims, Gutierrez

Acquisition of funding: Sims, Wyatt, Gutierrez, Taylor

Administrative, technical, or material assistance: Sims, Wyatt, Williams

Supervision: Sims, Wyatt, Williams

Keywords

Discrimination; Racism; Jackson Heart Study; African American; Cardiovascular Disease

INTRODUCTION

Discrimination or unfair treatment contributes to physical and mental health disparities among racial and ethnic minorities.^{1–3} Recent studies have provided additional evidence of the role of discrimination in cardiovascular disease,⁴ but measurement issues continue to plague the field. Several measures of discrimination have been developed^{2,5} and tested^{6–8} since the early 1990s, yet none have captured the multiple dimensions of the construct, and no gold standard measure of discrimination exists. Studies to date have been limited by small sample size and, until recently, little assessment of reliability and validity in specific populations was available.⁶ Wyatt et al.⁹ reported the need for a multidimensional discrimination scale that could “... tease out the complex additive and interactive relationships that are likely to account for the relationship of various dimensions of racism and cardiovascular disease in African Americans.” The Jackson Heart Study (JHS), a single-site longitudinal, population-based, cohort study of 5302 persons initiated in the fall of 2000 to prospectively investigate the determinants of cardiovascular disease among African Americans in the Jackson, Mississippi, metropolitan statistical area, provided a unique opportunity to address this gap.¹⁰ This article details the development of a multidimensional discrimination instrument and reports on its psychometric properties among African Americans.

METHODS

Development of the JHSDIS

The JHS Discrimination (JHSDIS) Instrument was developed through a multistage process based on review of existing discrimination measures, findings from focus groups with JHS-eligible participants, and field testing of preliminary versions in a population comparable to the JHS sampling frame. This process identified two major categories of discrimination (everyday and major life events), with secondary measures of frequency, attribution, and coping response; lifetime burden; and effect of skin color (treatment by Whites and Blacks). We created the JHSDIS to assess daily discrimination, effect of skin color, and lifetime prevalence of discrimination; the instrument was derived from literature review and focus group findings, Williams’ Everyday Discrimination instrument,⁸ two items from the MacArthur Foundation Midlife Development in the United States survey¹¹ to assess lifetime burden, two measures of the effects of skin color on treatment by Blacks and Whites from the Detroit Area Study,⁸ and 2 newly developed items that assess comparable frequency of events from early life to present time and overall contribution to life stress.

Assessment of major life events was differentially reported in the literature using either 1) nine domains defined by Krieger¹² and Krieger and Sidney¹³ (school, getting a job, work, housing, resources or money, medical care, street/public place, getting services, other), or 2) 12 specific experiences (discouraged by teacher, denied scholarship, not been hired, denied promotion, been fired, prevented from buying home, prevented from staying in neighborhood, hassled by police, denied bank loan, provided inferior medical care, received inferior service, other) suggested by Williams’ Major Life Events.⁸ In addition, measures of frequency (lifetime and most recent), attribution (age, sex, race, ethnicity, religion, height or weight, other aspect of appearance, physical disability, sexual orientation, other), and coping strategies (speak up, accept, ignore, try to change, keep to self, work harder, pray, avoid, violence, forget, blame self, other) were differentially reported for either the domain/experience or for the most recent occurrence.

Two subversions of two instruments were field-tested by 100 persons who met the inclusion criteria for the JHS but lived outside the sampling area (25 persons completed each version) to compare results individually for each domain (versions A-2 and B-2), or globally for all domains or experiences (versions A-1 or B-1). Temporal components for everyday and lifetime discrimination (number of times, number of years ago, and number of months ago) were modified from the Perceived Racism Scale,¹⁴ adding a third category (number of months). Elements of attribution were adapted from Krieger¹³ and Williams et al,⁸ and coping strategies were adapted from Krieger¹³ and McNeilly et al.¹⁴ For each reported strategy, information on frequency (a lot, some, a little) was added by the JHS. Williams et al⁸ reported the reliability coefficient for experiences of everyday discrimination ($\alpha=.88$). Krieger¹³ reported the reliability coefficient for the nine-item lifetime discrimination for Whites (.77), and Blacks and Latinos (.81). McNeilly et al¹⁴ reported reliability coefficients for lifetime discrimination ($\alpha=.96$) and coping with lifetime discrimination ($\alpha=.92$).

Trained interviewers recorded item responses and information on administration time and ease. Interviewers were debriefed regarding their experiences, and response frequencies were compared across groups. On the basis of this information (data not shown), the final 20-item multidimensional JHSDIS required seven minutes to administer and included everyday experiences of unfair treatment (occurrence, frequency, global attribution or main reason for everyday experiences of unfair treatment, and global use of coping strategies), nine major life event discrimination domains^{12,13} (occurrence, overall lifetime frequency and most recent experience, global attribution or main reason for lifetime experiences of unfair treatment, and global use and frequency of coping strategies), burden (lifetime frequency, and extent to which one's life was made stressful, hard, and less productive due to lifetime discrimination), and perceived influence of skin color on experiences of unfair treatment by African Americans and Whites. These four major constructs and their conceptual indicators defined an 11-factor *a priori* structure of the JHSDIS (Appendix). An annual query regarding each participant's global experience and frequency of unfair treatment over the preceding year was included to allow determination of overall discrimination load. The JHSDIS is available at www.jsu.edu/~jhs/jhsinfo/Forms1_QxQ_DataDictionary/DISA.pdf.

Psychometric testing of the JHSDIS

The JHSDIS instrument was administered by certified African American interviewers during the baseline clinical examination of the JHS conducted from 2000 through 2004. The design and study methods for the JHS have been reported elsewhere.¹⁰ Percentages were computed for JHSDIS items scores by age and sex. Differences in percentages were assessed for age and sex subgroups by using the χ^2 test. The internal consistency of the JHSDIS was determined by using Cronbach α coefficients with a score ranging from 0 to 1.0 indicating the extent to which items in an index measured the same construct. Confirmatory factor analysis (CFA) was computed to validate the structure of *a priori* dimensions of the JHSDIS; structural equations models tested for a confirmatory factor model of the full instrument. We used maximum likelihood estimation procedures, which enabled us to determine the goodness of fit of the covariance structure analysis. The fit of the CFA was evaluated by several goodness-of-fit indices: goodness-of-fit index, root mean square error of approximation, comparative fit index, and non-normed index. Values near .9 on the goodness-of-fit index, comparative fit index, and non-normed index indicate an acceptable fit. Supplementary exploratory principal components analysis was also computed to detect low and inadequate factor loadings that would otherwise be deleted or interpreted with caution (data not shown). Finally, discriminant validity, a measure that demonstrates the independence (or noncorrelation) between two scales, was assessed by calculating correlation coefficients between the subscales. All analyses were conducted by using SAS version 9.1 (SAS Institute Inc, Cary, North Carolina).

RESULTS

Detailed characteristics of the JHS cohort are described elsewhere.¹⁰ Nearly all ($n=5200$) of the JHS participants completed the JHSDIS. Everyday discrimination was common among men and women in the JHS and among younger (age 21–45 years) participants (Table 1). Men were more likely than women to report experiences of being treated with less courtesy; thought of as dishonest; being feared, threatened, or harassed; or being called names. Nearly half attributed this treatment to their race (data not shown).

Perceptions of lifetime discrimination were most frequently reported at work or getting a job and were commonly attributed to race. Passive or internal coping strategies were employed for lifetime discrimination, while most participants used active or external coping strategies with everyday discrimination (data not shown). A high burden of lifetime discrimination, described as “making life hard,” was reported, particularly among men and participants aged ≥ 45 years. Poorer treatment from Whites because of skin color was reported by more men than women.

The α coefficients were high for the full scale and for the two subscales for the occurrence and coping with everyday discrimination and the separate occurrence and frequency of everyday discrimination (Table 2). Within the lifetime discrimination subscale, moderately high coefficients were calculated for the total, ever experienced, and coping responses to lifetime discrimination subscales. Slightly lower, but acceptable, coefficients were calculated for the burden of discrimination and the effect of skin color subscales.

The structural equation models to validate the JHSDIS structure yielded factor loadings constituting 11 latent constructs or factors (Table 3) corresponding to daily frequency, passive coping, stressful life, public place discrimination, active coping, access discrimination, external coping, daily coping, skin-color attribution, other discrimination, and lifetime frequency. Results from the exploratory principal components analysis also yielded 11 factors that were consistent with factors computed by using CFA (data not shown).

The CFA provided correlated error variances of all 37 items from the instrument and produced an acceptable fit of the data, represented by 11 separate factors (Table 3). Factor loadings ranged from .184 to 1.00 and were highly significant. With the exception of “other coping behaviors,” t values for all factor loadings were highly significant, which suggests that each survey item properly measured the underlying factor.

Overall, items loaded on factors as expected based on the *a priori* structure of the JHSDIS. Items representing everyday discrimination were expected to load together on factor 1, in keeping with prior research. Factor 2 signified passive coping with lifetime discrimination. Factor 3 represented the burden of lifetime discrimination. As expected, items representing public place discrimination loaded on factor 4. Factor 5, active coping responses to lifetime discrimination, was consistent with McNeilly et al.’s¹⁴ analysis of these items. Factor 6 depicted the discrimination associated with accessing societal services (housing, resources, and medical care). The clustering of “blame yourself” with “get violent” was unanticipated for factor 7. We expected “get violent” to cluster into factor 5 or stand alone, while we expected “blame yourself” to cluster with passive coping responses. Factors 8 and 9 represented coping responses to everyday discrimination and skin-color attribution, respectively. Factor 11 captured the frequency of lifetime discrimination, which loaded as a single factor apart from the other items in the burden subscale.

The uncorrelated coefficients between factors in the JHSDIS demonstrated a high degree of discriminant validity. Several coefficients were significant, and ranged from $-.43$ to $.32$ ($P < .01$), further validating the independence between each factor, indicating that they represented independent dimensions.

DISCUSSION

The JHSDIS provides the first psychometrically sound multidimensional measure of perceived discrimination for use in health studies. The instrument uniquely combines domains of everyday and lifetime discrimination with measures of frequency, attribution, coping response, burden, and skin-color determinants of unfair treatment. Its development, use, and testing within the JHS, the largest cohort study of risk factors and causes of cardiovascular disease in African Americans, provides the basis for continued use in this and other studies.

The JHS is restricted to a single site in the southeastern United States, which limits its generalizability outside of this region. To produce unbiased estimates on the effects of discrimination on health among African Americans in the United States (the target population), cross-validation testing in other regions is needed for the JHSDIS.

Overall reliability for the JHSDIS was high, but the two major subscales (everyday and lifetime) differed somewhat from prior analyses. The JHSDIS everyday discrimination reliability coefficient was consistent with previous reports.^{8,15} The low α coefficients for lifetime discrimination were anticipated but warrant comment. Domains were not expected to be highly correlated with each other, which would result in high coefficients.³ In Krieger's analysis,¹⁵ the α coefficient for lifetime discrimination was .81—not much greater than that reported in the present study—and was consistent with previous research using this subscale.

The internal consistency for the JHSDIS coping responses was lower than that reported by McNeilly et al¹⁴ (.66 and .94, respectively) and likely resulted from the Perceived Racism Scale's use of the global coping response items for the nine lifetime domains, while the JHSDIS modification incorporated individual item coping responses. In addition, differences in internal consistency may have resulted from sample selection (Perceived Racism Scale: southern African American women; JHSDIS: both sexes).

The α coefficient for skin-color attribution was low, which indicates that these items were uncorrelated and measured disparate constructs—treatment from Whites versus treatment from African Americans—which may also explain their moderate loading in the CFA. Because the JHSDIS did not include interviewer or respondent rating of skin color, no information was available to test whether differential treatment was perceived from Whites of other African Americans by persons with darker skin color.

The CFA results were generally consistent with previous studies. Loadings for factors 2, 5, and 7 (coping responses to lifetime events) approximated those reported by Vines et al,⁷ and two of the four items in factor 5 (“try to change it” and “work harder to prove them wrong”) loaded together in McNeilly et al's¹⁴ work. In keeping with Vines et al's⁷ characterization, “pray” was expected to load on a separate “internal active behavior” factor. However, in a cohort where 82% said they pray as a response to lifetime discrimination, this could be viewed as an active response to unfair treatment and perhaps not a surprising finding.

Coupled with the comprehensive battery of sociocultural, physiological, and genetic data included in the baseline and future JHS examinations, the JHSDIS provides a unique opportunity to examine the complex interplay of factors that may contribute directly or indirectly to cardiovascular disease in African Americans. Future examinations will extend the JHSDIS to include measures of institutional and internalized discrimination, providing a composite assessment of all levels of discrimination¹⁶ that highlights the strengths of a multidimensional instrument and allows longitudinal outcome assessment.⁹ The utility of the JHSDIS could also be enhanced if it were tested in other racial/ethnic subgroups in multiple locations as well as in studies that examine health outcomes beyond cardiovascular disease.

ACKNOWLEDGMENTS

The authors thank the participants in the JHS. This research was supported by National Institutes of Health contracts N01-HC-95170, N01-HC-95171, and N01-HC-95172 provided by the National Heart, Lung, and Blood Institute and the National Center for Minority Health and Health Disparities. This research was also supported by a National Heart, Lung, and Blood Institute Career Development Award to the first author, 1 K01 HL084682-01.

REFERENCES

1. Krieger, N. Discrimination and health. In: Berkman, LF.; Kawachi, I., editors. *Social Epidemiology*. Vol. 1st edition.. New York (NY): Oxford University Press; 2000. p. 36-75.
2. Paradies Y. A systematic review of empirical research on self-reported racism and health. *Int J Epidemiol* 2006;35(4):888–901. [PubMed: 16585055]
3. Williams DR, Neighbors HW, Jackson JS. Racial/ethnic discrimination and health: Findings from community studies. *Am J Pub Health* 2003;93(2):200–208. [PubMed: 12554570]
4. Lewis TT, Everson-Rose SA, Powell LH, et al. Chronic exposure to everyday discrimination and coronary artery calcification in African American women: the SWAN Heart Study. *Psychosom Med* 2006;63(3):362–368. [PubMed: 16738065]
5. Utsey SO. Assessing the stressful effects of racism: a review of instrumentation. *J Black Psychol* 1998;24(3):269–288.
6. Krieger N, Smith K, Nairishadham D, Hartman C, Barbeau EM. Experiences of discrimination: validity and reliability of a self-report measure for population health research on racism and health. *Soc Sci Med* 2005;61(7):1576–1596. [PubMed: 16005789]
7. Vines AI, McNeilly MD, Stevens J, Hertz-Picciotto I, Baird M, Baird D. Development and reliability of a telephone-administered Perceived Racism Scale (TPRS): a tool for epidemiological use. *Ethn Dis* 2001;11(2):251–262. [PubMed: 11456000]
8. Williams DR, Yu Y, Jackson JS, Anderson NB. Racial differences in physical and mental health: socioeconomic status, stress and discrimination. *J Health Psychol* 1997;2(3):335–351.
9. Wyatt SB, Williams DR, Calvin R, Henderson FC, Walker ER, Winters KP. Racism and cardiovascular disease in African Americans. *Am J Med Sci* 2003;325(6):315–331. [PubMed: 12811228]
10. Taylor HA, Wilson JG, Jones DW, et al. Toward resolution of cardiovascular health disparities in African Americans: design and methods of the Jackson Heart Study. *Ethn Dis* 2005;15(4 Suppl 6) S6-4–17.
11. Kessler RC, Mickelson KD, Shanyang Z. Patterns and correlates of self-help group membership in the United States. *Social Policy* 1997;27(3):27–46.
12. Krieger N. Racial and gender discrimination: risk factors for high blood pressure? *Soc Sci Med* 1990;30(12):1273–1281. [PubMed: 2367873]
13. Krieger N, Sidney S. Racial discrimination and blood pressure: the CARDIA study of young Black and White adults. *Am J Pub Health* 1996;86(10):1370–1378. [PubMed: 8876504]
14. McNeilly MD, Anderson NB, Armstead CA, et al. The Perceived Racism Scale: a multidimensional assessment of the experience of White racism among African Americans. *Ethn Dis* 1996;6(1–2):154–166. [PubMed: 8882844]
15. Kessler RC, Mickelson KD, Williams DR. The prevalence, distribution, and mental health correlates of perceived discrimination in the United States. *J Health Soc Behav* 1999;40(3):208–230. [PubMed: 10513145]
16. Jones CP. Levels of racism: a theoretic framework and a gardener's tale. *Am J Pub Health* 2000;90(8):1212–1215. [PubMed: 10936998]

Appendix

Appendix

Components of the Jackson Heart Study Discrimination (JHSDIS) Instrument

Dimension/Construct	Subscales	Items	Responses (for each item)		
A. Everyday Experiences (Williams et al, 1997; Krieger, 1990; McNeilly et al, 1996)	1. Occurrence and frequency	Q1. Occurrence and frequency of everyday discrimination	1. Never		
		Q1a. You are treated with less courtesy than other people	2. Less than a few times a year		
		Q1b. You are treated with less respect than other people	3. A few times a year		
		Q1c. You receive poorer service than others at restaurants	4. A few times a month		
		Q1d. People act as if they think you are not smart	5. At least once a week		
		Q1e. People act as if they are afraid of you	6. Almost everyday		
		Q1f. People act as if they think you are dishonest	7. Several times a day		
		Q1g. People act as if they think you are not as good as they are			
		Q1h. You are called names or insulted			
		Q1i. You are threatened or harassed			
	2. Attribution	Q2. Main reason for all experiences of everyday discrimination	1. Age		
			2. Sex		
			3. Race		
			4. Height or weight		
			5. Other		
		3. Coping/responses	Q3. Behavioral coping responses to everyday discrimination		1. Speak up
					2. Accept it
					3. Ignore it
					4. Try to change it
					5. Keep it to yourself
	6. Work harder to prove them wrong				
	7. Pray				
	8. Avoid it				
	9. Get violent				
	10. Forget it				
	11. Blame yourself				
	12. Other				
B. Major Life Events (Krieger, 1990; Krieger and Sydney, 1996)	1. Occurrence	Q4–Q12. Ever experience major life event discrimination	1. Yes		
		Q4a. At school	2. No		
		Q5a. Getting a job			
		Q6a. At work			
		Q7a. Getting housing			
		Q8a. Getting resources or money			
		Q9a. Getting medical care			

Dimension/Construct	Subscales	Items	Responses (for each item)
C. Discrimination Burden	2. Frequency	Q10a. On the street or in a public place	
		Q11a. Getting services	
	3. Attribution	Q12a. Other ways	
		Q4–Q12. If experienced major life event, how often and how recent	Q4b–12c. No. of times Q4c–12d. No. of years ago Q4d–12e. No. of months ago
4. Coping Responses	Q13. Main reason for major life event unfair discrimination		1. Age 2. Sex 3. Race 4. Height or weight 5. Other
			1. Yes
			2. No
1. Comparative frequency	Q14. Behavioral coping responses to major life event discrimination (Krieger, 1990; McNeilly et al, 1996)	Q14a. Speak up	
		Q14b. Accept it	
		Q14c. Ignore it	
		Q14d. Try to change it	
		Q14e. Keep it to yourself	
		Q14f. Work harder to prove them wrong	
2. Stressful life	Q14g. Pray	Q14h. Avoid it	
		Q14i. Get violent	
		Q14j. Forget it	
		Q14k. Blame yourself	
		Q14l. Other	
		Q 14. Extent of use of behavioral coping response	1. A little 2. Some 3. A lot
2. Stressful life	Q15. Frequency of discrimination when younger compared with now		1. About the same 2. Less frequent 3. More frequent
			1. Not stressful 2. Moderately stressful 3. Very stressful
			1. Not at all 2. A little
3. Productive life	Q16. Extent to which lifetime discrimination was stressful		
		Q17. Extent to which discrimination interfered with having full and productive life	

Dimension/Construct	Subscales	Items	Responses (for each item)
			3. Some 4. A lot
	4. Life made hard	Q18. Extent to which life has been hard because of discrimination	1. Not at all 2. A little 3. Some 4. A lot
D. Effect of Skin Color	1. Treatment by Whites	Q19. White treatment because of skin color	1. A lot better 2. Somewhat better 3. No different 4. Somewhat worse 5. A lot worse
	2. Treatment by Blacks	Q20. Black treatment because of skin color	1. A lot better 2. Somewhat better 3. No different 4. Somewhat worse 5. A lot worse

Table 1
Dimensions of everyday, lifetime, and burden of discrimination among African Americans by age and sex in the Jackson Heart Study, 2000–2004

	Age				Sex		χ^2 P value
	Total, %	21–34 years (n=244), %	35–44 years (n=991), %	45–64 years (n=2688), %	≥65 years (n=1277), %	Female (n=3329), %	
a. Occurrence of Everyday Discrimination							
Treated with less courtesy	64.8	70.9	73.8	68.2	49.6	66.0	62.8 .02
Treated with less respect	61.0	69.1	72.6	64.5	43.2	61.2	60.7 .72
Poor service at restaurant	56.5	67.9	72.4	61.1	32.4	56.7	56.2 .76
People think you are not smart	59.1	70.0	68.5	61.2	45.3	60.3	57.1 .02
People are afraid of you	39.5	58.0	52.2	42.1	20.8	35.4	46.9 <.001
People think you are dishonest	33.6	46.9	45.8	34.8	19.2	29.8	40.4 <.001
People think you are not as good	59.6	68.7	69.2	62.3	44.4	58.8	60.9 .13
Called names or are insulted	34.7	44.9	44.4	35.8	22.6	33.0	37.6 .001
Threatened or harassed	25.3	26.8	31.1	28.1	14.5	23.6	28.2 <.001
b. Occurrence of Lifetime (Major Life) Discrimination							
At School (n = 2250)	43.3	37.0	49.2	45.9	34.6	43.1	43.8 .65
Getting a job (n = 2310)	44.5	30.5	51.6	48.7	32.7	41.6	49.6 <.001
At Work (n = 3336)	64.3	61.3	69.5	67.5	54.1	64.1	64.6 .28
Get Housing (n = 673)	13.0	8.2	15.5	14.0	9.7	11.3	16.0 <.001
Getting Resources (n = 1950)	37.6	24.4	42.0	42.0	27.5	33.9	44.3 <.001
Getting Medical Care (n = 715)	13.8	4.9	13.1	14.6	14.1	15.6	10.6 <.001
Public Places (n = 1826)	35.2	38.7	39.3	38.3	25.0	30.7	43.4 <.001
Getting Services (n = 1927)	37.2	32.9	42.4	38.9	30.3	36.5	38.4 .17
Other Ways (n = 279)	5.4	4.1	6.2	5.5	4.9	5.2	5.9 .23

	Total, %	Age				Sex		χ^2 P value
		21–34 years (n=244), %	35–44 years (n=991), %	45–64 years (n=2688), %	≥65 years (n=1277), %	Female (n=3329), %	Male (n=1871), %	
c. Burden and Skin-Color Determinants of Lifetime (Major Life) Discrimination								
Discrimination was more frequent (n=520)	10.74	21.8	14.6	9.0	9.2	11.8	8.9	.004
Discrimination made life very stressful (n=1098)	22.7	14.1	19.4	24.1	23.7	25.0	18.6	<.001
Discrimination interfered w/having full life some to a lot (n = 1793)	35.7	20.1	32.3	37.6	37.5	33.3	40.1	<.001
Discrimination made life hard some to a lot (n = 1996)	39.8	23.5	36.4	42.2	40.5	38.2	42.7	<.001
Because of skin color, treatment by Whites was worse (n = 674)	13.1	15.4	15.1	13.8	9.7	11.3	16.3	<.001
Because of skin color, treatment by Blacks was worse (n = 733)	14.2	14.5	14.4	14.3	14.0	15.1	12.7	.02

Source: Jackson Heart Study, baseline data 2000–2004.

Table 2
Internal reliability for Jackson Heart Study Discrimination (JHSDIS) Instrument ($N=5200$)*

	Subscale	α Coefficient	Item-total Correlation
1.	Total JHSDIS instrument (Q1–Q20)	.78	–.005–.93
2.	Total everyday discrimination (Q1–Q3)	.84	.04–.68
	Occurrence of everyday discrimination (Q1a–1i)	.88	.50–.72
3.	Total major life (lifetime) discrimination (Q4–Q14)	.77	–.07–.94
	Ever experience discrimination in lifetime (Q4–Q12)	.78	–.12–.94
	Behavioral coping with lifetime discrimination (Q14)	.66	–.001–.42
4.	Burden of discrimination (Q15–Q18)	.63	.07–.60
5.	Effect of skin color (Q19–Q20)	.27	.15–.16

Source: Jackson Heart Study, baseline data 2000–2004.

Table 3

Confirmatory factor analysis of the Jackson Heart Study Discrimination (JHSDIS) Instrument, Jackson Heart Study, 2000–2004 ($N=5200$)*

	Factor (Construct)	Survey items	Loadings
1.	Daily Frequency (Everyday Discrimination)	Treated with less courtesy than other people	.748
		Treated with less respect than other people	.792
		Receive poor service at restaurants	.619
		People act as if they think you are not smart	.761
		People act as if they are afraid of you	.562
		People act as if they think you are dishonest	.633
		People act as if you are not as good	.769
		You are called names or insulted	.548
2.	Passive Coping (Major Life)	You are threatened or harassed	.514
		Accept it	.539
		Ignore it	.728
		Keep it to yourself	.640
		Avoid it	.441
3.	Stressful Life (Burden)	Forget it	.330
		How stressful major life discrimination made one's life?	.446
		Discrimination has interfered with having a full and productive life?	.798
4.	Public Place Discrimination (Major Life)	How much harder has life been because of discrimination?	.824
		Unfairly treated at school or during training	.538
		Unfairly treated in getting a job	.556
		Unfairly treated at work	.545
5.	Active Coping (Major Life)	Unfairly treated in the street or in a public place	.532
		Unfairly treated in getting services	.525
		Speak up	.664
		Try to change	.738
		Work harder to prove them wrong	.419
6.	Access Discrimination (Major Life)	Pray	.330
		Unfairly treated in getting housing or finding a place to live	.434
		Unfairly treated in getting resources or money	.550
7.	External Coping (Major Life)	Unfairly treated in getting medical care	.376
		Get violent	.200
8.	Daily Coping (Everyday Discrimination)	Blame yourself	.498
		Coping behavior with everyday discrimination	.999
9.	Skin Color Attribution (Effect of Skin Color)	Because of shade of skin color, how do White people treat you	.444
		Because of shade of skin color, how do Black people treat you	.357
10.	Other Discrimination (Major Life)	Unfairly treated in other ways	.398
		Other coping behaviors	.184

	Factor (Construct)	Survey items	Loadings
11.	Lifetime Frequency (Burden)	Frequency of major life discrimination	1.000

Source: Jackson Heart Study, baseline data 2000–2004.

* $\chi^2=4903.76$ ($P<.001$), goodness-of-fit index = .938, root mean square error of approximation = .042, comparative fit index = .900, non-normed index = .860.

Components of the Jackson Heart Study Discrimination (JHSDIS) Instrument

Dimension/Construct	Subscales	Items	Responses (for each item)	
A. Everyday Experiences (Williams et al, 1997; Krieger, 1990; McNeilly et al, 1996)	1. Occurrence and frequency	Q1. Occurrence and frequency of everyday discrimination	1. Never	
		Q1a. You are treated with less courtesy than other people	2. Less than a few times a year	
		Q1b. You are treated with less respect than other people	3. A few times a year	
		Q1c. You receive poorer service than others at restaurants	4. A few times a month	
		Q1d. People act as if they think you are not smart	5. At least once a week	
		Q1e. People act as if they are afraid of you	6. Almost everyday	
		Q1f. People act as if they think you are dishonest	7. Several times a day	
		Q1g. People act as if they think you are not as good as they are		
		Q1h. You are called names or insulted		
		Q1i. You are threatened or harassed		
	2. Attribution	Q2. Main reason for all experiences of everyday discrimination	1. Age	
			2. Sex	
			3. Race	
			4. Height or weight	
			5. Other	
		3. Coping/responses	Q3. Behavioral coping responses to everyday discrimination	1. Speak up
				2. Accept it
				3. Ignore it
				4. Try to change it
				5. Keep it to yourself
	6. Work harder to prove them wrong			
		7. Pray		
		8. Avoid it		
		9. Get violent		
		10. Forget it		
		11. Blame yourself		
		12. Other		
B. Major Life Events (Krieger, 1990; Krieger and Sydney, 1996)	1. Occurrence	Q4–Q12. Ever experience major life event discrimination	1. Yes	
		Q4a. At school	2. No	
		Q5a. Getting a job		
		Q6a. At work		
		Q7a. Getting housing		
		Q8a. Getting resources or money		
		Q9a. Getting medical care		

Dimension/Construct	Subscales	Items	Responses (for each item)
C. Discrimination Burden	2. Frequency	Q10a. On the street or in a public place	Q4b–12c. No. of times Q4c–12d. No. of years ago Q4d–12e. No. of months ago
		Q11a. Getting services	
	Q12a. Other ways		
	Q4–Q12. If experienced major life event, how often and how recent		
3. Attribution	Q13. Main reason for major life event unfair discrimination	1. Age 2. Sex 3. Race 4. Height or weight 5. Other	
4. Coping Responses	Q14. Behavioral coping responses to major life event discrimination (Krieger, 1990; McNeilly et al, 1996)	1. Yes 2. No	
		Q14a. Speak up Q14b. Accept it Q14c. Ignore it Q14d. Try to change it Q14e. Keep it to yourself Q14f. Work harder to prove them wrong Q14g. Pray Q14h. Avoid it Q14i. Get violent Q14j. Forget it Q14k. Blame yourself Q14l. Other	
		Q 14. Extent of use of behavioral coping response	1. A little 2. Some 3. A lot
1. Comparative frequency	Q15. Frequency of discrimination when younger compared with now	1. About the same 2. Less frequent 3. More frequent	
2. Stressful life	Q16. Extent to which lifetime discrimination was stressful	1. Not stressful 2. Moderately stressful 3. Very stressful	
3. Productive life	Q17. Extent to which discrimination interfered with having full and productive life	1. Not at all 2. A little	

Dimension/Construct	Subscales	Items	Responses (for each item)
			3. Some 4. A lot
	4. Life made hard	Q18. Extent to which life has been hard because of discrimination	1. Not at all 2. A little 3. Some 4. A lot
D. Effect of Skin Color	1. Treatment by Whites	Q19. White treatment because of skin color	1. A lot better 2. Somewhat better 3. No different 4. Somewhat worse 5. A lot worse
	2. Treatment by Blacks	Q20. Black treatment because of skin color	1. A lot better 2. Somewhat better 3. No different 4. Somewhat worse 5. A lot worse